

MBTA Title VI Report

May 2005





Massachusetts Bay Transportation Authority

Mitt Romney
Governor

Kerry Healey
Lt. Governor

John Cogliano
Secretary and MBTA Chairman

Daniel A. Grabauskas
General Manager

May 31, 2005

Ms. Margaret Griffin
Region 1 Civil Rights Officer
Federal Transit Administration
Transportation Systems Center, Suite 920
Kendall Square
55 Broadway St.
Cambridge, MA 02142-1093

BY HAND DELIVERY

Re: Submission of MBTA Title VI Compliance Plan

Dear Ms. Griffin:

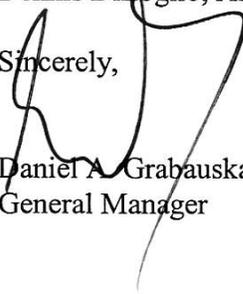
Enclosed please find for your review the MBTA final Title VI Compliance Plan. This report is the culmination of a process begun over a year ago for improved monitoring and reporting of MBTA efforts to ensure our services are delivered equitably in accord with federal requirements.

This Report, as with the prior quarterly progress reports provided over the past year, is done in a format based on guidance of the FTA's 1988 Circular on Title VI compliance. This Report incorporates corrections and additional materials developed since the quarterly progress reports, as well as revisions based on comments and feedback from your office regarding those Reports.

On behalf of the Authority, I want to thank you for the assistance you and your office have provided in organizing our Title VI planning and monitoring process. We hope you find the analyses, maps and policy standards clear and informative. We know this is an ongoing process and look forward to working with you in our continuing Title VI efforts.

If you have questions, please feel free to contact me @ (617) 222-3106, Jeanne Morrison, Assistant General Manager for Organizational Diversity & Civil Rights @ (617) 222-5763 or Dennis DiZoglio, Assistant General Manager for Planning & Real Estate @ (617) 222-4292.

Sincerely,


Daniel A. Grabauskas
General Manager

MBTA Title VI Report 2005

MBTA TITLE VI MISSION STATEMENT

The MBTA is committed to providing a level and quality of service to minority individuals and communities that is equivalent to the services provided throughout the system.

MBTA TITLE VI REPORT PURPOSE

To document the steps the MBTA has taken and will take to ensure that, for all programs and activities receiving federal financial assistance, the MBTA provides services without excluding or discriminating against minority individuals and communities, or creating additional barriers to use of the MBTA transit system for minorities.

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CHAPTER 1

Introduction

Title VI of the Civil Rights Act of 1964 provides that “no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving federal financial assistance.” To fulfill this basic civil rights mandate, each federal agency which provides financial assistance for any program is authorized and directed by the United States Department of Justice to apply provisions of Title VI to each program by issuing applicable rules, regulations, or requirements. The Federal Transit Administration (formerly the Urban Mass Transportation Administration) of the United States Department of Transportation issued guidelines on May 26, 1988, FTA C 4702.1, describing the contents of Title VI Compliance Programs to be adopted and maintained by recipients of FTA-administered funds for transit programs.

This document constitutes the Massachusetts Bay Transportation Authority’s Title VI Program, adopted in May 2005 with the approval of General Manager Daniel A. Grabauskas. This program is the product of a year-long effort undertaken by the MBTA’s Title VI Working Group, in cooperation with the FTA’s Region I Civil Rights Officer, to create and implement a Title VI program that is fully compliant with federal guidelines and which will be responsive to the needs of Title VI beneficiaries, and of all the MBTA’s customers and constituencies. The Working Group is cochaired by Dennis DiZoglio, Assistant General Manager for Planning, Real Estate and Environmental Affairs, and Jeanne Morrison, the Assistant General Manager for the Office of Diversity and Civil Rights. The Working Group is directed by Joseph Cosgrove, Director of Planning, and includes representatives from Operations, Operations Support, Marketing, Service Planning, Budget, Legal, Design and Construction, and the Office of Diversity and Civil Rights.

The Central Transportation Planning Staff of the Boston Metropolitan Planning Organization has been a key partner in the Title VI Working Group effort, responsible for collecting and analyzing much of the necessary data, providing statistical analysis and graphics support, and generally lending its technical expertise to the development of the program. In addition, CTPS has done the layout and editing work to produce this plan

and prior working reports to FTA during the past year. Clinton Bench, Manager of Transit Service Planning, directed CTPS staff work on this project.

The format of this plan follows the guidelines laid out in FTA C 4702.1, entitled “Program Guidelines for [FTA] Recipients.” Chapter 2 addresses the MBTA’s general reporting requirements under the circular, describes the nature and extent of federal grants, summarizes prior civil rights complaints and compliance review activity, and analyzes the impact on minority and nonminority communities of the MBTA’s extensive construction programs financed with federal assistance. Chapter 3 lays out graphically the MBTA’s extensive transit service network and describes the service policies and standards under which the Authority operates to ensure high-quality and safe levels of services to the public. Chapter 4 analyzes in depth the extent to which the MBTA has met its service standards and compares levels and quality of service provided to the various communities served by the MBTA. Finally, Chapter 5 discusses prospective service changes and the efforts made by the MBTA to communicate effectively with and invite the participation of minority constituents and Limited English Proficiency beneficiaries in planning and implementing its basic mandate.

Questions or comments about the content of this program may be addressed to Dennis DiZoglio, AGM for Planning, Real Estate and Environmental Affairs, MBTA, Room 5750, 10 Park Plaza, Boston, MA 02116, or to Jeanne Morrison, AGM for Diversity and Civil Rights, MBTA, Room 5720, 10 Park Plaza, Boston, MA 02116.

TABLE 1-1

Outline of Title VI Report				
Report Chapter	Section	Documentation	Subsection of Circular Chapter III	Circular Reference FTA C4702.1
Introduction			N/A	N/A
General Reporting Requirements	Civil Rights Complaints	Customer service complaints	General Reporting Requirements	III. 2.a
		List of lawsuits		
	Description of Pending Applications for Federal Assistance	Description of applications and federal financial assistance currently provided		III. 2.b
		Listing of projects programmed - minority/nonminority investments		
		Audit subrecipients for compliance		
	Summary of Civil Rights Compliance Review Activities			III. 2.c
	Signed UMTA Civil Rights Assurance			III. 2.d
	Signed DOT Assurance			III. 2.e
	Fixed-Facility Impact Analyses for Construction Projects	Detailed analyses on projects reported through FY 05		III. 2.f
Ongoing analyses of projects for coming year				
Transit Coverage and Standards	Demographic and Service Maps, Overlays, and Charts		Program-Specific Requirements	III. 3.a (1)
	Service Standards and Policies	Vehicle load		III. 3.a (2a)
		Vehicle assignment		III. 3.a (2b)
		Vehicle headway		III. 3.a (2c)
		Distribution of transit amenities		III. 3.a (2d)
		Transit access		III. 3.a (2e)

TABLE 1-1 (cont.)

Outline of Title VI Report				
Report Chapter	Section	Documentation	Subsection of Circular Chapter III	Circular Reference FTA C4702.1
Assessment of Compliance	Procedures for Achieving and Assessing Compliance		Program-Specific Requirements	III. 3.a (3a&b)
	Systemwide Changes and Proposed Improvements			III. 3.a (3c)
	Vehicle Load and Vehicle Headway	Buses and trackless trolleys		III. 3.a (3d)
		Rapid transit (Red/other lines)		
		Commuter rail		
	Vehicle Assignment	Buses and trackless trolleys (incl. determination of whether previous corrective actions were sufficient)		III. 3.a (3d)
		Rapid transit (Red/Green)		
		Commuter rail		
	Transit Access	Review of recent changes		III. 3.a (3d)
		Assessment of proposed service changes		
Distribution of Transit Amenities	Station escalators and elevators	III. 3.a (3d)		
	Bus shelters (placement/condition)			
	Parking			
Quality of Service		III. 3.a (3d)		
Other Areas of Title VI Considerations	Service Changes over Next 3 Yrs.		III. 3.a (4a)	
	Information Dissemination to Minority Communities	Availability of service and meeting notices	III. 3.a (4b)	
		Availability of directional and warning signs		
	Minority Representation on Decision-Making Bodies		III. 3.a (4c)	
	Multilingual Facilities	Evaluation of current efforts to assist non-English-speaking persons	III. 3.a (4d)	
		Evaluation of current efforts to provide meeting notices to assist non-English-speaking persons		
Evaluation of current efforts to provide bilingual directional and warning signs to assist non-English-speaking persons				



CHAPTER 2

General Reporting Requirements

[FTA C4702.1 III.2]

CIVIL RIGHTS COMPLAINTS

[FTA C4702.1 III.2 (a)]

The MBTA's Present System of Internal Complaint Processing

At present, the MBTA receives customer complaints through several channels, including complaints received directly by the Marketing Department through walk-ins or by telephone or e-mail, complaints received via e-mail from the MBTA website to individual senior managers through the Write to the Top program, complaints received by the Marketing Department via the “Feedback” portal on the website, complaints received by the Office of Transportation Access (OTA) or THE RIDE (for contracted services), and complaints received by other departments or entities such as Mass Bay Commuter Rail or the MBTA Police Department.

Complaints received by Marketing either directly or through “Feedback” are logged into Marketing's locally managed database program. Those that allege poor service and attribute the reason to the complainant's race, gender, age, national origin, religion, or disability are classified in the database as “civil rights complaints” and are then referred to the appropriate operating area for investigation and resolution. Marketing also frequently provides informational copies of civil rights complaints to Office of Diversity and Civil Rights (ODCR) or the Legal Department, but ODCR and Legal do not ordinarily investigate these complaints in a formal way, unless they have been filed with an external agency, such as the Massachusetts Commission Against Discrimination (MCAD). The operating areas receiving complaints from Marketing assign them to a manager for investigation, and operations staff report back on the findings to Marketing, which logs the findings in its complaint tracking system. These investigations vary in quality, timeliness, and thoroughness. If the accused employee denies the allegations, the typical resolution is to reinstruct the employee in MBTA policy and to send a note of apology to the customer. Service-related complaints may also be referred to the Service Planning and Operations departments if the long-term apparent “fix” for the identified problem would entail a permanent change in routes or service levels.

Our review of recent complaints logged as civil rights complaints indicates that some

show no resolution, but only an “awaiting action” status. Marketing does prod operations departments when they are slow to respond, but there is no systematic check to ensure that complaints are closed in a timely fashion and that appropriate corrective action, including discipline if warranted, has in fact been taken. The Marketing Department prepares and distributes a monthly summary of the volume of the complaints by mode of service.

Complaints from seniors and persons with disabilities are received and processed by THE RIDE or OTA, which categorize the complaints as “Employee, Equipment, or Facility,” by location, and by their nature (e.g., that the employee was “rude/insensitive,” did not give a “stop announcement”; that equipment was deficient because of a broken lift or other problem; or that a facility was deficient because an elevator did not work) These departments submit a quarterly report to FTA.

Complaints submitted to a senior manager through Write to the Top are referred to the proper area for investigation and preparation of a written response by the senior manager who received the complaints. A hard copy file of these complaints and responses is maintained in Marketing, but they are not logged into the Marketing database.

Civil rights complaints comprise a tiny percentage of the overall volume of communications and complaints the MBTA receives annually from customers. A review of the Marketing reports for 2004 indicates that these were over 50,000 communications, of which about 1,200 to 1,800 a month were classified as complaints. Of the total complaint volume in 2004 of 17,923, fewer than 100 were classified as civil rights complaints.

In sum, the MBTA does investigate and responds to civil rights complaints. However, the intake system is fragmented and the absence of a single, common format and database makes it difficult, if not impossible, for the MBTA to categorize, prioritize, track, investigate, resolve, and analyze customer complaints generally, and civil rights complaints in particular, on a systemwide basis. In 2003, the MBTA engaged a consulting firm, KKO Associates, to study the complaint management system and make recommendations. KKO prepared a report that commented on the fragmented nature of the system and the need for a common database, but the recommendations were not implemented at that time for financial reasons. The MBTA continues to recognize the desirability of upgrading its MIS and telephone communications systems for complaint intake and tracking. While there is value in having multiple channels for lodging complaints, it would be desirable to record and track all customer complaints, regardless of the intake channel, in a central database, in order to evaluate and analyze trends and identify recurring problems across the system. Each department could continue to do its own investigations and could track the data on the complaints it receives, but each would also be required to enter the complaint data in a common format in the central database. This would enable the MBTA to identify and address persistent problems by the nature of the complaint, the mode of service, the geographic location, and the management team responsible for correction.

The MBTA also recognizes that tracking customer complaints is informative for Title VI purposes in two respects. First, those complaints that directly allege a Title VI violation, such as a consumer alleging that she was subjected to an ethnic slur or denied services because of her national origin, require immediate investigation and, if merited, corrective action. Second, even routine customer service complaints which do not on their face allege a Title VI violation, such as a complaint that a bus route is chronically overcrowded or late, or that transit amenities are lacking or dysfunctional at a particular station or service, may, if recurrent, indicate a failure to provide an equitable level of service at a minority station or on a minority route. By capturing data on all these routine complaints systemwide, periodically analyzing the nature and origin of the complaints, and potentially weighting complaints by observed ridership for a given line or station, the MBTA can better assess whether there is any pattern of service shortfall that would indicate Title VI concern.

Recommended Improvements to the Complaint Management System Proposed by the Title VI Working Group

The long-term solution to this issue requires a substantial technology investment in improved complaint tracking and communications systems to record and capture complaints in a common format and database. Improvements in the telephone intake system would permit the recording of complaints and automated logging of complainant information into a database. The use of a web-based complaint form would improve the capture of relevant information, speed the distribution of complaint information for more prompt investigation, and permit more sophisticated and timely analysis of complaint trends, permitting more effective corrective action. CTPS could then analyze complaints geographically as part of its overall assessment of whether minority routes and stations are receiving service comparable to the service provided throughout the system. Implementation of such a system would also require some additional personnel, and would take at least 18 months from the date the decision to proceed is reached. The Title VI Working Group, Information Technology Directorate (ITD), and KKO Associates (the MBTA's consultant) jointly recommend that as financial resources permit, the investment in a state-of-the-art customer complaint communication and data management system should be made because the investment would benefit the MBTA across a number of areas and functions.

In the interim, the Working Group also recognizes the immediate need to improve training, complaint intake, and the quality, timeliness, and consistency of investigations of Title VI and other civil rights complaints. The section below outlines the steps that have already been taken and those that will be taken over the next six months to produce these short-term improvements, whether or not the resources become available in that time frame to adopt the broader recommendations for the technological improvements.

Improved Training and Dissemination to Passengers of Information on Their Title VI Rights

The MBTA has launched a major initiative to upgrade customer service in subway stations by assigning hub monitors to key stations and employing collectors displaced by automated fare collection as customer service agents (CSAs). The Human Resources training module for these positions (and customer-service training of operators and inspectors generally) has been modified to include basic training on Title VI rights and responsibilities, and the obligations of MBTA employees to assist customers, including limited-English-proficiency (LEP) customers, in the filing of civil rights complaints. This training has begun and is continuing through at the implementation of automated fare collection, by which time all CSA's and hub monitors will have received the training.

ODCR has prepared a brief informational notice to be made available to passengers in hard copy and to be placed on the MBTA website and translated into the principal languages spoken by LEP ridership. The notice informs passengers of their basic rights under Title VI and of their right, in particular, to file a complaint with the MBTA or FTA and to have it investigated and resolved in a fair and impartial manner.

Improved Timeliness, Thoroughness, and Quality of Complaint Intake and Investigation

ODCR will, prior to September 1, 2005, provide a four-hour training program in complaint intake and investigation to appropriate personnel in the Marketing Department, OTA, and THE RIDE, and to manager-investigators in key operating departments (bus, subway, revenue, and commuter rail) who interface with the public. ODCR has a staff of three experienced attorney-investigators who will conduct the training. The emphasis in training intake personnel will be on the skills necessary to elicit, in a nonleading way, the critical information needed to assess whether a complainant is alleging disparate treatment on account of a characteristic protected by the civil rights laws, and if so, what evidence the complainant has to substantiate that complaint. The training of operations managers conducting field investigations of passenger complaints will draw on the training materials used by ODCR to train its own investigators, and will give managers guidance on how to interview complainants and witnesses to obtain the salient facts needed to assess the merits of a civil rights claim. ODCR will also continue to work with KKO Associates to adopt a common complaint intake/investigation form that can be placed on the website in multiple languages and can be used by intake personnel and investigators to ensure a consistent and thorough capture of information needed for assessing the merits of individual complaints.

The chief operating officer will designate a management-level operations employee to assist Marketing by assuming responsibility for tracking and closing all Title VI complaints received in Marketing through any channel, tracking the timeliness of operations' investigations and responses, and ensuring adequate feedback to Marketing of findings and resolutions of complaints. The same individual will provide quarterly and

annual reports of civil rights complaint activity to ODCR, the Title VI Working Group, and senior management. On request, ODCR will provide technical and substantive guidance and assistance to operations managers who are conducting investigations. Where operations requests special assistance and where the complaint in question raises serious allegations, ODCR will assign one of its civil rights investigators to participate in the investigation of the complaint.

Documentation of Lawsuits

Active Lawsuits or Complaints Naming the MBTA Which Allege Discrimination on the Basis of Race, Color, and/or National Origin With Respect to Service or Other Transit Benefits

1. Complainant G, L

Forum: MCAD

Filed: 08/25/03

Basis: Race/color

Status: Position statement filed. Per Authority records, Complainant's customer complaint was that she had received a "mismarked" transfer from Route 214 and that the Operator on Route 111, who was "very rude," refused to accept the transfer and required Complainant to pay the fare to Boston; accordingly, Complainant was requesting that the Authority "compensate" her for her trip; per the Authority's investigation, on August 29, 2003, the Operator was interviewed about an incident with a black female on August 18, 2003, and the Operator advised that she had no knowledge of the incident; notably, on August 20, 2003, being nine days before the interview, the Operator had filed a report regarding passengers who had boarded her bus that day with invalid transfers and who had become verbally abusive when she told each that each had to pay a fare; since the interviewer was aware of the Operator's August 20, 2003, report, the interviewer inquired whether the August 20, 2003, report referred to an incident with a black female on August 18, 2003; the Operator replied no, that her August 20, 2003, report pertained to two separate incidents earlier that day, one involving a young white woman and the other involving a man; further, Complainant's customer complaint version, together with her MCAD version, do not withstand scrutiny in that Complainant alleges that in Chelsea at 4:13 p.m. she presented to the Operator on Route 111 a "mismarked" transfer from Route 214—which runs between Quincy Center Station and Germantown—but it is unlikely that, within the requisite two hours for a transfer to be valid, Complainant would have traveled along the route between Germantown and Quincy on a Route 214 bus and also would have arrived in Chelsea; finally, this was the third customer complaint that Complainant filed in 2003, i.e., in February 2003, she maintained that a Collector gave Complainant change for a \$10 bill, although she had given the Collector a \$20 bill, and asked to be reimbursed the dif-

ference, plus an additional \$5 she had spent for calls to the Authority [although the Authority's investigation revealed that the station was short \$12.93, the Authority sent Complainant a refund] and in March 2003, Complainant maintained that she received incorrect information from an Authority employee regarding which bus to take; that when Complainant realized that she was on the wrong bus, she requested her fare back; that the Operator would not give the fare back and did not have any transfers; and that, when Complainant tried to explain to the Operator of the correct bus, he gave Complainant "a hard time, was generally rude and made her pay the fare again," with respect to which Complainant asked that the Authority do something to help her "forget that the incident happened."

2. Complainant M-P, J

Forum: MCAD

Filed: 08/27/03

Basis: National origin

Status: Position statement filed. Per Authority records, Authority police removed the passenger from the bus because she was creating a disturbance with the loud use of a cell phone in that she refused the Operator's three requests to lower the volume of her voice.

3. Complainant R-R, M

Forum: MCAD

Filed: 08/04/03

Basis: Race/color, national origin

Status: Position statement filed. Per the Authority's investigation, when the Complainant missed her stop, she launched into an emotional tirade against the Operator who at no time ordered her to leave the bus.

4. Complainant T, C

Forum: MCAD

Filed: 3/4/05

Basis: Race/color

Status: Position statement filed. By way of background, North Station, due to construction, is the final stop for Green Line service. At North Station, the Authority provides shuttle buses for customers to continue on to Lechmere. Customers arriving at North Station via the subway who desire to continue on a shuttle bus must either obtain a transfer ticket before exiting North Station (as proof of payment of the fare) and provide same to the bus operator or pay an additional fare. Complainant alleges that, when he boarded a shuttle bus, he was ordered to pay an additional fare, that he did not have any money and that he was ordered off of the bus

because he is Hispanic. Evidently, Complainant failed to provide the bus operator with a transfer ticket and, as a result, he was requested to either pay the fare or disembark. Complainant filed a complaint with the Authority's Customer Relations Department, which complaint the Authority's Office of Diversity and Civil Rights investigated. Per the Authority's investigation, the bus operator was identified and questioned about the incident, and the bus operator had no recollection of an incident with a Hispanic male on the date Complainant specified.

Inactive Lawsuits or Complaints Naming the MBTA Which Allege Discrimination on the Basis of Race, Color, and/or National Origin With Respect to Service or Other Transit Benefits But Which Were Active During 2002–2005

1. Complainant B, L (1/05 Active No. 1)

Forum: MCAD

Filed: 06/11/96 & later amended

Basis: Race/color

Status: Motion to dismiss challenging MCAD's jurisdiction and timeliness of amendment and position statement filed.

Lack of probable cause finding issued.

Complainant appealed.

Appeal heard.

Affirmed.

DESCRIPTION OF ALL PENDING APPLICATIONS FOR FEDERAL FINANCIAL ASSISTANCE AND ALL FINANCIAL ASSISTANCE CURRENTLY PROVIDED BY OTHER FEDERAL AGENCIES

[FTA C4702.1 III.2(B)]

The Authority has four grant applications pending with the Federal Transit Administration (FTA). The grant applications are for the Station Management Program, Compressed Natural Gas Procurement and Bus Repair, FY05 Green Line Accessibility and the Public Address/Electronic Signs upgrade. The Authority needs to provide additional information in order that FTA can begin their review.

Documentation of Methodology for Classifying System Reinvestment Projects

In order to assess adherence to Title VI guidelines for the MBTA's planned system reinvestment capital projects, it is necessary to calculate proportions of improvements to be made in minority versus nonminority-designated services, stations, and other facilities. According to the FTA Title VI guidelines, a minority transit route is one on which at least 33% of route mileage is located in minority neighborhoods. While this exact definition is used for bus routes, the MBTA determines minority route status for rail lines based on whether the percentage of stations located in minority neighborhoods reaches

the 33% threshold. This variation acknowledges that, unlike most bus routes, rail lines are only accessible to customers at widely-spaced station locations. In all cases, a minority neighborhood is defined as one where the proportion of minority residents is higher than the average for the entire service area.

Using census data, each rapid transit, light rail, or commuter rail stop was classified as either minority or nonminority. If more than 33% of the stops on a line were designated minority, the entire line was classified as minority, regardless of the relative numbers of passenger boardings by stop. For the Green Line, the four branches were considered individually. The total number of stops on each route included the surface stops on that route alone and the subway stations served either by that route alone or by that route and others. Using these assumptions, the Red, Orange, and Blue Lines, and the B and E branches of the Green Line were classified as minority, and the C and D branches of the Green Line, along with the Mattapan High Speed Trolley Line, as non-minority. On the commuter rail system, the Attleboro/Stoughton, Fairmount, and Middleborough/Lakeville Lines were classified as minority, and all the others as nonminority. As noted above, bus and trackless trolley lines were classified as minority if at least 33% of route-mileage, excluding nonstop express segments, was located in minority neighborhoods.

At the level of detail available, capital improvements can be associated with specific locations to varying degrees. Projects related to a single route or to a single station location were classified as minority or nonminority according to the classification of that route or station. However, many planned projects would impact several routes or locations. To estimate the portions of spending on such projects applicable to minority and nonminority services, allocation factors were developed on the basis of route and facility classifications, weighted by their corresponding ridership figures. For example, using the minority/nonminority classifications listed above for the rapid transit lines (including the Red, Orange, Blue, and Green Lines and the Mattapan Line), 85% of ridership is on minority services and 15% on nonminority services. Therefore, for projects related to the rapid transit system as a whole (but not directly to other MBTA services), 85% of the costs were classified as minority investments and 15% as nonminority investments.

For the commuter rail system as a whole, 28% of ridership was found to be on minority services. Therefore, for projects related to the entire commuter rail system, but not to other MBTA services, 28% of costs were classified as minority investments and 72% as nonminority investments.

For the rapid transit and commuter rail systems combined, 75% of ridership was found to be on minority services. Therefore, for projects related to the overall rapid transit system and the overall commuter rail system, but not to other MBTA services, 75% of costs were classified as minority investments and 25% as nonminority investments.

For the bus and trackless trolley systems combined, 76% of ridership was found to be on minority services. Therefore, for projects related to the overall bus and trackless trolley system but not to other MBTA services, 76% of costs were classified as minority investments and 24% as nonminority investments. For the trackless trolley system alone, only

TABLE 2-1
Massachusetts Bay Transportation Authority
SYSTEM REINVESTMENTS
(\$ in millions)

PROJECT	FY06-FY10						
	Authorized Budget	Actual as of FY05	Total FY06-FY10	% Minority	% Non-Minority	\$ Minority	\$ Non-Minority
Red Line No. 1 Car Reinvest.	5.00	4.04	0.96	100%	0%	0.96	0.00
Red Line No. 2 Car Overhaul	66.00	0.00	65.96	100%	0%	65.96	0.00
Red Line No. 3 Upgrade	2.34	0.00	2.34	100%	0%	2.34	0.00
Green Line Low Floor Cars	223.83	130.68	93.15	56%	44%	52.16	40.98
Green Line No. 7 Car Mod.	16.32	9.44	6.87	56%	44%	3.85	3.02
Orange Line Cars Reinvest.	12.90	11.08	1.82	100%	0%	1.82	0.00
Orange Line Cars Rebuild II	18.74	3.34	15.41	100%	0%	15.41	0.00
Blue Line Fleet Procurement	205.00	59.04	145.96	100%	0%	145.96	0.00
Subway Vehicle Paint Prgm.	1.49	1.44	0.05	85%	15%	0.04	0.01
Locomotive Midlife Overhaul	43.62	39.96	3.66	28%	72%	1.02	2.64
Locomotive Top Deck Ovrhl.	16.31	2.72	13.59	28%	72%	3.81	9.79
Pass. Coach Mntce. Prgm.	23.84	0.02	23.82	28%	72%	6.67	17.15
Kawasaki Coach Overhaul	75.00	0.00	75.00	28%	72%	21.00	54.00
New Locomotive Proc.	32.49	32.48	0.00	28%	72%	0.00	0.00
Wash. St. Vehicles (Ph I)	13.30	13.28	0.02	100%	0%	0.02	0.00
NeoPlan 60-ft CNG Buses	17.93	17.90	0.02	100%	0%	0.02	0.00
Replacement Buses - Ph. 1	31.00	5.16	25.84	76%	24%	19.64	6.20
Replacement Buses - Ph. 2	55.82	0.00	55.82	76%	24%	42.42	13.40
NABI 40-ft CNG Buses	108.03	103.25	4.78	89%	11%	4.25	0.53
NeoPlan 40-ft ECD Buses	67.62	52.27	15.35	76%	24%	11.67	3.68
NeoPlan Elec. Trolley Buses	29.95	29.92	0.03	6%	94%	0.00	0.03
"Zero-Series" Overhaul	49.87	35.65	14.22	76%	24%	10.80	3.41
New Flyer 40-ft CNG Buses	6.00	5.61	0.39	89%	11%	0.35	0.04
Bus Technology Initiatives	4.00	3.74	0.26	76%	24%	0.20	0.06
RIDE Vehicle Program	16.05	1.21	14.84	46%	54%	6.83	8.01
Systemwide NRV Program	10.26	0.00	10.26	76%	24%	7.80	2.46
Subway Ops. Equipment	1.26	0.91	0.35	85%	15%	0.30	0.05
Police Fleet Modernization	1.13	0.00	1.13	76%	24%	0.86	0.27
Highland Branch (Ph 1-3)	14.11	3.85	10.27	0%	100%	0.00	10.27
Green Line Track Improvmnts	8.18	7.19	0.99	56%	44%	0.55	0.44
Systemwide Track Maintnce.	132.99	52.83	69.50	75%	25%	52.13	17.38
Commuter Rail Track Repl.	8.05	3.04	5.01	28%	72%	1.40	3.61
Curve Track Upgrade	1.00	0.99	0.01	28%	72%	0.00	0.00
Systemwide Signal Maint.	80.46	26.61	47.00	75%	25%	35.25	11.75
Red Line Signal/Cable Upg.	5.17	5.16	0.00	100%	0%	0.00	0.00
Green Line Lechmere Signals	8.90	0.00	8.90	100%	0%	8.90	0.00
Orange Line North Sgnl Upg.	84.20	24.89	59.31	100%	0%	59.31	0.00
Blue Line Signal Upgrade	30.00	1.67	28.33	100%	0%	28.33	0.00
Fitchburg Line Signal Upg.	0.11	0.00	0.11	0%	100%	0.00	0.11
Haverhill Interlockings	2.91	0.00	2.91	0%	100%	0.00	2.91
Systemwide Radio Project	58.27	35.14	23.13	75%	25%	17.34	5.78
Bus OCC Installation	18.37	18.20	0.17	76%	24%	0.13	0.04
Police Talkback Boxes	0.38	0.00	0.38	76%	24%	0.29	0.09
Station Mngmnt. Radios	1.22	0.03	1.19	85%	15%	1.01	0.18
Customer Svce. Phone Sys.	2.00	0.93	1.07	76%	24%	0.81	0.26
Red Line Subst. Breakers	10.44	0.00	10.44	100%	0%	10.44	0.00

TABLE 2-1 (cont.)
Massachusetts Bay Transportation Authority
SYSTEM REINVESTMENTS
(\$ in millions)

PROJECT	FY06-FY10						
	Authorized Budget	Actual as of FY05	Total FY06-FY10	% Minority	% Non-Minority	\$ Minority	\$ Non-Minority
Green Line Power Study	0.35	0.00	0.35	56%	44%	0.19	0.15
Green Line D-Line Cables	2.00	0.41	1.59	0%	100%	0.00	1.59
Blue Line Negative Returns	3.32	3.17	0.15	100%	0%	0.15	0.00
Blue Line Power + Vent.	32.05	29.62	2.43	100%	0%	2.43	0.00
Blue Line OCS	0.51	0.00	0.51	100%	0%	0.51	0.00
Mattapan Line Catenary	3.50	0.94	2.56	0%	100%	0.00	2.56
Substation Control Batteries	4.19	0.00	4.19	83%	17%	3.48	0.71
Rectifier Transformer Repl.	5.00	0.00	5.00	83%	17%	4.15	0.85
Trackless Trolley Catenary	4.00	1.24	2.76	6%	94%	0.17	2.60
SCADA System Repl.	1.70	0.07	1.63	76%	24%	1.24	0.39
Orient Hgts. Carhouse	42.60	28.69	13.91	100%	0%	13.91	0.00
Capital Spares Warehouse	1.25	0.26	0.99	0%	100%	0.00	0.99
Everett Roof Repair	1.58	0.00	1.58	76%	24%	1.20	0.38
Cabot Floor Rehabilitation	0.78	0.05	0.73	76%	24%	0.56	0.18
Commuter Rail Fac. Upgrades	2.66	0.15	2.51	28%	72%	0.70	1.81
Southampton St. Facility	54.54	49.93	4.61	100%	0%	4.61	0.00
Arborway Facility	110.00	20.98	89.02	89%	11%	79.23	9.79
CNG Facility Retrofit	48.33	31.36	16.97	76%	24%	12.90	4.07
Cabot Bus Facility Upgrade	2.31	0.18	2.13	89%	11%	1.90	0.23
Bus Facilities Upgrade	9.05	2.73	6.32	76%	24%	4.80	1.52
Systemwide Roof Rehab	1.60	1.21	0.39	76%	24%	0.29	0.09
Blue Line Orient Heights Sta.	30.00	0.01	29.99	100%	0%	29.99	0.00
Blue Line Maverick Station	62.70	5.09	57.61	100%	0%	57.61	0.00
Blue Line State St. Station	75.00	21.49	53.51	0%	100%	0.00	53.51
Blue Line Govt. Center Sta.	26.65	2.49	24.15	100%	0%	24.15	0.00
Blue Line Airport Station	32.43	32.26	0.17	0%	100%	0.00	0.17
Blue Line Aquarium Station	111.10	108.02	3.08	0%	100%	0.00	3.08
Blue Line Wood Isl. Plat.	1.58	0.00	1.58	0%	100%	0.00	1.58
Blue Line Station Imprvmnts	10.52	0.00	10.52	100%	0%	10.52	0.00
Red Line - Dorchester Stas.	66.39	34.45	31.95	100%	0%	31.95	0.00
Red Line Ashmont Station	44.11	2.20	41.91	100%	0%	41.91	0.00
Red Line South Station	13.00	11.41	1.59	0%	100%	0.00	1.59
Red Line Mattapan Station	10.00	0.30	9.70	100%	0%	9.70	0.00
Park Street Stairs	0.36	0.00	0.36	0%	100%	0.00	0.36
Midlife Station Upgrade	20.95	7.77	13.18	85%	15%	11.20	1.98
Attleboro Station	1.06	0.88	0.18	100%	0%	0.18	0.00
Ruggles Busway	2.67	1.01	1.66	100%	0%	1.66	0.00
Ashmont Busway	0.28	0.00	0.28	0%	100%	0.00	0.28
Back Bay Busway	3.00	2.75	0.25	100%	0%	0.25	0.00
Systemwide Bus Shelters	0.45	0.00	0.45	76%	24%	0.34	0.11
Red Line Vent Shafts (Ph. I)	18.84	9.75	9.09	100%	0%	9.09	0.00
Blue Line Mavrck. Vent Shaft	10.00	0.37	9.63	100%	0%	9.63	0.00
Pawtucket Layover Facility	19.50	19.47	0.03	100%	0%	0.03	0.00
Operations Facilities Upgrade	1.90	0.85	1.05	75%	25%	0.79	0.26
OCC Power Supply Upgrade	1.03	0.00	1.03	82%	18%	0.84	0.19
Tunnel Insp. & Inventory	1.50	0.20	1.30	85%	15%	1.10	0.19
Red Line Tunnel Repair	1.24	0.00	1.24	100%	0%	1.24	0.00

TABLE 2-1 (cont.)
Massachusetts Bay Transportation Authority
SYSTEM REINVESTMENTS
(\$ in millions)

PROJECT	FY06-FY10						
	Authorized Budget	Actual as of FY05	Total FY06-FY10	% Minority	% Non-Minority	\$ Minority	\$ Non-Minority
Merrimack River Bridge	3.43	0.30	3.13	0%	100%	0.00	3.13
Concord Main St. Bridge	3.00	0.00	3.00	0%	100%	0.00	3.00
Lechmere Viaduct	2.97	1.51	1.46	0%	100%	0.00	1.46
Drawbridge No. 1	4.73	0.00	4.73	0%	100%	0.00	4.73
Beverly Drawbridge	0.63	0.00	0.63	0%	100%	0.00	0.63
Washington St. Bridge	9.55	0.00	9.55	0%	100%	0.00	9.55
Green Line Bridges	8.98	8.86	0.12	0%	100%	0.00	0.12
Red Line Bridges	4.44	3.75	0.69	100%	0%	0.69	0.00
Taunton Bay St. Bridge	1.00	0.93	0.07	0%	100%	0.00	0.07
Franklin Branch Shop Bridge	0.60	0.55	0.05	0%	100%	0.00	0.05
Bridge Inspection Prgrm.	6.00	3.07	2.93	75%	25%	2.20	0.73
BMEP	21.59	21.37	0.22	75%	25%	0.17	0.06
Station Management Proj.	204.33	56.98	147.35	82%	18%	120.83	26.52
Green Line Interim Access	2.85	2.29	0.56	0%	100%	0.00	0.56
LRAP - Surface Stations	36.21	35.83	0.37	56%	44%	0.21	0.16
LRAP- Park St. + Haymarket	15.42	15.28	0.14	88%	12%	0.13	0.02
LRAP- Govt. Center Sta.	35.60	3.25	32.35	100%	0%	32.35	0.00
LRAP- Arlington + Copley	46.27	3.10	43.17	0%	100%	0.00	43.17
LRAP- Kenmore Station	31.30	6.19	25.11	100%	0%	25.11	0.00
LRAP- Boston College Sta.	3.29	0.00	3.29	0%	100%	0.00	3.29
LRAP- Brookline Vill. Station	2.06	0.00	2.06	100%	0%	2.06	0.00
Orange Line- Malden Ctr. Sta.	10.07	9.90	0.17	100%	0%	0.17	0.00
Orange Line- Chinatown Sta.	5.51	5.51	0.00	100%	0%	0.00	0.00
Orange Line- Haymarket Sta.	9.84	9.36	0.48	100%	0%	0.48	0.00
Red Line- Charles/MGH Sta.	40.25	25.02	15.23	0%	100%	0.00	15.23
Systemwide Elev. Upgrade	1.07	0.43	0.64	56%	44%	0.36	0.28
Comm. Rail- Fairmount Sta.	7.46	7.43	0.03	100%	0%	0.03	0.00
RIDE Computer Upgrade	1.00	0.35	0.65	46%	54%	0.30	0.35
North Station Transp. Center	262.10	251.32	10.78	76%	24%	8.20	2.59
Friction Modifier System	0.85	0.00	0.85	85%	15%	0.73	0.13
LED Station Signage	3.00	0.00	3.00	75%	25%	2.25	0.75
Park St. Eastbnd. Crossover	3.28	0.00	3.28	56%	44%	1.84	1.44
Green Line Arborway Rest.	10.00	2.07	7.93	100%	0%	7.93	0.00
Wonderland T.O.D.	10.20	0.00	10.20	0%	100%	0.00	10.20
Fairmount Line Infrast.	37.31	3.65	33.66	100%	0%	33.66	0.00
Coach Emergency Lights	1.87	0.00	1.87	28%	72%	0.52	1.35
5 New Coaches (RIDOT)	11.50	0.50	11.00	100%	0%	11.00	0.00
Comm. Rail Infrastructure	32.33	30.28	2.05	28%	72%	0.57	1.48
Comm. Rail Improvements	14.75	0.00	14.75	28%	72%	4.13	10.62
Smart Bus Technology	2.00	0.77	1.24	76%	24%	0.94	0.30
Systemwide Bus Signage	1.48	0.78	0.70	76%	24%	0.53	0.17
Bus Rapid Transit Devel.	0.10	0.04	0.06	76%	24%	0.04	0.01
South Station ITS Kiosks	2.12	1.27	0.85	43%	57%	0.36	0.48
MCRS Replacement Sys.	3.38	1.96	1.42	76%	24%	1.08	0.34
Station Signage Program	0.95	0.00	0.95	85%	15%	0.81	0.14
Grade Crossing Program	0.38	0.22	0.16	28%	72%	0.04	0.11
Systemwide WAN Security	2.62	2.62	0.00	76%	24%	0.00	0.00

TABLE 2-1 (cont.)
Massachusetts Bay Transportation Authority
SYSTEM REINVESTMENTS
(\$ in millions)

PROJECT	FY06-FY10						
	Authorized Budget	Actual as of FY05	Total FY06-FY10	% Minority	% Non-Minority	\$ Minority	\$ Non-Minority
MBTA "Protects" Program	1.00	0.94	0.06	100%	0%	0.06	0.00
Systemwide Art Program	0.42	0.33	0.08	0%	100%	0.00	0.08
Systemwide Safety	2.84	2.83	0.00	76%	24%	0.00	0.00
Systemwide Enhancements	2.95	0.00	2.95	76%	24%	2.24	0.71
Parking Enterprise Fund	28.70	0.00	28.70	28%	72%	8.04	20.66
New Parking Initiatives	8.00	0.00	8.00	28%	72%	2.24	5.76
Walpole Station	2.00	1.94	0.06	0%	100%	0.00	0.06
Quincy Ferry Terminal	0.50	0.00	0.50	0%	100%	0.00	0.50
Lynn Garage Waterproofing	0.30	0.00	0.30	0%	100%	0.00	0.30
North Quincy Garage	12.00	0.00	12.00	100%	0%	12.00	0.00
System Park+Ride Support	11.35	10.57	0.78	28%	72%	0.22	0.56
Wilmington Station + Parking	14.96	14.68	0.28	0%	100%	0.00	0.28
Lawrence Station Project	4.03	1.70	2.33	100%	0%	2.33	0.00
Alewife Expansion Joints	0.54	0.00	0.54	0%	100%	0.00	0.54
Woodland Parking Garage	7.00	0.00	7.00	0%	100%	0.00	7.00
Gloucester Intermodal Fac.	3.73	2.98	0.75	0%	100%	0.00	0.75
Cabot Yard Cleanup	6.00	0.02	5.98	100%	0%	5.98	0.00
Lynn Bus Fac. Remediation	5.00	0.30	4.70	68%	32%	3.20	1.50
Bus Wash Upgrades	2.05	1.69	0.36	76%	24%	0.27	0.09
Comm. Rail Exhaust Retrofit	0.10	0.09	0.00	28%	72%	0.00	0.00
S. Boston Power Plant	20.52	18.81	1.71	0%	100%	0.00	1.71
Enviro. Compliance Mgmt.	22.32	16.41	5.91	76%	24%	4.49	1.42
Readville Facil. Remediation	3.88	2.06	1.82	100%	0%	1.82	0.00
Systemwide Noise Mitigation	2.99	2.73	0.26	76%	24%	0.20	0.06
Silver Line Ph. 2 Security	4.02	2.80	1.22	0%	100%	0.00	1.22
Police Improvements	1.85	0.10	1.75	76%	24%	1.33	0.42
Bomb Mitigation Barrels	1.68	0.34	1.34	76%	24%	1.02	0.32
Emergency Exits Program	1.51	0.00	1.51	85%	15%	1.29	0.23
Tunnel Vent Security Upg.	0.50	0.14	0.36	85%	15%	0.31	0.05
Security Systems at Yards	0.42	0.00	0.42	76%	24%	0.32	0.10
Salem/Beverly Station Impr.	3.98	0.66	3.33	0%	100%	0.00	3.33
Green Line Extension Study	0.40	0.22	0.18	56%	44%	0.10	0.08
Bus Facility Analysis	2.35	0.21	2.14	76%	24%	1.62	0.51
Rockport Station Study	0.25	0.22	0.03	0%	100%	0.00	0.03
Auburndale Station Study	0.37	0.00	0.37	0%	100%	0.00	0.37
Worcester Comm. Rail Study	1.00	0.40	0.60	0%	100%	0.00	0.60
North-South Rail Link Study	0.62	0.55	0.07	28%	72%	0.02	0.05
North Shore Major Study	3.71	3.29	0.41	0%	100%	0.00	0.41
Unified Planning Work Prgm.	4.13	3.02	1.11	76%	24%	0.85	0.27
Urban Ring DEIS/R Study	6.62	6.29	0.33	100%	0%	0.33	0.00
PeopleSoft Fin. Software	12.65	12.21	0.44	76%	24%	0.33	0.11
Misc. Project Closeout Costs	297.08	296.48	0.60	76%	24%	0.46	0.14
Capital Maintenance Impr.	15.34	0.00	15.34	76%	24%	11.66	3.68
Misc. Capital Projects	8.90	7.56	1.04	76%	24%	0.79	0.25
Computer Tech. Upgrades	11.99	6.80	5.19	76%	24%	3.94	1.24
EOT Transit Program	17.26	16.51	0.75	28%	72%	0.21	0.54
Indep. Engineering Review	5.79	2.97	2.81	76%	24%	2.14	0.67

TABLE 2-1 (cont.)
Massachusetts Bay Transportation Authority
SYSTEM REINVESTMENTS
(\$ in millions)

PROJECT	FY06-FY10						
	Authorized Budget	Actual as of FY05	Total FY06-FY10	% Minority	% Non-Minority	\$ Minority	\$ Non-Minority
State of Good Repair Project	1.06	1.04	0.02	76%	24%	0.02	0.00
Bond Costs	12.00	11.51	0.49	76%	24%	0.37	0.12
Audit Costs	1.00	0.00	1.00	76%	24%	0.76	0.24
Capitalization Initiatives	104.05	55.28	47.50	76%	24%	36.10	11.40
Infrastructure Initiatives	<u>155.18</u>	<u>0.00</u>	<u>155.18</u>	<u>76%</u>	<u>24%</u>	<u>117.94</u>	<u>37.24</u>
TOTAL	4277.91	2198.86	2059.93	72.9%	27.1%	1501.34	558.59

6% of ridership was found to be on minority services. For projects related only to the trackless trolley system as a whole, 6% of costs were classified as minority investments and 94% as nonminority investments.

For the MBTA system as a whole (including rapid transit, commuter rail, bus, and trackless trolley), 76% of ridership was found to be on minority services. (This happens to be the same proportion as for the bus and trackless trolley system alone.) Therefore, for projects that would benefit the MBTA system as a whole, but could not be assigned to specific lines or stations, 76% of costs were classified as minority investments and 24% as nonminority investments.

For fiscal years 2006 to 2010, the MBTA has planned capital improvements, exclusive of expansion projects, with a total cost of \$2,059,930,000. Multiplying the cost of each project by its corresponding minority factor, \$1,501,340,000, or 73% of the total, would be applied to minority projects. This is very close to the 76% of total system ridership found to be on minority services. Thus within the limits of accuracy of the analysis, it can be concluded that planned capital improvements are distributed equitably between minority and nonminority services.

Audit of Subrecipients for Compliance

All subrecipients of federal assistance are required to maintain records documenting compliance with federal requirements, including Title VI, and other evidence pertaining to procurement/construction costs incurred in their project for three years after the project's completion date. The MBTA receives a copy of the subrecipient's Single Audit, which is required for any recipient of federal funds. If necessary, the Authority may request additional documentation. These records must be made available for inspection and audit at all reasonable times to representatives of the MBTA. The MBTA's current subrecipients, the Merrimack Valley Regional Transit Authority and the Town of Natick, are in compliance with these requirements. Because the subrecipients have received federal funds in FY 2005, the MBTA anticipates submission of new audits by the end of calendar year 2005.

In all its subgrantee agreements involving federal funds, the MBTA includes the following provisions:

Equal Opportunity

With respect to its exercise of all rights and privileges herein granted, Subrecipient shall undertake affirmative action as required by Federal and State laws, rules and regulations pertinent to Civil Rights and Equal Opportunity unless subrecipient is otherwise exempted therefrom. subrecipient agrees that it shall comply with any and all affirmative action plans submitted pursuant to the directives of any Federal agency and in accordance with Federal Law.

Non-Discrimination Policy

Subrecipient shall not discriminate against any person, employee or applicant for employment because of race, color, creed, national origin, age, sex, sexual orientation, disability or Vietnam era veteran status in its activities at the Premises, including, without limitation, the hiring and discharging of employees, the provision or use of services and the selection of suppliers, contractors, subcontractors or trades persons.

Requirements of 49 CFR Part 23

This Agreement is subject to the requirement of the U.S. Department of Transportation's regulations at 49 CFR Part 23. Subrecipient agrees that it will not discriminate against any business owner because of the owner's race, color, creed, national origin, age, sex, sexual orientation, disability or Vietnam era veteran status in connection with the award or performance of any contracts or agreements covered by 49 CFR Part 23. Subrecipient agrees to include the above statements in any subsequent contracts or agreements that it enters and cause those businesses to include such statements in further agreements.

Minority and Female Participation

Subrecipient shall take reasonable steps to encourage and utilize minority and female business enterprises in the procurement of the equipment or construction contracts.

SUMMARY OF CIVIL RIGHTS COMPLIANCE REVIEW ACTIVITIES

[FTA C4702.1 III.2(c)]

The MBTA is required to submit a Title VI Compliance Program report to FTA every three years. The MBTA's last triennial submission prior to the submission of this Title VI Compliance Program occurred in June 2002. This section summarizes the compliance review activity since the June 2002 submission.

The 2002 Title VI Compliance Program was prepared with the assistance of various departments at the MBTA and was submitted by the MBTA's Office of Diversity and Civil Rights (ODCR) to FTA in June 2002. Also in June 2002, Milligan & Company, LLC (MILLCO) and the DMP Group conducted a Limited Title VI Compliance Review on-site at the MBTA for FTA. At the conclusion of that limited-scope review, a

member of the site-visit team from MILLCO requested additional level-of-service analysis of MBTA bus shelter placements and a revised “Quality of Service” assessment. In response to MILLCO’s request, CTPS completed additional analysis of MBTA shelter placements and revised the “Quality of Service” assessment. On the basis of the analysis, the MBTA developed a bus shelter placement remedial action plan that was submitted with the updated CTPS analyses as a draft addendum to the 2002 Title VI Compliance Program, which was provided to MILLCO in October 2002. Also in October 2002, ODCR and the MBTA’s Service Planning Department created the Title VI Working Group to better internalize Title VI into ongoing MBTA business processes.

In June 2003 Mundle & Associates conducted a Triennial Review site visit for FTA. Title VI compliance was one of several programs evaluated by the site-visit consultants, and in July 2003 the FTA Region I Administrator forwarded the FY 2003 Triennial Review Final Report (prepared by Mundle & Associates) to the MBTA. The report concluded that the MBTA’s Title VI program was deficient in specified respects and directed the MBTA to implement a program of ongoing Title VI monitoring for level of service and quality of service.

In October 2003, in response to the Triennial Review deficiency finding, the ODCR submitted a plan for ongoing Title VI monitoring to FTA. This plan had been developed through the efforts of the Title VI Working Group. FTA asked for changes in that plan, and in February 2004, the MBTA submitted further documentation of progress on the remedial action plan to the FTA Region I Civil Rights Officer. This documentation was developed through the efforts of the Title VI Working Group. (Included with the report on the remedial action plan was a resubmission of the 2002 Title VI Report’s assessment of compliance and the ongoing monitoring procedures that were submitted to the FTA Region I Administrator in October 2003 to correct the 2003 Triennial Review deficiencies finding.)

In February 2004 the FTA forwarded to the MBTA the draft Limited Scope Title VI Compliance Review of the MBTA, prepared by MILLCO. This report identified the deficiencies that MILLCO found in the 2002 Title VI Report and during the course of their site visits. ODCR responded in July 2004, and in subsequent discussions, agreement was reached on the submission by the MBTA of three quarterly progress reports to the FTA Regional Civil Rights Officer in anticipation of the submittal in May 2005 of this Title VI Compliance Program.

The Title VI Working Group submitted detailed quarterly reports, which followed the reporting format of FTA Circular 4702.1, to FTA in October 2004, January 2005, and March 2005. The Working Group maintained an ongoing and constructive dialogue with the FTA Civil Rights Officer for Region 1 throughout this reporting process, and meetings were held with the Officer to discuss the interim reports. This full Title VI Compliance Program is submitted based on the contents of the quarterly reports and the input and guidance received from the Regional Civil Rights Officer over the past seven months.

This May 2005 MBTA Title VI Program includes all elements from the quarterly reports (updated with information collected since the March 2005 quarterly report and revised in accordance with comments received from FTA). The MBTA believes this Title VI Compliance Program meets the requirements of the Title VI guidelines found in FTA Circular 4702.1.

**Section 4 - Signed FTA Civil Rights Assurance on Record-Keeping Maintenance
[FTA C4702.1 III.2 (d)]**

FEDERAL TRANSIT ADMINISTRATION CIVIL RIGHTS ASSURANCE

The Massachusetts Bay Transportation Authority HEREBY CERTIFIES THAT, as a condition of receiving Federal financial assistance under the Federal Transit Act of 1964, as amended, it will ensure that:

1. No person on the basis of race, color, or national origin will be subjected to discrimination in the level and quality of transportation services and transit-related benefits.
2. The will compile, maintain, and submit in a timely manner Title VI information required by FTA Circular 4702.1 and in compliance with the Department of Transportation's Title VI regulation, 49 CFR Part 21.9.
3. The Massachusetts Bay Transportation Authority will make it known to the public that those person or persons alleging discrimination on the basis of race, color, or national origin as it relates to the provision of transportation services and transit-related benefits may file a complaint with the Federal Transit Administration and/or the U.S. Department of Transportation.

The person or persons whose signature appears below are authorized to sign this assurance on behalf of the grant applicant or recipient.



Daniel A. Grabauskas, General Manager

DATE: 5/26/05

**Section 5 - Signed Standard DOT Title VI Assurance
[FTA C4702.1 III.2(e)]**

DEPARTMENT OF TRANSPORTATION TITLE VI ASSURANCE

The Massachusetts Bay Transportation Authority (hereinafter referred to as the "Recipient") HEREBY AGREES THAT as a condition to receiving any Federal financial assistance from the Department of Transportation it will comply with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d-42 U.S.C. 2000d-4 (hereinafter referred to as the Act), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-Assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the Regulations) and other pertinent directives, to the end that in accordance with the Act, Regulations, and other pertinent directives, no person in the United States shall, on the grounds 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 for which the Recipient receives Federal financial assistance from the Department of Transportation, including the Federal Transit Administration and HEREBY GIVES ASSURANCE THAT it will promptly take any measures necessary to effectuate this agreement. This assurance is required by subsection 21.7(a) of the Regulations.

More specifically and without limiting the above general assurance, the Recipient hereby gives the following specific assurances with respect to its DOT/FTA- funded Programs:

1. That the Recipient agrees that each "program" and each "facility" as defined in subsections 21.23(e) and 21.23(b) of the Regulations, will be (with regard to a "program") conducted, or will be (with regard to a "facility") operated in compliance with all requirements imposed by, or pursuant to, the Regulations.
2. That the Recipient shall insert the following notification in all solicitations for bids for work or material subject to the Regulations and made in connection with all DOT/FTA- funded Programs and, in adapted form in all proposals for negotiated agreements: .

The Massachusetts Bay Transportation Authority, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-Assisted Programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

3. That the Recipient shall insert the clauses of Appendix A of this assurance in every contract subject to this Act and the Regulations.
4. That the Recipient shall insert the clauses of Appendix B of this assurance, as a covenant running with the land, in any deed from the United States effecting a transfer of real property, structures, or improvements thereon, or interest therein.
5. That where the Recipient receives Federal financial assistance to construct a facility, or part of a facility, the assurance shall extend to the entire facility and facilities operated in connection therewith.
6. That where the Recipient receives Federal financial assistance in the form, or for the acquisition of real property or an interest in real property, the assurance shall extend to rights to space on, over, or under such property.

7. That the Recipient shall include the appropriate clauses set forth in Appendix C of this assurance, as a covenant running with the land, in any future deeds, leases, permits, licenses, and similar agreements enter into by the Recipient with other parties: (a) for the subsequent transfer of real property acquired or improved under and DOT/FTA-funded Program; and (b) for the construction or use of or access to space on, over, or under real property acquired, or improved under any DOT/FTA-funded Program.
8. That this assurance obligates the Recipient for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property or interest therein or structures or improvements thereon, in which case the assurance obligates the Recipient or any transferee for the longer of the following periods: (a) the period during which the property is used for a purpose for which the Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits; or (b) the period during which the Recipient retains ownership or possession of the property.
9. The Recipient shall provide for such methods of administration for the program as are found by the Secretary of Transportation or the official to whom he/she delegates specific authority to give reasonable guarantee that it, other recipients, subgrantees, contractors, subcontractors, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the Act, the Regulations and this assurance.
10. The Recipient agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the Act, the Regulations and this assurance.

THIS ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property, discounts or other Federal financial assistance extended after the date hereof to the Recipient by the Department of Transportation under all federally funded programs and is binding on it, other recipients, subgrantees, contractors, subcontractors, transferees, successors in interest and other participants in such programs. The person or persons whose signatures appear below are authorized to sign this assurance on behalf of the Recipient.

DATED: _____

5/26/05

The Massachusetts Bay Transportation Authority

by _____

Daniel A. Grabauskas, General Manager

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MBTA TITLE VI FIXED FACILITY ANALYSES

The MBTA has completed Title VI fixed-facilities analyses of the following federally funded capital projects that are programmed in the Boston Region FY 2005 Transportation Investment Program (TIP):

- Automated Fare Collection/Strategic Management Initiative
- Kenmore Station Light Rail Accessibility Project (LRAP) and Surface Improvements
- Light Rail Accessibility Project, Copley Station Modernization
- Light Rail Accessibility Project, Arlington Station Modernization
- Fairmount Corridor Improvements, Phase I
- Blue Line Station Modernization, State Street Station Rehabilitation
- Blue Line Station Modernization, Maverick Station
- Ashmont Station Modernization
- Red Line Bridge Construction Program (MBTA Bridge Program)
- Bay Street Bridge – Taunton, Mass. (MBTA Bridge Program)
- Main Street Bridge – Concord, Mass. (MBTA Bridge Program)
- Ruggles Busway (MBTA Bridge Program)
- Blue Line Signal Upgrade
- Charles/MGH Red Line Station Accessibility and Modernization
- Arborway CNG Bus Maintenance and Storage Facility
- Silver Line Tunnel Integrated Security System Deployment and Testing
- Government Center – Green and Blue Line Stations
- Orange Line Signal Upgrade
- Lawrence Intermodal Station

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Automated Fare Collection/Station Management Project

PROJECT DESCRIPTION

The MBTA is upgrading its existing fare-collection systems with a new, state-of-the-art automated fare-collection system. The sites include 62 subway stations, (19 Orange, 22 Red, 12 Green, and 9 Blue), 13 Green Line surface (D Line) stations, 14 bus/LRV/trackless trolley garages, 4 Silver Line stations, 3 commuter rail stations, and the Revenue Collection Facility in Charlestown MA (includes build-out of the basement for an Equipment Maintenance and Training Facility), the future Silver Line Maintenance Facility, and the Central Computer Facility at 45 High Street, Boston, and systemwide network infrastructure improvements. The equipment to be installed includes various types of fare gates, fare vending machines, fare media validators, station information centers, ticket office machines, servers, and closed-captioned television system infrastructure (only within the existing station fare-collection areas). When the new automated fare-collection system is placed in service, the token sales agents in the booths will no longer be required. As a result of this change, the MBTA will train the former token sales agents to become customer service agents (CSAs).

AREA DESCRIPTION

The project is systemwide in implementation within the rapid transit/light rail/bus network, impacting the entire MBTA service area.

ANTICIPATED IMPACTS

The project has mainly focused on design work for station improvements and MBTA facilities that will be supporting the new automated fare system. Much of the work is being contained within the facilities and will not spill over to the surrounding communities. There may be a couple of minor impacts resulting from the improvement project, but mainly during construction. The impacts will be to a few small businesses and the customers.

The MBTA currently provides property space within some of their stations to small business, e.g., pushcarts, vendors, etc. Some of these small business owners may be affected during construction depending on how the contractor decides to install equipment in the stations, based on what they deem to be the best interests of the MBTA. For example, a pushcart vendor may have to relocate within the station if the contractor needs to use the same space to perform some construction work such as conduit or electrical work.

The impacts that will affect the MBTA's customers will be during normal transactions when entering and or exiting the stations. The MBTA has worked hard and will contin-

ue to work hard to assure that the customers' service experience is minimally affected during construction. Operationally, the MBTA will not allow any construction work that will jeopardize the safety of the people using their properties, but realizes that this will be an enormous undertaking. Construction phasing will be used to minimize any inconvenience for the customers.

MITIGATION PROPOSED

Due to the scope of the project and the elements of improving existing infrastructure, minimal mitigation is required. The contained work to be performed will be within the MBTA property, focusing on the improvements of the existing fare collection areas. All the engineering and construction activities will be performed in such as way as to not cause any air, noise, and water pollution. The objective of the project is to improve MBTA's fare collection system and allow for more enhanced customer service.

ENVIRONMENTAL DOCUMENT REFERENCES

A Categorical Exclusion (CE) was filed for the project on February 27, 2001, and was approved by FTA in June 2001. The project involves working predominately inside existing stations, on a systematic basis: therefore no impacts to environmental justice communities are anticipated.

The work that will be required will not involve any heavy equipment or any major excavation. All construction activities will be performed in such as way as to minimize or avoid noise, air, or water pollution.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Kenmore Station LRAP and Surface Improvements

PROJECT DESCRIPTION

The Kenmore Station LRAP is a station modernization/accessibility project including design for raising the platform to accommodate the new low-floor Green Line vehicles, which will provide access for passengers with disabilities. Also included is the design for new escalators and elevators to provide access from the station busway and the mezzanine level of the station to the inbound and outbound platforms. After the LRAP design was awarded, the MBTA was approached by residents, Boston University, and a hotel developer about the possibility of expanding the scope of the Kenmore Station project to include surface improvements for the station and the surrounding Kenmore Square area. The funding, in the amount of \$13 million, for the surface improvements was obtained through line items in the 1996 and 2002 Massachusetts Transportation Bond Bills

DEPARTMENT BUDGET

The Kenmore Station LRAP scope of work includes design of the following items:

- Green Line platform level – Selective demolition of walls and ceiling, raising of platform approximately 8” to accommodate low-floor Green Line vehicles, construction of new stairs and reconstructed escalators to mezzanine level, installation of new elevators and machine rooms on the east and west platforms, new ceiling/floor finishes, lighting, and CCTV security cameras.
- Mezzanine level/unpaid lobby – Selective demolition of walls and ceiling, construction of elevator to surface level, reconstructed escalator landings, renovated service rooms, reconstructed walls to support new bus canopy above, new ceiling/floor finishes, and reconfigured electrical layout for new AFC machine installation.
- Surface level – Construction of Elevator #1 ventilation headhouses (outbound platform side) and Elevator #2 platform landing and headhouse (inbound platform side).
- Stationwide – Installation/construction of electrical/communication conduit, paging/Intercom system, fire alarms, and passenger-assistance talkback devices.

The surface improvements include: tree planting, street lighting, sidewalk widening and repaving, MBTA bus platform canopy replacement, and intersection reconstruction. Site improvements include demolition of structures and planters, utilities, curbs, traffic signals, roadway paving, ornamental fences, and station landscaping.

AREA DESCRIPTION

The project is located in U.S. Census tracts 101.01 and 101.02 in the Kenmore/Fenway

neighborhood. According to the 2000 U. S. Census, the neighborhood tracts have a combined population of 8,942. Population breakdown by minority status is described in Table 2-2.

TABLE 2-2
Census Tracts 101.01 and 101.02: Kenmore

	Population	% of Total
White	6,762	75.62%
Black	262	2.93%
Am. Indian/Alaska Nat.	12	0.13%
Asian	1,379	15.42%
Pacific Islander	5	0.06%
Other	196	2.19%
Hispanic/Latino	587	6.56%
Total Population	8,942	

The project area is primarily a business/institutional district, which also includes residential areas, as well as office and student housing facilities associated with Boston University (BU).

The Kenmore Square area is a thriving business district, which includes, the new Hotel Commonwealth and many small businesses on Beacon Street and Commonwealth Avenue. Minority-owned businesses in the area include the following:

Gnomon Copy
325 Huntington Avenue
Boston, MA 02115

Goss Associates
304 Newbury Street
Boston, MA 02115

Long Bay Management Co.
351 Massachusetts Avenue
Boston, MA 02115

Open The Door Inc.
374 Marlborough Street
Boston, MA 02115

Marsha Morris & Associates International
P . O. Box 15582
Boston, MA 02115

The BU/Kenmore Square employment figures total 9,400 jobs; in addition, there are several MBTA bus routes that serve with the Longwood Medical Area home of Brigham and Women’s, Beth Israel/Deaconess, and Children’s hospitals the Dana-Farber Cancer

Institute, Joslin Diabetes Center, and other medical facilities which collectively provide 27,200 jobs, the largest concentration of jobs in Boston outside the central business district.

Several Arterial. streets service Kenmore Square and the Longwood Medical Area: Brookline Avenue (23,000 average daily traffic), Commonwealth Avenue (20,000 ADT), and Beacon Street (19,000 ADT). Kenmore Station is the last underground stop on the outbound Green Line subway, from which three surface branches, Boston College/ Commonwealth Avenue (B Line), Cleveland Circle/Beacon Street (C Line), and Riverside (D Line) radiate toward terminal stations in Brookline and Newton. The station also serves Fenway Park, home of the World Champion Boston Red Sox.

ANTICIPATED IMPACTS

This project includes the total rehabilitation of Kenmore Station with the purpose of providing accessibility by constructing of elevators and escalators to the Green Line trolley platforms. Provision of this access will require selective demolition of walls and slabs and replacement of the existing brick-and-precast-concrete bus shelter. Also included is the construction of a new second egress, on expanded station lobby, and a new steel-and-glass bus canopy.

This construction will affect riders in three ways: (1) the center entrance and existing busway will be closed to enable demolition and construction to proceed, (2) the passenger platforms for Green Line trolley service will be shortened to allow elevator construction, and 3) the existing bus platform will be relocated to Beacon Street with replacement bus shelters to be provided on a widened sidewalk. Green Line trolley patrons will be subjected to some noise from construction, and MBTA bus patrons will be required to walk a longer distance to access the bus routes at the temporary Beacon Street platform. The surface improvements work on Commonwealth Avenue, Beacon Street, and Brookline Avenue will involve delays and detours for auto traffic traversing Kenmore Square.

MITIGATION PROPOSED

The MBTA is requiring the contractor to complete the major platform and mezzanine work between 9:00 AM and 5:00 AM, in order to impact the fewest riders. A new station entrance inside the Hotel Commonwealth was completed in July 2004 and this wider, covered stairway and elevator will allow access for more Green Line patrons. During the 2004 Boston Red Sox season, this widened stairway entrance efficiently handled the additional 10,000-15,000 riders traveling to Fenway Park.

To ensure the safety of Green Line riders at the shortened platforms a rubber grade crossing will be installed, and during times with heavy crowds; Green Line staff will provide safety protection between the inbound and outbound platforms. The MBTA and its consultants have prepared a Traffic Management Plan, which will require the contractor to complete a portion of the roadway paving and sidewalk work on nights and

weekends to minimize delays during morning and evening rush hours. The contractor will also be required to maintain access to the station and platforms during operating hours during all phases of the construction schedule.

ENVIRONMENTAL DOCUMENT REFERENCES

The Categorical Exclusion for the LRAP portion of the project was approved on June 12, 2003, and for the surface improvements on January 9th 2004.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Light Rail Accessibility Project, Copley Station Modernization

PROJECT DESCRIPTION

This project will make Copley Station ADA compliant by providing accessible fare collection, accessible communication, and access via elevators from the street level to both Green Line platforms. Additionally the accessibility/modernization improvements at Copley Station include the design of new raised platforms required for boarding the new Green Line low floor vehicles (LFVs);,and updated electrical and mechanical systems. This design also includes other station improvements such as new lighting. All of the design elements impact existing conditions at the surface level of Dartmouth Street and Boylston Street have been coordinated with the appropriate City of Boston departments and authorities.

AREA DESCRIPTION

The project is located in U.S. Census tract 107, located in the Copley Station area of the Back Bay neighborhood. According to the 2000 U.S. Census, the neighborhood tract has a population of 2,406. Population breakdown by percentage is 82% white, 5.4% Black, 11% Asian, .3% American Indian, .1% Pacific Islander, and 3% other.

The project area is primarily a commercial area; however, it also has established, older neighborhoods occupied by students, working class occupants, and generations of families. The neighborhood is also an upper-class-residential and strong-business-based location. There are several historic buildings including the Old South Church, Trinity Church, and the Boston Public Library and several hotels within walking distance of the station.

The Copley Station area is experiencing some business changes and constant retail changes occur along Boylston Street, Dartmouth Street, and Newbury Street.

Minority-owned businesses and organizations in the area, as confirmed by the State Office of Women and Minority Business Assistance, include:

Visitor Marketing Inc.
45 Newbury Street
Boston, MA 02116

Woman's Educational and Industrial Union
356 Boylston Street
Boston, MA 02116

Baker/Wohl Architects Inc.

2A Union Park Street
Boston, MA 02118

Copley Station is an intermodal station with five bus routes serving Forest Hills Station, Back Bay Station, City Point, and Jersey and Queensberry streets. Copley Station also serves four express buses from Burlington, Newton, and Watertown. An average of 8,500 commuters use the Green Line to or from Copley Station each weekday.

ANTICIPATED IMPACTS

The project is a neighborhood enhancement and has positive impact in leveraging private investment in mixed-use development. Temporary noise impacts associated with construction are anticipated and will be minimized as noted below.

Copley Station Green Line service will remain operational during construction. There will be weekend shutdowns during construction, during which shuttle-bus replacement service will be provided and will be coordinated with the City of Boston.

During construction of Copley Station, all construction activities are specified to be performed in such a way as to minimize, to the greatest extent feasible, any noise, water, or air-quality impacts. During construction, there may be temporary noise related to construction activity. However, heavy construction, such as demolition will be performed during a limited time-period so the community will not be adversely impacted. In addition, all diesel off-road equipment used in this project will be required to be retrofitted to reduce air and noise emissions.

MITIGATION PROPOSED

As noted above, service shutdowns needed to accommodate construction will be mitigated by bus shuttle replacement service. Advance notice of shutdowns will be provided through flyers, media, and community group notification.

There are no relocation measures necessary for this station modernization.

ENVIRONMENTAL DOCUMENT REFERENCES

On June 25, 2004, the MBTA filed a Categorical Exclusion (CE) for this project and on December 30, 2004, the MBTA received a letter from FTA issuing a Finding of No Significant Impact (FONSI) on the project.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Light Rail Accessibility Project, Arlington Station Modernization

PROJECT DESCRIPTION

This project will make Arlington Station ADA-compliant by providing accessible fare collection, accessible communications, and access via elevator from the street level to the mezzanine and from the mezzanine to both Green Line platforms. Additionally, the accessibility/modernization improvements at Arlington Station include the design of new raised platforms required for boarding the new Green Line low-floor vehicles (LFVs); and updated electrical and mechanical systems. This design also includes other station improvements such as new lighting. Surface improvements will be made at the corner of Arlington Street and Boylston Street that will make it accessible, improve pedestrian circulation, and upgrade the streetscape to comply with the Boylston Street master plan.

AREA DESCRIPTION

The project is located in U.S. Census tract 107, located in the Back Bay neighborhood. According to the 2000 U.S. Census, the neighborhood tract has a population of 4,908. Population breakdown by percentage is 92.3% White, 1.6% Black, 5.7% Asian, .3% American Indian, .1% Pacific Islander, and 1.7% other.

The project area is primarily a commercial area, but it also includes established, older neighborhoods occupied by students, working class occupants and generations of families. The neighborhood is also an upper-class-residential and strong-business-based location. There are several hotels within walking distance of the station.

The Arlington Station area is experiencing some business changes and constant retail changes along Boylston Street.

Minority-owned businesses and organizations in the area, as confirmed by the State Office of Women and Minority Business Assistance, include:

Visitor Marketing Inc.
45 Newbury Street
Boston, MA 02116

Woman's Educational and Industrial Union
356 Boylston Street
Boston, MA 02116

Baker/Wohl Architects Inc.
2A Union Park Street

Boston, MA 02118

Arlington Station has direct access to the Boston Public Garden and it provides commuter service to a large business area. An average of 7,600 commuters each weekday use the Green Line at Arlington Station.

ANTICIPATED IMPACTS

The project is a neighborhood enhancement and has positive impact in leveraging private investment in mixed-use development. Temporary noise impacts associated with construction are anticipated and will be minimized as noted below.

Arlington Station Green Line Service will remain operational during construction. There will be weekend shutdowns during construction, during which shuttle-bus replacement service will be provided and will be coordinated with the City of Boston.

During construction of the Arlington Station, all construction activities are specified to be performed in such a way as to minimize, to the greatest extent feasible, any noise, water, or air-quality impacts. During construction, there may be temporary noise related to construction activity. However, heavy construction, such as demolition, will be performed during a limited time period so the community will not be adversely impacted. In addition, all diesel off-road equipment used in this project will be required to be retrofitted to reduce air and noise emissions.

MITIGATION PROPOSED

As noted above, service shutdowns needed to accommodate construction will be mitigated by shuttle-bus replacement service. Advance notice of shutdowns will be provided through flyers, media, and community group notification.

There are some proposed changes to the location of the public pedestrian access along the northwest corner of the intersection of Arlington Street and Boylston Street during the first phase of construction. The MBTA has worked out a mitigation agreement with the Arlington Street Church so that the pedestrian access can be relocated onto the church property temporarily. The MBTA will restore the existing garden wall at the church to the original historic design and will build an accessible ramp to access the lower level of the church as part of the mitigation.

The MBTA is also replacing the sidewalk along Boylston Street with granite paving, as requested by the City of Boston, to the design for the Boylston Street master-plan streetscape improvements.

Environmental Document References

On November 25, 2003, the MBTA filed a Categorical Exclusion (CE) for this project and on May 14, 2004, the MBTA received a letter from FTA issuing a Finding of No Significant Impact (FONSI) on the project.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Fairmount Corridor Improvements, Phase I

PROJECT DESCRIPTION

The project involves infrastructure improvements to the Fairmount corridor. The proposed work includes upgrading two stations, Uphams Corner and Morton Street; minor repairs and the painting of four bridges (Dudley Street, Geneva Avenue, East Cottage Street, and Norfolk Street); two bridge replacements (Columbia Road and Quincy Street), and a new, interlocking and signal system.

The Uphams Corner and Morton Street stations will be upgraded to meet commuter rail and ADA standards, including full high-level platforms, steel canopies, waste bins, newspaper boxes, new lighting, LED informational message signs, train approach warnings, schedule cases, trash receptacles, equipment sheds, and landscaping.

The Norfolk Avenue, East Cottage Street, Dudley Street, and Geneva Avenue bridges will be repainted and will undergo some minor repairs. This work is expected to commence in the spring of 2005, with completion in August 2005. These bridges are currently in fair to poor condition. There are differing levels of erosion of the bridges that require minor repairs to bearings, erosion areas, and steel members along with deleading and repainting all four bridges.

The Columbia Road and Quincy Street Bridges will be in advanced state of deterioration and will be replaced. This bridge work is to be performed by a single-track operation to maintain services during the rehabilitation process. As a result, a new interlocking system will be installed to facilitate the single-track operation.

AREA DESCRIPTION

This project work scope is for a nine-mile corridor that serves several U.S. Census tracts in Roxbury, Dorchester, and Mattapan tracts 913, 912, and 914 (Uphams Corner), and tracts 1010.01 and 1010.02 (Morton Street Station). These neighborhoods have large minority populations, as noted in the race/ethnicity breakdown of the 2000 U.S. Census, shown in Tables 2-3 and 2-4.

The project runs through a densely populated corridor in the Boston neighborhoods of Roxbury, Dorchester, Mattapan, and Hyde Park. The Fairmount corridor includes a high population of minority, low-income, and transit-dependent residents. The project area is primarily residential, but also includes some neighborhood commercial districts. The Fairmount corridor also contains some dense, urban residential neighborhoods with population densities in excess of 20,000 residents per square mile. The areas along the Fairmount corridor are more densely populated than the Boston average of 13,500 residents per square mile, and well above the Massachusetts average of 600 residents per square mile.

TABLE 2-3
Census Tracts 912, 913, and 914: Uphams Corner

	Population	% of Total
White	1795	21.61%
Black	3209	38.63%
Am. Indian/Alaska Nat.	38	0.46%
Asian	338	4.07%
Pacific Islander	8	0.10%
Other	1937	23.32%
Hispanic/Latino	1877	22.60%
Total Population	8307	

TABLE 2-4
Census Tracts 1010.01 and 1010.02: Morton Street

	Population	% of Total
White	588	5.08%
Black	9761	84.31%
Am. Indian/Alaska Nat.	45	0.39%
Asian	99	0.86%
Pacific Islander	6	0.05%
Other	395	3.41%
Hispanic/Latino	909	7.85%
Total Population	11577	

ANTICIPATED IMPACTS

The Fairmount Corridor Improvement Project will create some very unique technical challenges, particularly during construction. Most challenging will be the need to complete all work without disruption to the active rail service. In addition to designing the project elements in a way that allows commuter-rail and freight services to operate, the design must provide a means of safely and efficiently constructing the elements adjacent to live train traffic.

There will be a need to have some roadway closures during removal and erection of bridge girders. These roadway closures will usually be done at nighttime, and the MBTA will obtain the necessary approvals from the City of Boston. All detours will be coordinated with the Boston Transportation Department (BTD).

The Fairmount Line project may involve temporary or permanent changes to parking regulations. Temporary changes for accommodating construction activity will be addressed as part of the Boston Public Works Department (BPWD) Street Occupancy Permit. BPWD will require that these changes are resolved through discussions with BTM and be part of a Traffic Management Plan.

The MBTA will provide detailed plans for each location to illustrate activities during each construction activity. The plans will describe the location of temporary construction detours, laydown areas, and police details. Consideration will be given to the need for off-peak construction in order to minimize impacts on peak-morning and peak-afternoon traffic flows, particularly on major thoroughfares like Columbia Road and Massachusetts Avenue. Close coordination with all appropriate city agencies will take place. The MBTA will also provide updates to the neighborhood and businesses in the Fairmount corridor. Public meetings took place in the fall of 2004 and more will take place, as necessary, to provide construction progress updates.

The painting and repair of the four bridges at Norfolk Avenue, Geneva Avenue, East Cottage Street, and Dudley Street will improve the areas surrounding the Roxbury/Dorchester communities. The newly painted bridges will also be de-leaded and have minor structural repairs, which will extend their useful lives. Moreover, upgrading the bridges will significantly improve the aesthetics of the areas where they are located and bring four bridges to a "State of Good Repair" as a vital component of the plan to upgrade the existing infrastructure of the Fairmount Line. All work will be done within federal and state guidelines.

Nearly all the bridges along the Fairmount Line are over 100 years old and have reached, or are nearing, the end of their useful life. The MBTA has recently performed inspections and load ratings on the bridges to identify those which are in need of repair or replacement. As indicated in this report, the Columbia Road and Quincy Street bridges need to be replaced as soon as possible. Repairs to most of the remaining bridges on the line are necessary, but not critical, at this time. It is advisable to perform structural repairs and painting on four of the neighborhood bridges (Norfolk Avenue, East Cottage Street, Dudley Street, and Geneva Avenue) in order to improve their appearance and extend their useful lives. Repairs to the remaining railroad bridges along the line should also be programmed for future phases of construction.

Based upon the preliminary design of these bridge replacements, it was recognized that improvements to the railroad signal system would be required to allow the single-track and bidirectional operations necessary to construct these two bridges while maintaining rail service. As a result, it was determined that upgrades to the signal system and a new universal interlocking midway along the corridor would be required to reduce single-track operating length on the line and to facilitate construction of the bridges. Construction is expected to commence in the fall of 2006, with completion in the summer of 2008.

Uphams Corner Station construction is expected to begin in April 2005, with an com-

pletion date of July 2006. The station will remain open for service during the construction period.

Morton Street Station construction is expected to begin in the summer of 2005, with expected completion in the fall of 2006. It is anticipated that the station will remain open during the construction period.

MITIGATION PROPOSED

The infrastructure improvements on the Fairmont Line, include work on the bridges, include a Traffic Management Plan, which the MBTA's contractor is responsible for adhering to for the project duration. In particular, some of the associated traffic management guidelines include: limited hours of construction, the maintenance of safe work areas, and provision of easy access for pedestrians and vehicular traffic.

The Uphams Corner and Morton Street stations have proposed upgrades that include sidewalk improvements in the immediate vicinity of the stations, with particular attention paid to creating an accessible route between the inbound and outbound platforms, as well as a physical link to the adjacent neighborhoods and business districts. The proposed upgrades also include a parking lot with adequate accessible parking and a dedicated passenger drop-off area. The parking lot upgrades will include lighting, signage, payboxes, drainage, and curbing. As with other stations in residential communities, passengers will benefit from improvements such as bicycle racks, bus shelters, appropriate lighting that does not emit glare into neighboring homes, and path lighting that provides additional security and comfort.

Renovations of the two stations will result in increased ridership by improving station appearance, visibility, and safety. Some riders will be diverted from the overcrowded MBTA buses within the corridor to the commuter rail system, where the commute into Boston would be similar to that experienced on a rapid transit line.

Mitigation to provide service during the closure of Upham's Corner Station involves community outreach (seat drops and neighborhood meetings) and fare structure revision (subway passes valid on bus Route 17). This mitigation will maintain transit options for customers who will be able to connect to the Silver Line and/or Red Line for downtown locations and connect to bus Routes 21 and/or 32 to Hyde Park or Morton Street destinations.

The investment in the Fairmount corridor infrastructure improvements will substantially upgrade transit service to the city of Boston's most transit-dependent neighborhoods. By adding new stations that are convenient to local communities, replacing aging bridges, upgrading an unreliable signal system, and making stations accessible for people with disabilities, the MBTA will transform one of its most underutilized assets with improved service that will provide immediate benefits to residents along the corridor.

Uphams Corner Station will require a construction easement to access the construction zone so that there will be no impacts to trucks entering the loading-dock area.

Morton Street Station will require a permanent easement for parking for the drop-off and pick up and approximately twenty-five (25) parking spaces.

ENVIRONMENTAL DOCUMENT REFERENCES

A categorical Exclusion (CE) on the Fairmount corridor improvements was filed with FTA on June 8, 2004, and was approved by FTA on July 15, 2004. The CE includes a description of the environmental justice issues.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Blue Line Station Modernization, State Street Station Rehabilitation, Boston, Mass.

PROJECT DESCRIPTION

The purpose of this project is to make the station compliant with the Americans with Disabilities Act of 1990 (ADA). In addition, the station platforms must be extended to accommodate six-car trains. Proposed work includes accessibility (ADA) upgrades to the station site, lobby area, and platforms.

The project consists of selective demolition throughout the Blue Line's State Station to extend the platforms; and construction of two new, fully-accessible entrances along each side of State Street, with new stairs, elevators, station support spaces, and underground access. In addition, there will be new surface finishes on the walls, floors, ceilings, and columns, as well as new light fixtures and new electrical and communications systems throughout the station.

AREA DESCRIPTION

The project is located in U.S. Census tract 303, in downtown Boston. According to the 2000 U.S. Census, the tract has a population of 4,074. Population breakdown by minority status is 3,624 White, 215 Black or African American alone, 10 American Indian and Alaska Native alone, 177 Asian alone, 12 some other race alone.

The project area is primarily a business area.

ANTICIPATED IMPACTS

There is no identifiable minority business district in the immediate vicinity; therefore, there will be no impacts on minority-owned businesses during and after construction.

Environmental impacts to area businesses due to noise, dust, and dewatering will be very limited because of the restrictions set by the MBTA contract, the City of Boston, and Massachusetts Department of Environmental Management.

Anticipated impacts to local businesses include the following:

- Taxi-cab stands will be relocated.
- Several businesses will be either relocated or closed during the renovations.
- Commercial deliveries will be relocated.
- Pedestrian walkways will remain open, but will shift during construction.
- Traffic flows may be affected during daytime and nighttime in work zones.
- Public transportation will only be impacted during the six scheduled weekend diversions.

MITIGATION PROPOSED

During the design phase, it was necessary to negotiate agreements with abutters at 53 and 60 State Street due to new headhouse locations in each of their buildings. At 60 State Street, an agreement has been reached to reconfigure space at the Bank of America (formerly FleetBank) for the purpose of creating a new entrance in their lobby. The MBTA has agreed to pay for the reconfiguration and for some loss of revenues for the following retailers at 60 State Street, all of which are under agreement with the property owner, Equity Office:

- Bank of America – Construction 1.3 million dollars
- Taste of the Town Restaurant – Loss of revenue, 1 month
- Sarni Cleaners
- Federal Express
- Utility relocations

At 53 State Street, the MBTA has agreed to the following mitigation:

- Relocate the handicap ramp.
- Reconfigure Cosi Restaurant, compensate for loss of revenue.
- Restore plaza area to its original status.

The MBTA Project Office has been meeting with both abutters for the past two years to explain the project. They prepared brochures showing traffic patterns and the various stages of construction activities for 53, 60, and 75 State Street to distribute to their tenants to keep them informed. The MBTA Project Office will hold tenant meetings for both abutters on a continual basis for updates on construction, which will include the Traffic Management Plans.

ENVIRONMENTAL DOCUMENT REFERENCES

A Categorical Exclusion (CE) was filed in August 1999 and was approved by FTA on September 10, 1999. A later change to the siting of the headhouses, resulting in fewer impacts, was reviewed and approved by the State Historical Protection Officer (SHPO) on June 15, 2004.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Blue Line Modernization, Maverick Station

PROJECT DESCRIPTION

This project will make Maverick Station accessible by providing accessible fare collection, accessible communications, and access via elevator from Maverick Square Plaza down to the Blue Line platforms, located below street level. Additionally, the accessibility/modernization improvements at Maverick Station include the design of a new accessible station headhouse, updated electrical and mechanical systems, new accessibility-compliant finishes, and a new unit substation to replace the existing rundown equipment. This design also includes other station improvements such as new lighting, P.A. and LED systems, and modifications to Maverick Square parking, pedestrian, and vehicular circulation.

The Lewis Mall headhouse is an exit-only design for the base contract. In the construction procurement, there will be two bid alternates for the Lewis Mall headhouse. The first alternate is to install a new elevator at the Lewis Mall headhouse, making it an entrance/exit location. The second alternate is for the installation of two escalators in the Lewis Mall headhouse.

AREA DESCRIPTION

The project is located in U.S. Census tract 1008, located in East Boston's most populous neighborhood. According to the 2000 U.S. Census, the neighborhood tract has a population of 2,525. Population breakdown by percentage is 76% White, 2.5% Black, 3% Asian, 1% American Indian, .5% Pacific Islander, 24% other.

The project area is residential/commercial with established neighborhoods defined by parishes and occupied by generations of families. The neighborhood is diverse, with large populations of immigrants from Haiti, Brazil, Italy, and Cambodia.

The Maverick Square area is also experiencing some growth in large mixed-use development along the waterfront, such as Pier One, Clippership Wharf, and Commercial District along Dorchester Avenue.

Minority-owned businesses and organizations in the area, as confirmed by the State Office of Women and Minority Business Assistance, include:

Maza Construction Systems International Inc.
P. O. Box 28-5350
East Boston, MA 02128

Rehabilitation and Health, Inc.
52 White Street
East Boston, MA 02128

Rev-Lyn Contracting Company
1265 Saratoga Street
East Boston, MA 02128

Minority-owned businesses and organizations in the area (names provided by Main Streets of East Boston) include:

LaSultana Bakery
40 Maverick Square
East Boston, MA 02128

Uregente Express, Inc.
35 Maverick Square
East Boston, MA 02128

Louis Ciampa Digital Photography
20 Maverick Square
East Boston, MA 02128

Bella's Market
75 Maverick Square
East Boston, MA 02128

Tony's Realty
37 Maverick Square
East Boston, MA 02128

Rosticeria Cancun
37 Maverick Square
East Boston, MA 02128

Frankies 1-Hour Cleaners
69-71 Maverick Square
East Boston, MA 02128

Taco-Mex Restaurant
65-67 Maverick Square
East Boston, MA 02128

Hong Kong Harbor Restaurant
57 Maverick Square
East Boston, MA 02128

Las Americas Travel
9 Maverick Square
East Boston, MA 02128

Brazil Brazil
31 Maverick Square
East Boston, MA 02128

Jefferson Barcelos Tax & Financial Services
46 Maverick Square
East Boston, MA 02128

Maverick Station is an intermodal station with five bus routes serving Wonderland Station, Orient Heights Station, Wood Island Station, and neighborhoods in East Boston, Chelsea, and Revere. An average of 10,000 boardings each weekday occur on the Blue Line at Maverick Square.

ANTICIPATED IMPACTS

The project is a neighborhood enhancement because it includes updating an older station and providing accessibility to the station as well as to Maverick Square. The redesign of Maverick Square has and will continue to have a substantial, positive impact by increasing private investment of mixed-use development. Temporary noise impacts associated with construction are anticipated and will be minimized as noted below.

Maverick Station will remain operational during construction, with continued Blue Line and bus service. There will be weekend shutdowns during construction, during which shuttle-bus replacement service will be provided.

During the construction of Maverick Station, all construction activities are specified to be performed in such a way as to minimize, to the greatest extent feasible, any noise, water, or air-quality impacts. During construction there may be temporary noise related to construction activity. However, heavy construction, such as demolition will be performed during a limited time period so the community will not be adversely impacted. In addition, all diesel off-road equipment used in this project will be required to be retrofitted to reduce air and noise emissions.

MITIGATION PROPOSED

As noted above, service shutdowns needed to accommodate construction will be mitigated by shuttle-bus replacement service. Advance notice of shutdowns will be provided through flyers, media, and community-group meetings and notification.

During the second phase of construction, which is primarily in Maverick Square, the entrance to the station will be moved to the newly constructed headhouse in the Lewis Mall area and buses will be moved from Maverick Square to Sumner Street.

At the completion of this transit project, the pedestrian plaza on the roof that will be used by the contractor for a staging area will be landscaped. The new Lewis Mall headhouse, located closer to the waterfront, will reunite the waterfront and the MBTA station, while providing the Boston Housing Authority facility direct access to the station. This investment in a new Maverick Station will revitalize the diverse residential and commercial neighborhoods surrounding Maverick Station.

There are no relocation measures necessary for this station modernization.

During the construction phase of the Maverick Station project, all construction activities are specified to be performed in such a way as to minimize to the greatest extent feasible, any noise, water, or air-quality impacts. During the construction phase, there may be temporary noise related to construction activity. However, heavy construction, such as demolition, will be performed during a limited time period so the community will not be adversely impacted. In addition, all diesel off-road equipment used in this project will be required to be retrofitted to reduce air and noise emissions.

ENVIRONMENTAL DOCUMENT REFERENCES

On June 23, 2003, the MBTA filed a Categorical Exclusion (CE) for this project and on October 29, 2003, the MBTA received a letter from FTA approving the CE.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Ashmont Station Modernization

PROJECT DESCRIPTION

The purpose of this project is to make the station compliant with the Americans with Disabilities Act of 1990 (ADA). Proposed work consists of complete reconstruction of the station, including a new Mattapan trolley viaduct and platform. The existing station headhouse and viaduct will be demolished, with only the existing Red Line tracks and portions of platforms remaining. The new station will consist of a roof enclosure that provides two new lobbies, with fare lines at either end of the station. The new bus turnaround is to be raised to allow access to the new station lobbies. Accessibility features will include tactile platform edges, LED signage, new security lighting, CCTV, and new automated-fare equipment. Three elevators and two escalators will be installed. In addition, a new police kiosk will be furnished for added security. Station design will be integrated with a transit-oriented-development parcel that will include mixed-use retail and new housing for the community, to be funded by a private developer.

The proposed design restores the Peabody Square-facing entrance with an urban-design solution integrating all three transit modes into a customer-friendly, accessible, well-lit, and secure station.

AREA DESCRIPTION

The project is located in U.S. Census tract 1008, located in the southern part of Dorchester, Boston's most densely populated neighborhood. According to the 2000 U.S. Census, the neighborhood tract has a population of 5,512. Population breakdown by minority status is 3,522 White, 1,146 Black, 627 Asian, 487 Latino.

The project area is primarily a residential area, with established neighborhoods defined by parishes and occupied by generations of families. The neighborhood is diverse, with large populations of immigrants from Haiti, Vietnam, Laos, and Cambodia.

The Ashmont area is also experiencing some growth in commercial districts, such as Peabody Square and the Ashmont Commercial District, both located on Dorchester Avenue. This commercial growth is evident with employment totals of 1,700 jobs in the Ashmont area, approximately 12% of all jobs in Dorchester proper.

Minority-owned businesses and organizations in the area, as confirmed by the State Office of Women and Minority Business Assistance, include:

Laing Enterprises, Inc.
493 Geneva Avenue
Dorchester, MA 02122

Massachusetts Local Telephone Company, Inc.
1953 Dorchester Avenue
Dorchester, MA 02124

New Looks Paint Service
1446 Dorchester Avenue, Suite 302
Dorchester, MA 02122

Preston Staffing, Inc.
771 Adams Street
Dorchester, MA 02122

Vietnamese American Civic Association
1452 Dorchester Avenue, 3rd Floor
Dorchester, MA 02122

Ashmont is an intermodal terminus station with trolley service to Mattapan and eight bus routes serving Fields Corner, Ruggles, Forest Hills, Andrew and Quincy stations. There is also a Brockton Area Transit Authority (BAT) bus route that services Ashmont Station. An average of 9,800 boardings occur each weekday at the Red Line station at Ashmont.

ANTICIPATED IMPACTS

The project is a neighborhood enhancement and has a positive impact in leveraging private investment in mixed-use, transit-oriented development. Temporary noise impacts associated with construction are anticipated and will be minimized as noted below.

Ashmont Station will remain operational during the 36 months of construction, while only the trolley viaduct construction will necessitate busing in place of the trolley service for 12 months during the total replacement of the viaduct structure. The Red Line, as well as all bus routes, will remain in service throughout construction. There will be weekend shutdowns only during construction, during which shuttle-bus replacement service will be provided.

MITIGATION PROPOSED

As noted above, service shutdowns needed to accommodate construction will be mitigated by shuttle-bus replacement service. Advance notice of shutdowns will be provided through flyers, media, and community-group notification.

In addition, the station improvement project has opened up opportunities for promoting “smart growth” land use policies in urban-neighborhood revitalization. There will be extensive coordination with the planned transit-oriented development (TOD) project associated with this project in order to minimize the disruption to the community. The project incorporated a developmental parcel; it will be privately financed and will include mixed-use retail on the ground floor with multi-income housing units on the upper floors. This TOD will bring new investment and vitality to the neighborhood.

The modernization and TOD project has already spawned improvements to the neighborhood, such as the recent City of Boston \$150,000 grant to St. Mark’s Main Street Civic Association for a proposed improvement to Dorchester Avenue at Peabody Square. The transit project will include an improved pedestrian plaza on the tunnel cap where there is currently no entrance. This new entry and pedestrian access will reunite Dorchester Avenue, Peabody Square, and the MBTA station, while providing the neighborhood and the adjacent businesses direct access to transit. This investment in a new Ashmont Station will revitalize the diverse residential and commercial neighborhoods surrounding Ashmont Station.

There are no relocation measures necessary for this station modernization.

During construction of Ashmont Station, all construction activities are specified to be performed in such a way as to minimize, to the greatest extent feasible, any noise, water, or air-quality impacts. During the construction phase there may be temporary noise related to construction activity. However, heavy construction, such as demolition, will be performed during a limited time period so that the community will not be adversely impacted. In addition, all diesel off-road equipment used in this project will be required to be retrofitted to reduce air and noise emissions.

After extensive analysis of the neighborhood and business community surrounding the Ashmont Station, it has been determined that all associated postconstruction noise impact will be properly mitigated due to the fact that the existing busway at Ashmont Station will be replaced by one on the Dorchester Avenue side of the station. This will alleviate any negative noise impacts to the area residents and businesses. Noise levels will be consistent with what is required under FTA Noise Standards and Guidelines. This project will allow for safer, more reliable access to public transportation by the community.

ENVIRONMENTAL DOCUMENT REFERENCES

On August 9, 2004, the MBTA filed a Categorical Exclusion (CE) for this project and on August 24, 2004, FTA approved the CE.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Red Line Bridge Construction Program

PROJECT DESCRIPTION

The Red Line bridge program includes two project components, the Redfield Street Bridge and the Shawmut Junction Bridge.

The Redfield Street Bridge, originally built in 1910, is a two-span, riveted steel, through plate girder structure. The bridge carries Redfield Street over Franklin Street, carries the MBTA's Red Line rapid transit tracks, and travels over the Old Colony Railroad right-of-way. The purpose of the work is to replace the deck structure due to its deteriorated condition, and to perform some roadway approach work.

The Shawmut Junction Bridge carries the Ashmont–Mattapan trolley line over an abandoned rail freight right-of-way. This bridge was built in 1929 and is a single-span, reinforced-concrete, box structure. The work involved will consist of concrete repairs to the existing structure due to its deteriorated condition.

AREA DESCRIPTION

The area surrounding the Redfield Street Bridge is predominantly residential except for a four-story office building abutting the rail right-of-way at 50 Redfield Street. The building has 12 commercial businesses, none of which are minority-owned, according to an internet survey conducted by MBTA staff. The project site is located in block group 1 of census tract 1006.02. This block group area has a population of 625 people, according to the 2000 U.S. Census. The racial mix is 84% White, 8% Black, 6% Asian, and 5% Hispanic.

The Shawmut Junction Bridge is located at the rear of the Cedar Grove Cemetery property off Adams Street in Dorchester, and between Cedar Grove and Butler MBTA stations in an area of open space by the cemetery and the Neponset River Reservation, distant from developed residential/commercial properties.

ANTICIPATED IMPACTS

Construction of the Redfield Street Bridge is ongoing, with an expected completion date of March 2005. During construction there was a complete closure of Redfield Street for a duration of eight weeks. During the street closure, a pedestrian passage was in place to provide free movement to pedestrians. During all detours that were required for this work, the MBTA and its contractor coordinated with the appropriate agencies in the City of Boston. Additionally, the Red Line extension was shut down for a total of eight weekends, with busing provided. There are no anticipated negative impacts due to this undertaking. The proposed project provides a safer public transportation system for everyone in the community.

The Shawmut Junction Bridge project will have no negative impacts to the community as stated in the MBTA's environmental review documentation, which was submitted in 2003. The project is ongoing and is expected to be completed in April 2005.

There were some temporary easements required for construction activities and two permanent easements, totaling approximately 36 square feet: these were necessary to allow the footings for the Redfield Bridge to be put in place.

There were no relocations or land takings associated with the Shawmut Junction Bridge project.

MITIGATION PROPOSED

As noted above, during the street closure the Redfield Street Bridge project, a pedestrian pathway was built to provide free movement to pedestrians. Also, provision was made to ensure that a fire engine with four fire officials was on duty to provide 24-hour a-day temporary emergency fire-safety services to the community. Community meetings were held monthly to discuss construction activities and noise issues during demolition. The reconstruction of these two bridges is part of the MBTA's current effort to upgrade older bridges that present potential safety concerns.

ENVIRONMENTAL REFERENCES

A Categorical Exclusion (CE) for these two bridges was filed on December 19, 2002, and was approved by FTA on April 9, 2003. The assessment of impacts to low-income and/or minority communities may be found on page 2 of the CE.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

The Bay Street Bridge, Taunton, Mass.

PROJECT DESCRIPTION

The project is part of the MBTA's bridge rehabilitation program. The Bay Street Bridge project consisted of the demolition of the existing bridge with partial removal of the abutment walls and pier, backfilling, and compacting the area under the existing bridge with the unused rail bed. Since completion of this project, the bridge has been retired from the MBTA's bridge inventory. In addition, water and gas lines were removed and reinstalled, and a new roadway section was constructed to replace the existing bridge.

AREA DESCRIPTION

The Bay Street Bridge is located in U.S. Census tract 6131, Bristol County, in Taunton, Massachusetts. The area is a predominantly residential area with the only commercial establishment in the area being Benjamin's Restaurant at 698 Bay Street (nonminority owned). According to the 2000 Census, the project site tract has 6,722 people, for whom the racial breakdown is 95.4% White, 1.4% Black, and 1.4% Hispanic.

ANTICIPATED IMPACTS

During the construction of the Bay Street Bridge, the bridge was closed to vehicular traffic for four weeks. Detour routes were provided. There were no negative environmental impacts to the community. There are no traffic impacts now that the project is completed.

MITIGATION PROPOSED

The Bay Street Bridge work was completed in August 2004 and the bridge is now a new, permanent roadway. During the project, the MBTA's contractor constructed a new waterline for the city of Taunton in the area surrounding the bridge.

No property relocation or land taking was required for this project.

ENVIRONMENTAL REFERENCES

A Categorical Exclusion (CE) for this project was filed on April 28, 2003, and was approved by FTA on July 18, 2003. The assessment of impacts to low-income and/or communities of color can be found on page 2 of the CE.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Main Street Bridge, Concord, Mass.

PROJECT DESCRIPTION

This project entails reconstruction and repair of the bridge that carries the Fitchburg Commuter Rail Line over Route 62 in Concord, Mass.

Current plans include temporary shoring up of the bridge, with future plans for complete replacement of the superstructure. Replacement is planned and programmed for Fiscal Years 2006–2007. Temporary shoring was completed in August 2003 and will provide the necessary support for the next two to three years.

AREA DESCRIPTION

Main Street Bridge is located in the suburban community of Concord in Middlesex County, Massachusetts within Block Group 2 of Census Tract 3611. This block group has a population of 1,344 people. Racial breakdown is 95% white and 3.5% Asian. The Hispanic population is 1.5% of the block group residents, according to the 2000 U.S. Census. Land uses in the area surrounding the bridge project are residential and open space adjoining the Sudbury River.

ANTICIPATED IMPACTS

No impacts on minority populations are anticipated. This will be verified as the project advances through the design and permitting phases.

MITIGATION PROPOSED

Should specific mitigation measures be necessary, they will be defined as the project advances further through the design/engineering process.

ENVIRONMENTAL DOCUMENT REFERENCES

This project is still in early design phase and is not yet ready to begin the environmental process. A Categorical Exclusion (CE) will most likely be filed for this project.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Ruggles Busway

PROJECT DESCRIPTION

The upper-level busway at Ruggles Station has deteriorated to a point that bus service has been rerouted to the lower level because of safety concerns until substation repairs are undertaken. This project involves the complete removal of the top layer of concrete from the deck of the existing busway viaduct and replacement with new expansion-joint material to prevent water leakage under the structure.

AREA DESCRIPTION

The area surrounding the Ruggles busway is located in the Roxbury section of Boston in U.S. Census tract 805, block group 1, which has a population of 818, a high percentage of whom are low-income or minority. Racial breakdown, according to the 2000 Census, is 12% White, 68% Black, 1% Asian, and 25% Hispanic. The Ruggles busway is part of the Ruggles Orange Line station, a major intermodal facility that provides bus rapid transit and commuter rail service for the Ruggles area, including Northeastern University, Wentworth Institute, and other educational and cultural institutions.

ANTICIPATED IMPACTS

The Ruggles Station busway construction contract was awarded to JF White Contracting Company in November 2004, with construction expected to commence in the early spring of 2005. The construction is anticipated to last one year.

There will be no traffic impacts due to this project. The Ruggles busway viaduct is currently closed, and all buses are boarding of the lower level of the station. There will be no additional traffic generated due to this work. There are no other impacts to any businesses or the community as a result of this project.

No property relocations or takings are necessary for this project.

Residential properties will not be impacted by the construction work as properties in the immediate vicinity are the transit facility, rail right-of-way, and the Northeastern University campus.

MITIGATION PROPOSED

The construction of the viaduct will provide protection of classrooms at Northeastern University. The MBTA has worked with Northeastern University and STRIVE, a youth program a computer learning center, to address any construction impacts. Construction windows will be in place to provide for construction that may have impacts on classroom sessions. All construction activities are specified to be performed in such a way as not to cause any noise, air, or water pollution. The construction that may have poten-

tial for noise or other impacts will be performed at night or on weekends in order not to affect Northeastern University or STRIVE activities. Also, both organizations have agreed to relocate any classroom activities if necessary.

ENVIRONMENTAL DOCUMENT REFERENCES

A Categorical Exclusion (CE) for Ruggles Station was approved on June 18, 2004. The assessment of impacts to low-income and/or minority communities can be found on page 2 of the CE.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Blue Line Signal Upgrade

PROJECT DESCRIPTION

This project involves the study and upgrade of the signal system along the Blue Line to accommodate six-car trains. The Blue Line signal system comprises a single direction automatic-block signal system that has been in service for approximately 14 years. Phase I will encompass all detailed design specifications that will include the redesign of all existing signal locations along the main line to ensure adequate safe braking distances while minimizing the impact on headways, turnback, and runtimes. The redesign and reconfiguration of the signalized portion of the Orient Heights yard is also required for staging trains going in and out of revenue service. This will require the design of a new signal system that includes a fully functional interlocking at Wonderland, Orient Heights, and Government Center stations. These interlockings are used to coordinate switches and signals to prevent conflicting train moves. Phase II consists of providing-construction phase services for all aspects of the construction of the signal project.

Construction is expected to begin on the Blue Line signal project in the fall of 2005.

AREA DESCRIPTION

The project is planned for the urban central subway system extending to Wonderland Station in Revere. The Blue Line meets the Title VI definition of “minority service line,” since more than 33% of the stations serve minority neighborhoods.

ANTICIPATED IMPACTS

The project involves improvements contained within the existing tunnel system and existing right-of-way; as such, no impacts are anticipated to any communities. During the construction phase of the Blue Line Signal, project all construction activities are specified to be performed in such a way as to minimize, to the greatest extent possible, any noise, water, or air-quality impacts.

The Signal Department is working with the Blue Line Operations Department on the construction phasing of this project. It is the MBTA’s desire to provide service during the entire construction of this project. The MBTA is planning on providing service through the duration of the construction phase with minimal service disruptions. In the case of increasing the storage track at Wonderland Station, the MBTA has met with City of Revere officials to inform them of this effort. The work at Wonderland will still allow for single-track operations in that area. The MBTA and the community have addressed all concerns on this issue.

MITIGATION PROPOSED

This project provides a faster, safer, more reliable service and potentially more service to the communities along the corridor. These communities will benefit from these improvements. This proposed project will provide a new state-of-the-art signal system that will lead to improved and more efficient customer service on the Blue Line, as well as reducing headway and decreasing system failures.

There are no land takings or relocation associated with this project.

ENVIRONMENTAL DOCUMENT REFERENCES

Since this project provides upgrades to existing structures along the right-of-way, no environmental documents needed to be filed.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Charles/MGH Red Line Station Accessibility and Modernization

PROJECT DESCRIPTION

The MBTA proposes to make the Charles/MGH Red Line station comply with the Americans with Disabilities Act of 1990 (ADA), along with the complexities of accomplishing safe pedestrian, barrier-free access to the station and to each platform. The project includes the modernization of the 67-year-old station so it will be customer-friendly, will operate optimally, and will portray an appropriate image as a gateway to Cambridge and Boston and will accommodate future development at Massachusetts General Hospital (MGH).

The project involves the demolition of the existing head house, construction of a new headhouse and transition platforms; rehabilitation of the existing platforms; relocation and construction of utilities and roadways; landscaping and surface improvements; construction of permanent noise walls; structural steel repairs to the existing viaduct; and related traction power, signal, communications, and track construction work. In addition, there will be deck reconstruction at existing viaduct spans 5 and 6.

Accessibility features will include tactile platform edges, LED signage, new security lighting, CCTV, and new automated-fare equipment. Two elevators and one escalator will be installed.

AREA DESCRIPTION

The project area includes a busy traffic intersection with ramps off and onto major roadways, such as Storrow Drive (eastbound and westbound), and city streets. The project area is surrounded by a residential area with established neighborhoods, two major hospitals, and small-to medium-sized businesses. The station is an entry point for commuters to neighboring City of Cambridge, with continuation of rail lines over the Longfellow Bridge.

The project site is in the area of U.S. Census tracts 202 and 203, which have a combined population of 9,516, of whom 23% are minority. Population breakdown is 77% White (nonHispanic), 8% Black, 9% Asian, 2% “mixed”, and 4% Latino.

ANTICIPATED IMPACTS

A quantitative assessment has been conducted to determine potential impacts on surrounding disadvantaged populations, including businesses and households. In general, according to U.S. Census Bureau information, median income levels in surrounding neighborhoods are well above the U.S. Housing and Urban Development poverty level standards. The adjacent neighborhoods of Beacon Hill, to the south, and Charles River Park, to the north, are populated with families, young singles, and empty nesters, with some of the highest incomes in Boston. Forty-two percent are employed as executives or

professionals. Approximately 70% of area residents have completed college, graduate school, or professional school. The mean family income is \$132,000 (according to the 1990 census).

The proposed project will not substantially impact surrounding households or businesses. Of specific concern for this project are issues associated with impacts to historic properties. It is anticipated that no specific businesses or households will be substantially impacted by construction or operation of the project. Therefore no significant or disproportionate impact would be experienced by disadvantaged populations (businesses or households). All construction and operation activities will occur in accordance with appropriate regulations and practices designed to safeguard all patrons, businesses, residents, and system users in and around the station.

Further, it is anticipated that by improving transit and transportation services at the station, disadvantaged populations would benefit from improved access to area resources, for example MGH, Massachusetts Eye and Ear Infirmary (MEEI), recreational facilities, and cultural institutions.

The Charles/MGH Red Line station will remain operational during the 36 months of construction. There will be weekend shutdowns only when work is taking place shuttle-bus replacement service will be provided.

MITIGATION PROPOSED

As noted above, service shutdowns needed to accommodate construction will be mitigated by shuttle-bus replacement service. Advance notice of shutdowns will be provided through flyers, media, and community-group notification.

There will be extensive coordination with neighborhood community groups, area hospital management and all governmental agencies to eliminate disruption to the community, traffic patterns around Charles Circle, and regularly scheduled recreational events along the Charles River and Esplanade.

There are no relocation measures necessary for this station modernization.

During construction of the Charles/MGH Red Line station, all construction activities are specified to be performed in such a way as to minimize, to the greatest extent feasible, any noise, water, or air-quality impacts. During the construction phase there may be temporary noise related to construction activity. However, heavy construction, such as demolition, will be performed during a limited time period so that the community will not be adversely impacted.

ENVIRONMENTAL DOCUMENT REFERENCES

In February 2002, the MBTA filed a draft Environmental Assessment for this project. A Finding of No Significant Impact (FONSI) for this project was approved by FTA on March 21, 2003.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Arborway CNG Bus Maintenance and Storage Facility

PROJECT DESCRIPTION

The proposed project will redevelop the existing MBTA Arborway Yard facility located next to the existing MBTA administration building at 500 Arborway. A new bus storage and repair facility is proposed and will include storage and maintenance space for 118 compressed natural gas (CNG) buses. The service components of the facility will include: CNG fueling equipment, bus washing operations, service bays, and shop facilities. Also included will be support areas for MBTA operations, drivers, and maintenance staff.

Off-site alternatives considered included renovating the existing MBTA bus storage and maintenance facility near Bartlett Street. This site is approximately 0.5 miles north of the MBTA's Forest Hills Station, located at the northeast corner of the Washington Street/Arborway intersection. The station is the termination point of the Orange Line rapid transit and the focal point for many bus feeder routes. Upon initiation or termination of these bus routes, buses travel along Washington Street to and from the Bartlett Street facility, producing a considerable number of empty bus trips on this section of Washington Street. Relocation of the bus facility closer to Forest Hills Station will decrease the total traffic volume and the number of nonrevenue bus trips on Washington Street.

On-site alternatives considered during development of the proposed project included locating the proposed facility on Washington Street. This alternative originally consisted of a facility to accommodate 184 buses with access from and egress to Washington Street. After extensive review and input by the community and the City of Boston, the proposed project is a downsized program and is the result of an agreement between the MBTA, the City of Boston, and the Community Planning Committee for the Arborway Yard (CPCAY).

The on-site mitigation program provides significant allowance for enhanced parkland. An eight-acre parcel of the site will be developed as parkland that will connect Forest Hills and Washington Streets for access by the public. This parkland will be designated the Emerald Space Connector and will be turned over to the City of Boston upon completion of the project.

AREA DESCRIPTION

The project is located in U.S. Census tract 1202, which is located in Jamaica Plain. According to the 2000 U.S. Census, the neighborhood tract has a population of 3,423. Population breakdown by minority status is 1,899 white, 902 Latino, 771 Black, and 97 Asian. The percentage of total minority population is 53%.

The property is owned by the MBTA and has been in use for transportation-related purposes since the early part of the 20th century, dating back to March 1, 1924, when the Arborway Transfer Station first opened. The land is zoned as an Industrial Development Area (IDA), according to the Boston Redevelopment Authority (BRA), which has also played an active role in the community process as the representative for the City of Boston. Although the MBTA is exempt from such zoning restrictions, the MBTA makes every effort to develop projects that are consistent with local zoning regulations.

The project area is primarily a residential area, with established neighborhoods defined by parishes and occupied by generations of families. The neighborhood is diverse, with large populations of immigrants from various locations.

Minority-owned businesses and organizations in the area, as confirmed by the State Office of Women and Minority Business Assistance, include:

Bevco Associates, Inc.
25 Goodrich Road, Suite 2
Boston, MA 02130

Casa Nueva Vida
53 Glen Road, P.O. Box 2115
Jamaica Plain, MA 02130

Gail Sullivan Assoc., Inc.
179 Boylston Street, The Brewery, Building P
Jamaica Plain, MA 02130

Hispanic Office of Planning & Evaluation, Inc.
165 Brookside Avenue Extension
Jamaica Plain, MA 02130

Jackson Glass, Inc.
3195 Washington Street,
Jamaica Plain, MA 02130

Kelley Chunn & Associates
P.O. Box 2348
Boston, MA 02130

McKinnon Tree & Landscaping
31 Germania Street
Jamaica Plain, MA 02130

TFJ Management Services
Six Ashley Street, #2B
Jamaica Plain, MA 02130

A A Video Productions
429 South Huntington Avenue
Boston, MA 02130-4802

The proposed site is located near Forest Hills Station which is an intermodal terminus with subway service (Orange Line) and commuter rail service (Franklin Line), and is also the focal point for many bus feeder routes serving various locations in Boston.

ANTICIPATED IMPACTS

The MBTA has engaged itself in an extensive and interactive community process for this proposed Arborway project, and while the proposed facility is of great importance to the MBTA, it should also be to the community at large, due to the significant environmental and transit benefits. The MBTA further realizes that if the project were to be approached without significant community involvement, the proposed facility could, have a lasting negative impact on the community at large. Therefore, in an effort to avoid such a situation, the MBTA has been meeting regularly with the designated community group CPCAY (Community Planning Committee for the Arborway Yard) to work on the most critical project issues, including, but not limited to: facility access; environmental concerns, safety, aesthetics, traffic, and noise (acoustic mitigation), as well as a host of other issues. These efforts have been undertaken for the sole purpose of designing a bus storage and maintenance facility that attempts to meet the concerns of the community.

MITIGATION PROPOSED

The proposed new Arborway facility is being designed with very significant attention to the mitigation of noise that would be generated by the facility and its operations. First, a standard was agreed to and made part of the MOU (memorandum of understanding) between the City of Boston, the MBTA, and the community (the CPCAY represents the community in this agreement). It should also be stated that this standard far exceeds what is typically required of a transit facility under FTA noise guidelines; and again, this agreed-to standard has been accepted by the MBTA in an effort to accommodate the concerns of the community with regard to this proposed facility.

With regard to noise, the MBTA has been working very closely with its design consult-

ant to establish, model, and design the proper noise-mitigating features into the design of the proposed Arborway maintenance facility. This effort began first with the measurement of present noise levels in the neighborhood adjacent to the proposed Arborway facility location; the noise levels were measured at various times of the day and night, as well as during the weekdays and weekends—this information is being used as baseline data to measure against with the proposed design of the new facility. From this point, an acoustical model is being developed which measures the performance of the proposed design scheme, inclusive of all of its operational equipment. Buses and other elements are being taken into account, including the proposed mitigation devices, both inside and outside of the facility structures (i.e., sound barriers, baffles, equipment mufflers, etc.) that are being proposed as part of the overall design. We believe that such an effort by the MBTA has not only shown good faith, but also suggests that our efforts are far and way beyond what would normally be expected in an Environmental Notification Form (ENF), and possibly go beyond what would be expected in an Environmental Impact Report (EIR).

The current Arborway site, as it now exists, consists of a very large impervious ground area with a marginal stormwater treatment system. By rebuilding the facility on this site, dramatic improvements to the stormwater management system will be achieved. With the proposed development of the new facility, there will be a significant reduction in the overall impervious area of the site, the biggest contributing factor being the design of the parkland area that is proposed to be a minimum of 4 1/2 acres in area: this alone will reduce the impervious area of the site by 24% of the current conditions. The total reduction of impervious areas is likely to increase even further once the determination of uses for the City-controlled site has been determined. Thus, these changes are a direct result of the generosity of the MBTA in attempting to meet the needs and concerns of the Community through the donation of the eight-acre parcel of MBTA property.

With regard to energy usage, there are clearly significant benefits from the new Arborway facility, particularly when compared to the existing Bartlett Street garage. As previously stated, the existing Bartlett Street facility is completely out-of-date in every respect, including energy usage, while the proposed Arborway facility is being designed to utilize state-of-the-art energy management and monitoring devices that meet the new Massachusetts Energy Code (Chapter 13 of 780 CMR, Massachusetts State Building Code). This type of system will permit the MBTA to control each device or system in such a manner that it will only be operated when needed. Some of these energy-saving devices (or systems) include: lighting fixtures, occupancy sensors in all storage rooms and offices, dual-level switching, low-voltage control panels, high-efficiency fan and blowers, condensing boilers, radiant-heat, and energy-efficient transformers.

With regard to air quality, there are clearly significant benefits of the new Arborway facility, particularly when compared to the existing Bartlett Street garage. One on-going issue that plagues the Bartlett Street facility is the need to store some buses outside.

This is due to the facility being undersized, and in the winter months this necessitates leaving these buses idling for extended periods of time in an effort to prevent the brake lines from freezing. At the proposed new Arborway Bus Storage and Maintenance Facility, all of the 104 buses will be stored indoors, where the bus storage area will remain heated (typically to 55 degrees). Therefore, the exhaust emissions will be greatly reduced, not only by the fact that the buses will be garaged but also due to the change to an alternative fuel and zero tolerance for undesirable bus idling implemented by the MBTA Bus Operations Department.

Not unlike the noise/acoustical analysis described above, we believe the MBTA has not only shown good faith in our efforts to date, but has also gone beyond what would be normally expected on an ENF, and has possibly gone beyond what would be expected in an EIR.

With regard to light pollution, though not specifically regulated, the facility will be designed to minimize it. This design effort will be achieved through the use of Site lighting fixtures utilizing a forward-throw reflector and Type III and Type IV distribution lamps.

The MBTA, in the design of the proposed new Arborway facility, has also undertaken the design of the landscaping areas along the Arborway, which is under the ownership of the DCR, as well as providing the landscape-design services for the parkland area, which encompasses the other three sides of the proposed facility. This property will create a significant landscape buffer between the new MBTA Arborway facility and the adjacent neighborhood. This parkland property, which is eight-acres in total area less the amount that is determined to be developed for other community development, will be deeded back to the City of Boston for parkland and other community-based uses that have yet to be determined.

The City of Boston is vacating Parcel "D", known as the "pole yard" and is transferring it (approximately 58,582 square feet) to the MBTA.

There are no relocation measures necessary for this station modernization.

During the construction of the Arborway CNG Bus Maintenance and Storage Facility, all construction activities are specified to be performed in such a way as to minimize, to the greatest extent feasible, any noise, water, or air-quality impacts. During the construction phase there may be temporary noise related to construction activity. However, heavy construction, such as demolition will be performed during a limited time period, so that the community will not be adversely impacted.

ENVIRONMENTAL DOCUMENT REFERENCES

At the conception of this project, only state funds were anticipated for funding this project. Now it appears that federal funds will be identified and the MBTA is preparing the necessary environmental documentation for filing for federal funds for this project. This information will be provided at a later date.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Silver Line Tunnel Integrated Security System Deployment and Testing

PROJECT DESCRIPTION

The objective of the Integrated Security System project is to prevent unauthorized vehicles from entering the tunnel, to detect pedestrians entering the tunnel from any of the stations, to provide CCTV coverage of selected areas, and to prevent unauthorized persons from gaining access to certain areas. Its ability to function as designed requires that the MBTA provide network connectivity between all Silver Line stations and 45 High Street and that personnel be available to perform the enrollment and monitoring functions. CCTV Equipment installation will include 63 CCTV cameras at selected locations throughout the Silver Line tunnel. These cameras are capable of panning, tilting, and zooming and are programmed with “preset” to view specific areas related to activity or alarm conditions. Access Control and Intrusion Detection consists of the installation of 72 card readers/door controllers and 132 intrusion-detection sensors. The Integrated Monitoring Station will include installing, configuring, and testing a head-end monitoring station at 45 High Street. This monitoring station will provide the MBTA personnel with access to all CCTV video cameras and will provide notification of all alarm activity. Alarms will trigger the CCTV subsystem to provide live imagery of each event, and it will provide access to a digital video recording of each event. Vehicle Barriers consists of installing of vehicle barriers at the D Street portal of the Silver Line tunnel. These barriers have a State Department barrier rating of K12 and are installed flush to the ramp surface. Behavioral Video Configuration and Testing includes installing, configuring, and testing a behavioral video system at the D Street portal of the Silver Line tunnel.

AREA DESCRIPTION

The initial build phase of the Transitway project, consisting of a one-mile tunnel extending from South Station to the South Boston Piers area includes three stations (South Station, Courthouse Station, and World Trade Center Station). It was opened for revenue operation on the December 17, 2004. Dual-mode trolley buses will run on overhead catenary electric power in the tunnel and clean-fuel buses will run on local streets.

ANTICIPATED IMPACTS

This project involves critical Homeland Security safety and security improvements, that are contained within the existing tunnel system therefore no impacts are anticipated to any communities.

MITIGATION PROPOSED

This project allows the MBTA to provide a faster, safer, more reliable, and more secure service, with potential for increased service to the South Boston waterfront area.

ENVIRONMENTAL DOCUMENT REFERENCES

An Environmental Impact Statement (EIS) was filed in 1993 and approved by FTA in 1994. The EIS analyzed the impacts of Phases II and III of the Silver Line. (Phase I was funded with MBTA funds only, and therefore did not require FTA review.)

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Government Center – Green and Blue Line Stations

PROJECT DESCRIPTION

The purpose of this project is the renovation and modernization of Blue and Green line stations, to make these stations compliant with the Americans with Disabilities Act of 1990 (ADA), and to make improvements to City Hall Plaza and Cambridge Street.

Blue Line – This project will consist of the construction of a new headhouse on the east side of Cambridge Street near the fountain at City Hall Plaza. The headhouse will have elevator, escalator, and stair access to the mezzanine area above the Blue Line platforms. Passengers entering the new headhouse will also have access to the Green Line via two existing stairwells and an existing escalator. An ADA-accessible fare-collection area will be provided at the mezzanine level. Passenger information systems, lighting, landscaping, and other amenities will also be provided.

Green Line – A new headhouse to be constructed in the immediate vicinity of the current headhouse, will be designed to be asymmetrical to fit into the urban design at the plaza. From this new headhouse, new vertical elements will connect the plaza level and Green Line platforms. ADA-compliant fare-collection and turnstile facilities will be provided. Platforms will be renovated to comply with ADA requirements. A new elevator will be installed to address vertical circulation requirements between the Green Line and the lower-level Blue Line platform. In addition, station finishes, graphics, tactile edge strips, LED signage, automated fare-collection equipment, a new electrical substation, and improved circulation will be provided.

AREA DESCRIPTION

The Government Center area is predominantly commercial, with residential mixed-use sited in the area's small hotels, condominiums, and apartment buildings near Devonshire and State Streets. The project is located in U.S. Census tract 303, located in downtown Boston's urban core of government, commercial office/retail, and mixed uses. According to the 2000 U.S. Census, this census tract has a residential population of 4,074. Population breakdown by race/ethnicity is 88% White, 5% Black, 4% Asian, and 4% Hispanic/Latino.

Government Center is an important transit node, served by both the Blue and Green Lines of the rapid transit system.

There is no identifiable minority community. Furthermore, there is no identifiable minority business district or residential community in the immediate vicinity.

ANTICIPATED IMPACTS

Construction activities and Traffic Management Plans, as approved by the City of Boston, will be restricted and will be staged in such a way to minimize disruptions to all patrons, pedestrians, drivers, businesses, and residents in the area. “Kit of Parts” barriers will also constrain construction hazards to within the work zone. The MBTA has had good success in limiting impacts to nearby businesses by using these barriers in the past.

Traffic shifts on Cambridge Street will occur at planned intervals. Loading zones and general parking along that section of Cambridge Street will be alternately removed, relocated, or added throughout these shift changes.

MITIGATION PROPOSED

There are farmers’ market and art/musical events scheduled on the plaza on weekdays. To accommodate the market during the construction period, a wooden deck will be constructed over an unused sunken-fountain area of the plaza. The market and plaza events will be relocated to that area.

All takings will be limited to the vacant City Hall Plaza area. There are no business relocations required and no impacts on nearby businesses.

ENVIRONMENTAL DOCUMENT REFERENCES

A Finding of No Significant Impact (FONSI) for the Government Center Green and Blue Line station accessibility project was issued on November 29, 2004.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Orange Line Signal Upgrade

PROJECT DESCRIPTION

This project will include the design, installation, certification, testing and operation of an upgraded signal system between Chinatown and Oak Grove stations on the Orange Line. The new signal system will provide double-direction automatic train operation based on cab signaling, similar to operations that were installed in the “ Southwest Corridor” portion of the Orange Line. This work will include the electrifying of the hand-throw crossover at Chinatown Station and replacing switches at the following stations: Chinatown, North Station, Community College, Wellington, and Oak Grove. This will require the upgrading of several of the bungalows/central instrument houses (CIHs) in the wayside or replacing them with new ones.

AREA DESCRIPTION

The project is planned for the urban central subway system extending to Oak Grove in Malden. The Orange Line meets the Title VI definition of a minority service line, with more than 33% of the stations serving minority neighborhoods.

ANTICIPATED IMPACTS

This project involves improvements contained within the existing tunnel system and existing right-of-way, therefore and as such no impacts are anticipated to any communities. However, some service shutdowns are required to accommodate construction of the new signal system and associated elements—they began in March 2005 and will be ongoing until construction season ends in November 2005. These shutdowns are being mitigated by a shuttle-bus replacement service. Advanced notice of this replacement service is provided through flyers, other media, and community group notification.

The construction of the Orange Line signal project will be done in such a way that there will be no adverse noise, water, or air impacts. The surrounding area is predominately commercial, so there will be no noise impacts to residential areas.

MITIGATION PROPOSED

This project will provide a faster, safer, more reliable service and potentially more service to low-income communities along the corridor (i.e., Chinatown, Roxbury, and Jamaica Plain). These communities will benefit from the expected improvements. The average age of the current signal system is between 25 and 35 years old. The new signal system will lead to improved and more efficient customer service between Back Bay and Oak Grove, as well as improved headway and less frequent signal system failures on the Orange Line.

There are no land takings or relocations for associated with this project.

ENVIRONMENTAL DOCUMENT REFERENCES

A Categorical Exclusion was approved on January 19, 2003.

MBTA TITLE VI FIXED FACILITY ANALYSIS

PROJECT NAME

Lawrence Intermodal Station

PROJECT DESCRIPTION

The MBTA is providing funding for construction of the Merrimack Valley Regional Transit Authority (MVRTA) Transportation Center at the intersection of Merrimack Street and South Union Street in downtown Lawrence.

The project involves relocation of the existing Lawrence commuter rail station about 1/2 mile east down Merrimack Street to a site previously used as commercial parking lot. A center-platform station with a pedestrian bridge connection, retail and public safety uses, and a parking structure will be constructed. The parking structure will accommodate three bus bays and commuter rail pickup/drop-off areas. The total number of parking spaces will be 900, of which 400 spaces will be provided for transit users and 500 will replace the surface spaces and expand the capacity used by area commercial businesses. The facility will also include interior train-waiting space with concessions trackside, a bus waiting area, and landscaping.

AREA DESCRIPTION

The project is proposed to be constructed in downtown Lawrence, a city 25 miles north of Boston. The location is within census tract 2,516, which has a population of 5,965, according to the 2000 U.S. Census, with a minority population of 68%. Population breakdown of the census tract area is 31% White, 6% Black, 49% Hispanic, 6% Asian, and 6% mixed race.

Commercial facilities in the area include mill, retail outlet, warehousing, and office uses. Some of the businesses include Ideal Box, a New Balance outlet, Greater Lawrence Psychological Center, Wood Mill, and other major mill complexes.

ANTICIPATED IMPACTS

The project is an enhancement for Lawrence and will advance local urban redevelopment plans of the Merrimack Valley Enhancement Project and Canal Street beautification project.

The existing station has surface parking with minimal amenities and limited accessibility of a mini-high ramp. The proposed station will enhance commuter services by providing full accessibility and station conveniences.

MITIGATION PROPOSED

Mitigation proposed includes a signalized entrance to the Transportation Center and changes in lane-use designations at the intersection of Merrimack Street and South Union Street. The northbound South Union Street approach will change to three

lanes; one for left-turn only, one through lane, and one through/right-turn lane. In addition, the traffic-light cycle-length time will be modified to provide a 10-second protected left-turn signal for the southbound South Union Street approach.

ENVIRONMENTAL DOCUMENT REFERENCES

An ENF Certificate was issued in August 2001 and a Notice of Project Change Certificate was also issued for additional non-transit parking. The FTA determined that the project, as revised, met criteria for Categorical Exclusion, as indicated in a letter dated April 30, 2002.



CHAPTER 3

Service Coverage and Standards

[FTA C4702.1 III.3.a]

DEMOGRAPHIC AND SERVICE MAPS, OVERLAYS AND CHARTS

[FTA C 4702.1 III. 3.a (1)]

For each Title VI triennial report, the MBTA provides numerous maps, overlays, and summary statistics for the MBTA Service Area, using demographic data from the previous U.S. Census. These materials are useful both for describing the current composition of neighborhoods in terms of minority and nonminority residents, and for understanding the spatial relationships of neighborhoods with minority populations above the regional average. When additional information about service coverage, planned system improvements, transit amenities, etc, is added to basic maps and tables identifying minority neighborhoods, the MBTA's performance with respect to Title VI guidelines can be understood more fully through graphical means.

Figure 3-1 provides basic information about the minority status of traffic analysis zones (TAZs) and census tracts within the MBTA commuter rail service area. Highlighted TAZs and tracts are those with minority population greater than the 19.9% average for this area as a whole. Similarly, Figure 3-2 provides information about the minority status of traffic analysis zones (TAZs) in the urban fixed-route transit service area. The minority population of this area is 24.7% – slightly higher than that of the commuter rail service area. Again, highlighted zones in Figure 3-2 indicate areas where the minority population is higher than average. Different minority population thresholds are used for the commuter rail and urban fixed-route service areas in order to most appropriately reflect the actual minority representation in areas where potential reallocation or expansion of the respective service levels would be appropriate. In addition, it should be noted that while TAZs are the more preferable analysis unit (given that they are designed specifically for Boston Region MPO travel demand modeling), some outer communities served by the MBTA are outside the TAZ coverage boundaries. Consequently, census tracts are used instead for commuter rail service area analyses in those cases.

DOCUMENTATION OF BOSTON REGION MPO TIP MAP

Figure 3-3 depicts the geographic distribution of transit capital improvements pro-

grammed in the Boston Region MPO's FY 2005 Transportation Improvement Program. This map confirms that the improvements are geographically dispersed throughout the MBTA service area, and also that approximately two-thirds of federal capital investments are located in minority neighborhoods. While FTA guidelines do not set forth specific compliance thresholds for maps of these types, such substantial capital investments in these neighborhoods demonstrate the MBTA's commitment to improving transit service for minority customers. (Because the map designates only federally funded projects in the first year of the Boston Region MPO TIP, it is less comprehensive than the list of projects in Table 2-1).

Documentation of Map of Populations by First Language Spoken

A map depicting the geographic distributions of populations by first language spoken is included as Figure 3-4. The top six languages are shown on this map. They include:

- English
- Spanish or Spanish Creole
- Chinese
- Portuguese or Portuguese Creole
- Italian
- French Creole

These data are from the 2000 U.S. Census. The MBTA will use this map in developing its Limited English Proficiency program.

SERVICE STANDARDS AND POLICIES

[FTA C 4702.1 III. 3.a (2)]

Documentation of Vehicle Load Standards

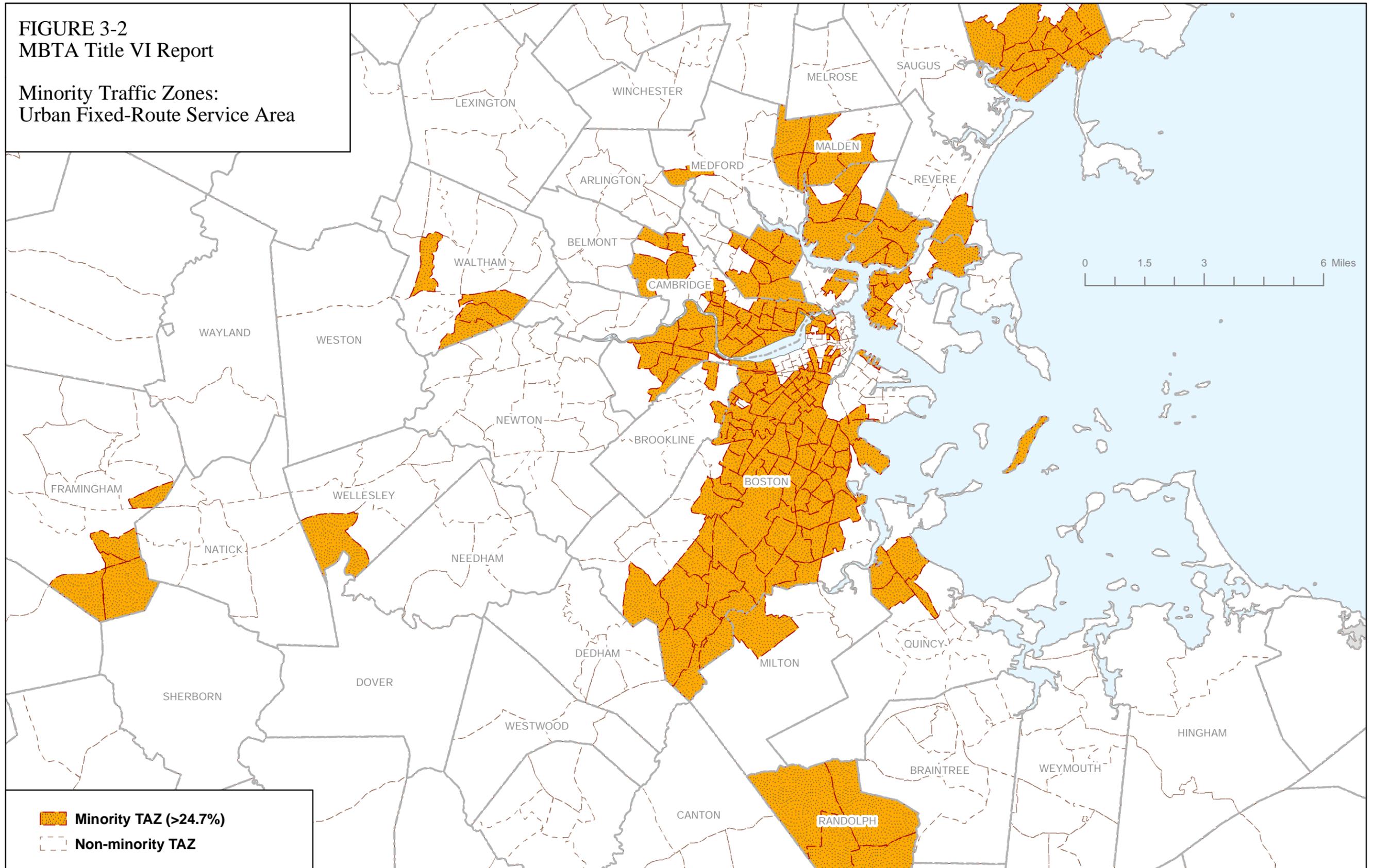
[FTA C 4702.1 III. 3.a (2.a)]

The MBTA's vehicle load standards, which are used for determining Title VI compliance, are included in the *Service Delivery Policy*. This policy, first adopted in 1996, was created to implement objective standards and consistent decision-making procedures for evaluating existing and proposed services. Since 1996, the *Service Delivery Policy* has been revised twice: in 2002 and 2004. These revisions were proposed with the 2002 and 2004 Service Plans and were discussed and commented on at the public meetings/hearings that were held for both service plans. The proposed revisions were also posted on the MBTA's website, through which additional public comments were accepted. All revisions were ultimately approved by the MBTA Board of Directors before taking effect. Any future revisions to the service standards found in the *Service Delivery Policy* will also undergo a public review process and MBTA Board approval.

The recent changes to the vehicle load standards were developed to make them more sensitive to bus overcrowding problems by averaging loads over shorter periods of time. Changes were also made in the presentation of the load standards. Because there are a

FIGURE 3-2
MBTA Title VI Report

Minority Traffic Zones:
Urban Fixed-Route Service Area



**FIGURE 3-3
MBTA Title VI Report**

**Transportation
Improvement Program
Program Year 2005**

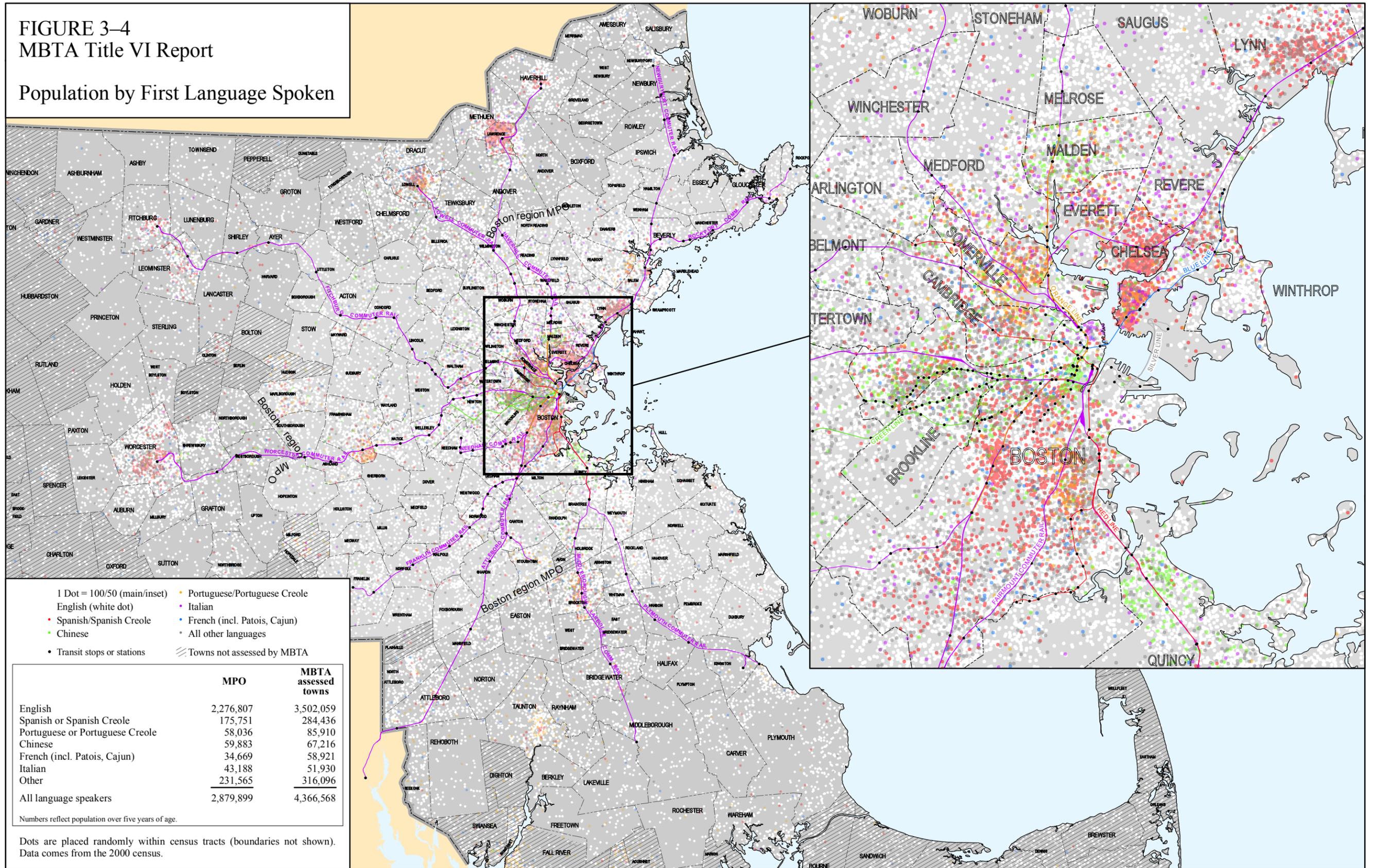
- Transit station project
- Transit line project
- Boston MPO minority population > 21.4 %



Not depicted on the map

- Blue Line Vehicles
- MBTA Enhancement Program
- MBTA 5307 Infrastructure Improvements
- MBTA Station Management Program
- Purchase 175 Compressed Natural Gas Buses
- Commuter Rail Top Deck Overhaul
- Red Line Number 2 cars
- Commuter Rail Coach Overhaul
- Purchase 175 Emission Control Diesel Buses
- Preventative Maintenance
- Power Upgrades
- Bus Midlife Overhaul
- MBTA Systemwide ITS
- MBTA 5309 Infrastructure Improvements
- MBTA Job Access Program

FIGURE 3-4
MBTA Title VI Report
Population by First Language Spoken



number of different types of vehicles in the MBTA's fleets at any given time, and because the fleets change over time, the actual seating capacity and maximum number of passengers allowed by the load standards for each type of vehicle are now included in an addendum to the policy, rather than in the standard itself. The following is text of the vehicle load standards as they appear in the 2004 update of the *Service Delivery Policy*.

As indicated in the Frequency of Service Standard, the level of service provided by the MBTA is primarily a function of the demand for that service, as demonstrated through the number of customers utilizing the service at different times during the day. On weekends and during some weekday time periods, most MBTA services operate with sufficient frequency to provide every passenger with a seat. However, during the heaviest weekday travel times or locations some passengers will need to stand.

During time periods when some passengers will be standing, the MBTA will provide sufficient service so that vehicles are not excessively crowded. The purpose of the Vehicle Load Standard is to define the levels of crowding that are acceptable by mode and time period. The time periods used by the MBTA for all modes, for both the Frequency of Service and Vehicle Load Standards, are defined later in the Vehicle Headway section of this chapter (see Table 3-8).

Because heavy and light rail in the core area are heavily used throughout the day, some standees can be expected during all time periods. For the purposes of this policy, the core area, as it relates to the heavy rail and light rail Vehicle Load Standard, is defined in Table 3-1.

TABLE 3-1

MBTA Core Area Boundaries	
<i>Light-Rail and Heavy-Rail Core Area</i>	
Blue Line	Bowdoin to Aquarium
Orange Line	Back Bay to North Station
Red Line	Kendall to South Station
Green Line	All underground stations as well as Lechmere and Science Park

By mode and time period, the acceptable levels of crowding are shown in Table 3-2. The load standards in the table are expressed as a ratio of the number of passengers on the vehicle to the number of seats on the vehicle.¹ To determine whether a service has an acceptable level of crowding, the vehicle loads are aver-

¹ For bus, light rail, and heavy rail, the Vehicle Load Standard is based on the ratio of passengers seated capacity at maximum load. For Commuter Rail and Ferry services, the load standard is based on the ratio of boarding passengers per vehicle to seated capacity.

TABLE 3-2

Mode	Vehicle Load Standards by Mode Time Period	Passengers/ Seats
Bus*	Early AM, AM Peak, Midday School, and PM Peak	140%
	Midday Base, Evening, Late Evening, Night/Sunrise, and Weekends	
	Surface portions of routes	100%
	Tunnel portions of routes	140%
Green Line	Early AM, AM Peak, Midday School, and PM Peak	225%
	Midday Base, Evening, Late Evening, Night/Sunrise, and Weekends	
	Core Area	140%
	Surface	100%
Red Line #1 & #2 Cars	Early AM, AM Peak, Midday School, and PM Peak	270%
	Midday Base, Evening, Late Evening, Night/Sunrise, and Weekends	
	Core Area	140%
	Outside Core Area	100%
Red Line #3 Cars	Early AM, AM Peak, Midday School, and PM Peak	334%
	Midday Base, Evening, Late Evening, Night/Sunrise, and Weekends	
	Core Area	174%
	Outside Core Area	100%
Orange Line	Early AM, AM Peak, Midday School, and PM Peak	225%
	Midday Base, Evening, Late Evening, Night/Sunrise, and Weekends	
	Core Area	140%
	Outside Core Area	100%
Blue Line	Early AM, AM Peak, Midday School, and PM Peak	225%
	Midday Base, Evening, Late Evening, Night/Sunrise, and Weekends	
	Core Area	140%
	Outside Core Area	100%
Commuter Rail	Early AM, AM Peak, Midday School, and PM Peak	110%
	Midday Base, Evening, Late Evening, Night/Sunrise, and Weekends	
		100%
Ferry	Inner Harbor - All times	125%
	Outer Harbor - All times	100%

* For the purposes of the Vehicle Load Standard, "bus" encompasses all rubber-tired vehicles, including diesel, CNG, trackless trolley, dual-mode, etc.

aged over specified periods of time. Due to scheduling constraints and peaking characteristics, some individual trips may exceed the load levels expressed in the standards.

For most modes, the load standards shown represent average maximum loads over any time period on weekdays and over the whole day on weekends. For bus on weekdays, the loads cannot exceed the standard when averaged over any 30-minute segment of an Early AM, AM Peak, Midday School or PM Peak period, or any 60-minute segment of a Midday Base, Evening, Late Evening or Night/Sunrise period. On weekend days, the loads cannot exceed the standard when averaged over any 60-minute segment of the whole service day.

In addition to looking at loads within time periods, the MBTA will routinely evaluate loads at the beginning and end of the service day to determine whether changes in frequency and/or span of service are warranted. The Net Cost/Passenger Standard will be used as one means of flagging routes that may be candidates for such changes.

Documentation of Vehicle Assignment Policies *[FTA C 4702.1 III. 3.a (2.b)]*

Standards for assessing vehicle assignment with respect to Title VI are governed by the following MBTA policies/guidelines.

Bus Vehicle Assignment

The MBTA's bus fleet consists of 49 electric trackless trolleys; 360 CNG vehicles; 15 dual-mode vehicles; 146 emission control diesel (ECD) vehicles; and 485 diesel buses, many of which will be retired as new ECD vehicles become available. In addition to these new ECDs, more dual-mode vehicles are on order for the Silver Line Waterfront. Indeed, the MBTA has acquired over 500 clean-fuel vehicles to provide new service on Silver Line Washington Street bus rapid transit (BRT) routes 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, Executive Office of Environmental Affairs (EOEA), Department of Environmental Protection (DEP), the MBTA will, "Insofar as possible, operate 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 3-3 provides additional information on the vehicles in the bus fleet.

In general, buses are assigned to one of nine MBTA bus storage and maintenance facilities and operate only on routes served by that garage. Daily, within each garage, individual vehicles are not assigned to specific routes, but circulate among routes based on a number of operating constraints and equipment criteria. Following is a discussion of the guidelines used by inspectors when assigning vehicles in the current bus fleet to routes.

Vehicle Assignment Strategy

49 TRACKLESS TROLLEYS

The trackless trolley fleet currently consists of 28 new and 21 old vehicles. These vehicles are limited to use on routes where overhead catenary lines provide electric power. Twelve of the new vehicles are currently being used for service on Silver Line Waterfront, and 16 are operating on three routes in Belmont, Cambridge, and Watertown. The vehicles now used for Silver Line service will soon be replaced by 60-foot dual-mode vehicles. Most of the vintage – 1976 Flyer vehicles will be retired once the new vehicles are all available for the Belmont, Cambridge, and Watertown routes.

360 CNG BUSES

This fleet is composed of 40-foot vehicles and 60-foot articulated vehicles. Currently service is provided on Route 39 and Silver Line Washington Street with the 60-foot vehicles, all of which are housed at the new Southampton facility; 17 of these 60-foot vehicles are dedicated to the Silver Line. There are 316 of the CNG 40-foot buses, which are mostly housed at the Arborway and Cabot garages; they provide service on many routes in the urban core areas. With the exception of the vehicles at Southampton, which currently serve only two routes, inspectors assign these buses daily, on a random basis, within each garage.

485 DIESEL BUSES

The diesel buses are assigned to the suburban garages, as well as to the Albany Street and Charlestown garages. Of the 175 new ECD vehicles in the first order, 146 are on-site. This order will be divided among the Charlestown (80), Lynn (45), Quincy (40), and Fellsway (10) garages. A second order for 85 additional ECD vehicles has been made—these vehicles are scheduled for delivery in 2006. Within each garage, inspectors assign the diesel buses to routes daily, on a random basis, after a number of equipment and operating criteria have been met:

- Due to their unique markings, the three crosstown bus routes use a dedicated fleet of 20 vehicles, all of which are diesel buses built in 1994 or 1995. These routes provide a limited-stop, circumferential service that complements the radial rail system. Vehicles on these routes are used to test new amenities, such as automated stop announcements and bicycle racks.
- The 43 1989-model-year diesel buses are equipped with soft seats and are housed in the MBTA's Albany Street garage in Boston's South End, for ease of maintenance. These vehicles are assigned to a mix of urban and express routes that operate from this garage. The MBTA has not purchased additional buses with soft seats due to the high maintenance costs.

32 DIESEL/ELECTRIC BUSES

All of the new 60-foot, articulated dual-mode vehicles will operate on the Waterfront

portion of the new Silver Line BRT service between South Station, various locations in South Boston, and Logan Airport.

TABLE 3-3

Bus Fleet Roster										
Propulsion	Active Vehicles	Year Built	Builder	Air Cond.	Access-ible	Over-hauled	Length	Width	Seats	Planning Capacity
Straight Electric	21	1976	New Flyer	N	None	Mini 96, 99	40'	102"	44	61
	28	2003-04	Neoplan	Y	Ramp	None	40'	102"	31	43
Diesel Series 60 500HP*	15	2004	Neoplan	Y	Ramp	None	60'	102"	47	65
	0	2004	Neoplan	Y	Ramp	None	60'	102"	38	65
CNG Cummins C8.3	175	2004	NABI	Y	Ramp	None	40'	102"	39	54
Diesel Caterpillar C9	146	2004	Neoplan	Y	Ramp	None	40'	102"	38	53
CNG Cummins C8.3	124	2003	NABI	Y	Ramp	None	40'	102"	39	54
CNG Series 60 400 HP	44	2003	Neoplan	Y	Ramp	None	60'	102"	57	79
CNG Series 50G	15	2001	New Flyer	Y	Ramp	None	40'	102"	39	54
	2	1999	New Flyer	Y	Ramp	None	40'	102"	39	54
Diesel Series 50	133	1994	TMC	Y	Lift	2004-05	40'	102"	40	56
	110	1995	Nova BUS	Y	Lift	2004-05	40'	102"	40	56
	143	1995	Nova BUS	Y	Lift	2004-05	40'	102"	40	56
Diesel 6V92 DDECII	16	1989	TMC	Y	Lift	1996-98	35'	96"	36	50
	43	1989	TMC	Y	Lift	1996-98	40'	102"	43	56
	40	1989	TMC	Y	Lift	1996-98	40'	102"	40	56

*Dual mode buses not all yet in service

Heavy Rail/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; E–Heath Street.

Some Green Line vehicles can be operated on any Green Line branch. However, the Type 8 cars are all assigned to the B branch in order to maintain gauge-face angle on the rail. Type 7 cars with the new wheel profile are also assigned to the B branch. A combination of Boeing cars and Type 7 cars with the old wheel profile are used on the other Green Line branches.

The Mattapan High Speed Line has weight, curve, and power limitations that prevent the use of current Green Line light-rail vehicles. Instead, PCC (President’s Conference Committee) cars are used from Ashmont to Mattapan. All of the PCCs have recently undergone extensive rehabilitation, including the replacement of major structural components. Table 3-4 lists the vehicles in the light-rail fleet.

Heavy-rail vehicles are operated on the three subway lines: the Red Line, the Orange

TABLE 3-4

Light-Rail Fleet Roster				
Assignment	Type of Vehicle	# Of Vehicles	Year Built	Builder
Mattapan High Speed Line	PCC	10	1945-46*	Pullman Standard (USA)
Green Line	SLRV	51	1976-83	Boeing-Vertol (USA)
Green Line	Type 7	94	1986-88	Kinki-Sharyo (Japan)
Green Line	Type 7	20	1997	Kinki-Sharyo (Japan)
Green Line	Type 8	41	1998-03	Breda (Italy)

*All PCC's have recently undergone extensive rehabilitation.

Line, and the Blue Line. The specific operating environment of the Blue, Orange, and Red Lines 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 Red Line has two branches and operates using three types of cars. There are no set distribution policies for assignment of Type 1, 2, or 3 cars between the two Red Line branches (Ashmont and Braintree). All three types are put into service on both branches as available. Table 3-5 lists the vehicles in the heavy rail fleet.

TABLE 3-5

Heavy Rail Fleet Roster								
Assignment and Class	Fleet Size	Year Built	Builder	Length	Width	Seats	Capacity (Policy)	Crush Capacity
Blue Line								
No. 4 East Boston	70	1978-80	Hawker-Siddeley (Canada)	48' 10"	111"	42	95	159
Orange Line								
No. 12 Main Line	120	1979-81	Hawker-Siddeley (Canada)	65' 4"	111"	58	131	224
Red Line								
No. 1 Red Line	74	1969-70	Pullman Standard (USA)	69' 9 ³ / ₄ "	120"	63	167	267
No. 2 Red Line	58	1987-89	UTDC (Canada)	69' 9 ³ / ₄ "	120"	62	167	260
No. 3 Red Line	86	1993-94	Bombardier (USA)	69' 9 ³ / ₄ "	120"	50	167	277
Total Rapid Transit Vehicles	408							

Commuter Rail Vehicle Assignment

Vehicle assignments are developed to meet specific characteristics of commuter rail service. These characteristics include providing minimum seating requirements for each scheduled trip, providing one functioning toilet car in each trainset, maintaining train length due to infrastructure constraints, and providing modified vehicles 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.

Railroad Operations operates a 377-route-mile regional rail system in the Boston metropolitan area comprised of 13 lines that serve 125 stations. The existing system consists of two separate rail networks: a five-route northern system that 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, Attleboro/ Providence, Stoughton, Readville, Middleboro, and Kingston/Plymouth. Trains operate in a push-pull mode with the locomotive leading (pull mode) when departing Boston and the control car leading when arriving in Boston.

The commuter rail coach fleet is comprised of four types of coaches and two types of locomotives, which are assigned to the thirteen routes. Both coaches and locomotives have a service life of 25 years. Tables 3-6 and 3-7 list the vehicles in the current fleet.

Train consists are assembled based on minimum seating capacity to meet the AM and PM peak requirements. Presently the MBTA commuter rail contract operator is contractually required to have 122 coaches in 22 north-side trains and 213 coaches in 33 south-

TABLE 3-6

Commuter Rail Coach Fleet					
Manufacturer	Fleet Size	Date	Classification	Rebuilt	Seats
Pullman	57	1978-79	BTC-1C	1995-96	114
MBB	33	1987-88	BTC-3		94
MBB	34	1987-88	CTC-3		96
Bombardier A	40	1987	BTC-1A		127
Bombardier B	54	1989-90	BTC-1B		122
Bombardier B	52	1989-90	CTC-1B		122
Kawasaki	50	1990-91	BTC-4		185
Kawasaki	25	1990-91	CTC-4		175
Kawasaki	17	1997	BTC-4		182
Kawasaki	15	2001-02	BTC-4		182
Total Coaches	377				

TABLE 3-7

Commuter Rail Locomotive Fleet				
Model	Fleet Size	Date	Horsepower	Rebuilt
F40PH-2	18	1978, 80	3000	1989-90 Bombardier
F40PH-2C	25	1987-88	3000	2001-03 Boise Locomotive
F40PHM-2C	12	1991, 93	3000	2003-04 Boise Locomotive
GP40MC	25	1997	3000	

**Total
Locomotives 80**

side trains. Most train consists generally are not dedicated to a specific line but are cycled throughout the system (either north or south). The following must also be considered when assigning vehicles:

- Kawasaki Coaches (bilevel) – There is no specific policy restricting the use of these vehicles on the commuter rail system. Currently they are used exclusively in the south-side commuter rail system, since it carries approximately 65% of the total boardings of the system. The bilevel coaches offer 50%–70% more seating than the single-level coaches. This allows Railroad Operations to maintain consist seating capacity while minimizing the impacts of platform and layover facility constraints. The MBTA intends to purchase only bilevel coaches in future procurements to accommodate increasing ridership demands and to allow for greater flexibility when scheduling vehicle assignments.
- Coaches manufactured by MBB – Every train consist has at least one MBB coach equipped with toilet facilities. MBB blind-trailer coaches have also been modified to guarantee priority seating for eight wheelchair spaces on all trains on the Worcester Line of commuter rail in accordance with agreements made at the time of the rail extension. There are only 14 trains that are cycled on the Worcester Line daily; however, 33 coaches were modified to provide for greater vehicle assignment flexibility.
- Old Colony Lines – The coaches used for service on the Old Colony lines are equipped with power doors, as all of the stations on these lines have high 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.
- Advanced Civil Speed Enforcement System (ACSES) – All control coaches and locomotives operating on the Attleboro Line must be equipped with a functioning ACSES system. ACSES is a Federal Railroad Administration (FRA)–mandated requirement. All locomotives except the GP40 series have ACSES installed and functioning. The GP40 locomotives have ACSES installed but have not yet been

qualified to use it. The Bombardier control coaches do not have ACSES installed as of yet and are limited to the north-side service. There are more locomotives and control coaches equipped with ACSES than are required to meet the daily Attleboro scheduled trips. This provides for greater flexibility in vehicle assignments.

- Every train consist must have a control coach.

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

Documentation of Vehicle Headway Standards

[FTA C 4702.1 III. 3.a (2.c)]

For vehicle headway, the Title VI circular requires grantees to develop standards for scheduled frequency of service, which are covered in the MBTA's *Service Delivery Policy*. In addition, the MBTA reports on how well services adhere to the published schedules, using the schedule adherence standards, which are also found in the *Service Delivery Policy*. As discussed in the vehicle load section above, changes to the service standards in the *Service Delivery Policy* are reviewed by the public and approved by the MBTA Board of Directors before being implemented.

As a result of this process, a number of changes to the standards in the *Service Delivery Policy* were recently adopted. These include the addition of standards for Key Bus Routes and new time periods to facilitate incorporation of the Key Bus Routes. Also, the schedule adherence standards were completely revamped for bus services, as the previous standards were not useful for effectively diagnosing on-time performance problems. One major addition to the new bus standards is adherence to midroute time points. Use of this measure will be phased in as computer assisted design/automated vehicle location (CAD/AVL) equipment becomes available for effective data collection.

Following is the text of the updated standards for both frequency of service and schedule adherence as they appear in the 2004 update of the *Service Delivery Policy*.

Frequency-of-Service Standards

To maintain accessibility to the transportation network within a reasonable waiting period, the MBTA has established minimum Frequency of Service levels for each mode, by time of day. On less heavily traveled services, these minimum levels dictate the frequency of service, regardless of customer demand.

Table 3-8 shows the weekday time period definitions used by the MBTA for all modes for both the Frequency of Service and Vehicle Load Standards. Because travel patterns on the weekend are different than on weekdays, specific time peri-

TABLE 3-8

MBTA Weekday Time-Period Definitions	
<i>Time Period</i>	<i>Definition</i>
Early AM	6:00 AM – 6:59 AM
AM Peak	7:00 AM – 8:59 AM
Midday Base	9:00 AM – 1:29 PM
Midday School	1:30 PM – 3:59 PM
PM Peak	4:00 PM – 6:29 PM
Evening	6:30 PM – 9:59 PM
Late Evening	10:00 PM – 11:59 PM
Night/Sunrise	12:00 AM – 5:59 AM

ods are not defined for Saturdays and Sundays. Table 3-9 shows the Minimum Frequency of Service levels for each mode by time period.

On heavily used services, the minimum Frequency of Service levels may not be sufficient to meet customer demand. When load levels indicate that additional service is warranted, as defined in the Vehicle Load Standard, the frequency of service will be increased to provide a sufficient number of vehicles to accommodate passenger demand.

Schedule Adherence

Schedule Adherence Standards vary by mode and provide the tools for evaluating the on-time performance of the individual MBTA routes/services within each mode. The Schedule Adherence Standards also vary based on frequency of service because passengers using high-frequency services are generally more interested in regular, even headways than in strict adherence to published timetables; on less frequent services, passengers expect arrivals/departures to occur as published.

BUS SCHEDULE ADHERENCE STANDARDS

The environment in which buses operate makes it difficult to provide bus service with the same degree of precision that is possible for some other modes. Therefore, the Schedule Adherence Standards for bus routes are designed to ensure that routes operate as reliably as possible—given their uncertain environment—without early departures, chronic delays, or unpredictable wait and/or travel times.

The Bus Schedule Adherence Standards establish two separate thresholds to measure on-time performance. The first measures the on-time performance of each trip on the route. The second measures the on-time performance of the route itself, based on the percent of trips throughout the day that operate on time.

TABLE 3-9

Minimum Frequency of Service Standards		
Mode	Weekday Time Periods	Minimum Frequency *
Bus **		
Local/commuter rts. areas)	AM & PM peak periods	30-minute headway
	All other periods policy objective of 30-minute	60-minute headway (midday headway in high-density
	Saturday & Sunday - all day	60-minute headway
Express/commuter rts.	AM Peak	3 trips in the peak direction
	PM Peak	3 trips in the peak direction
Key Routes	AM & PM Peak	10-minute headway
	Early AM & Midday Base/School	15-minute headway
	Evening & Late Evening	20-minute headway
	Saturday - all day	20-minute headway
	Sunday - all day	20-minute headway
Light Rail/Heavy Rail	AM & PM peak periods	10-minute headway
	All other periods	15-minute headway
	Saturday & Sunday - all day	15-minute headway
Commuter Rail	AM & PM peak periods	3 trips in the peak direction
	All other periods	180-minute headway in each direction
	Saturday - all day	180-minute headway in each direction
Ferry/Commuter Boat	AM & PM peak periods	30-minute headway in the peak direction
	Off-peak periods	120-minute headway

*The minimum frequency-of-service standards are primarily expressed as "Headways," which indicate the number of minutes scheduled between trips on a route.

**For the purposes of the frequency-of-service standard, "Bus" encompasses all rubber-tired vehicles, including diesel, CNG, trackless trolley, dual-mode, etc. The definitions of types of bus routes are found in Chapter 2.

1. **Bus Trip Tests:** To determine whether or not individual trips on a route are on time, the MBTA uses two different tests. These tests are based on the type of service, as determined by its frequency. For the purposes of the Bus Schedule-Adherence Standards, the two types of services are defined as follows:

- **Scheduled Departure Service:** A route is considered to provide scheduled departure service for any part of the day in which it operates less frequently than one trip every 10 minutes (headway ≥ 10 minutes). For scheduled departure services, customers generally time their arrival at bus stops to correspond with the specific scheduled departure times.
- **Walk-Up Service:** A route is considered to provide walk-up service for any part of the day in which it operates more frequently than one bus every 10 minutes (headway < 10 minutes). For walk-up service, customers can arrive at a stop without looking at a schedule and expect only a brief wait. There are two important indicators of on-time performance for walk-up service. One is how evenly spaced the buses are, and the other is how closely the actual duration of the trip approximates the scheduled travel time.

A route might operate entirely with walk-up 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 measured individually to determine whether or not it is on time, according to the type of service that it provides. Therefore, there are two separate trip tests that are applied to the trips on any given route before the whole route can be tested for Schedule Adherence.

On-Time Test for Scheduled Departure Trips: To be considered on-time, any trip with a leading headway scheduled for 10 minutes or more must meet all of the following criteria:

- The trip must start between 0 minutes before and 3 minutes after its scheduled departure time.
- The trip must leave the route midpoint(s) between 0 minutes before and 7 minutes after its scheduled departure time (midpoints are calculated only for routes on which the data are collected using CAD/AVL).
- The trip must arrive at its destination between 3 minutes before and 5 minutes after its scheduled arrival time.

On-Time Test for Walk-Up Trips: To be considered on-time, any trip with a leading headway scheduled for less than 10 minutes must meet all of the following conditions:

- The trip must start within 25% of its scheduled headway (but not necessarily within 25% of its scheduled departure time). For example, if "trip A" is scheduled to start at 7:30 AM and the route's next trip "trip B" is scheduled to start

at 7:38 AM, trip B has an 8-minute scheduled headway. Therefore, trip B must start 6 to 10 minutes after trip A actually starts to be considered on time.

- The trip must leave the midpoint(s) within 50% of its scheduled headway (midpoints are calculated only for routes on which the data is collected using CAD/AVL). Continuing the above example, if trip B is scheduled to leave a midpoint 8 minutes after trip A is scheduled to leave it, then trip B must leave the midpoint 4 to 12 minutes after trip A actually departs the midpoint to be considered on time.
- The trip's running time must be within 20% of its scheduled running time. Continuing the above example, if trip B is scheduled to take 30 minutes from the beginning of the route to the end, the actual trip time must be 24 to 36 minutes to be considered on time.

2. **Bus Route Test:** The second part of the Bus Schedule Adherence Standard determines whether or not a route is on-time, based on the proportion of trips on the route that are on-time over the entire service day (regardless of which types of trips they are).

- **On-Time Test for a Bus Route:** For a Bus Route to be considered on time, 75% of all trips on the route (in both directions) over the entire service day must pass their trip on-time tests.

The first trip of the day, which does not have a leading headway, is considered a scheduled departure trip.

LIGHT RAIL AND HEAVY RAIL SCHEDULE ADHERENCE STANDARDS

As with frequent bus services, passengers on light rail and heavy rail do not rely on printed schedules, but expect trains to arrive at prescribed headways. Therefore, schedule adherence for light rail and heavy rail is measured similarly to the way in which frequent bus service is measured. The percent of individual trips that are on-time is calculated, based on a measure of how well actual headways correlate to scheduled headways. In addition, the percent of trip times that correspond to scheduled trip times is measured.

Two different measures are used to evaluate headway performance. For surface light rail and heavy rail, Schedule Adherence is measured based on the percent of trips that operate within 1.5 scheduled headways. For example, a trip with a 4-minute headway would be considered late if the observed headway were greater than 6 minutes (1.5 x 4 minutes). Because the headways in the core area for light rail are less than 2 minutes, schedule adherence is measured by the percent of trips with headways less than 3 minutes. Table 3-11 provides a summary of the schedule adherence standards for light rail and heavy rail services.

TABLE 3-10

Summary of Bus Schedule-Adherence Standards			
Trip Test	Beginning of Route	Mid-Route Time Point(s)*	End of Route
Scheduled Departure Trips (Headways ≥10 minutes)	Start 0 minutes early to 3 minutes late	Depart 0 minutes early to 7 minutes late	Arrive 3 minutes early to 5 minutes late
Walk-up Trips (Headways <10 minutes)	Start within 25% of scheduled headway	Leave within 50% of scheduled headway	Running time within 20% of scheduled running time
Route Test	For any given bus route to be in compliance with the Schedule Adherence Standard, 75% of all trips must adhere to the above measures over the entire service day.		

*For Schedule Adherence, midroute time points will be used only for routes on which the on-time performance data has been collected using CAD/AVL equipment.

Exceptions:

- Express routes that serve only two points do not have a midpoint. Other routes must have at least one midpoint. The MBTA will add additional time points to certain routes based on their distance, running time and frequency.
- A schedule may note that certain trips will not leave until another vehicle arrives and allows passengers to transfer. (For instance, the last bus trip of the day might wait for passengers from the last train of the day.) When applying the standard to these trips the scheduled departure, midpoint and arrival times may be shifted forward by the amount of time the bus had to hold for connecting passengers.
- If a series of trips alternate 9- and 10-minute headways, they may all be considered walk-up trips.

TABLE 3-11

Schedule-Adherence Standards for Light Rail and Heavy Rail		
Mode	Headway Performance	Trip Time Performance
Light Rail–Surface	85% of all trips operated within 1.5 scheduled headways over the entire service day.	95% trips operated within 5 minutes of scheduled total trip time over the entire service day.
Light Rail–Subway	95% of all service operated with headways less than 3 minutes over the entire service day.	95% of all trips operated within 5 minutes of scheduled trip time over the entire service day.
Heavy Rail	95% of all trips within 1.5 headways over the entire service day.	95% of all trips operated within 5 minutes of scheduled trip time over the entire service day.

COMMUTER RAIL AND FERRY/COMMUTER BOAT SCHEDULE ADHERENCE STANDARDS

The schedule adherence standards for commuter rail and ferry/commuter boat measure the percent of trips that depart/arrive within five minutes of scheduled departure/arrival times. These standards reflect the long distances and wide station spacing of commuter rail, and the absence of intermediate stations on most boat services. Table 3-12 shows the schedule adherence standards for commuter rail and ferry/commuter boat services.

TABLE 3-12

Schedule-Adherence Standards for Commuter Rail and Ferry/Commuter Boat	
Mode	Standard
Commuter Rail	95% of all trips departing and arriving at terminals within 5 minutes of scheduled departure and arrival times
Ferry/Commuter Boat	95% of all trips departing and arriving at ports within 5 minutes of scheduled departure and arrival times

Documentation of Policies for Transit Amenities

[FTA C 4702.1 III. 3.a (2.d)]

Standards for monitoring Title VI compliance for the distribution of transit amenities—including the supply of parking, the placement and condition of bus shelters, and the maintenance of elevators and escalators—are governed by various MBTA policies and/or guidelines, as discussed below.

Supply of Parking

While the supply of parking is only one element of transit access, it is particularly important in the commuter rail system, where 54% of users drive to stations to access service. Through the Program for Mass Transportation, the MBTA applied evaluation criteria prioritizing capital improvement parking programs. The evaluation standards are:

- Customer access – Quality of auto access to the station parking lot from major arterial roadways
- Land/air rights – MBTA ownership of (or access to) land and/or area rights for expansion of the parking facility
- Projected demand – Magnitude of expected future demand for parking at the station
- Potential utilization – Ability of potential parking expansion to meet the needs of

projected demand

- Cost per parking space – Expected cost per parking space, in either a surface lot or garage
- Environmental status – Barriers to parking expansion resulting from existing environmental issues
- Ease of construction – Barriers to parking expansion resulting from space constraints, land acquisition issues, challenging terrain, etc.

Bus Shelter Placement Policy

The MBTA’s shelter placement policy that was used for the analysis in this report was adopted in December 1984. The purpose of the 1984 policy was to document procedures for evaluating and responding to requests for shelters, as historically the MBTA did not maintain a large inventory of shelters and generally placed shelters upon request rather than proactively identifying potential shelter locations. The guidelines for shelter placement found in the 1984 policy are as follows:

The placement of shelters will consider based on three major factors: the number of boarding and/or transferring passengers at a specific stop, the frequency of service at a stop, and the percentage of elderly and handicapped persons using routes which pass the stop.

- Stops with a minimum of 100 or more boardings and/or transferring passengers during a typical weekday shall be considered eligible for bus shelters.
- Table 3-13 shows the guidelines for establishing priorities in the placement of shelters.

TABLE 3-13

Bus Shelter Priority Guide			
Bus, Trackless Trolley, and Surface Streetcar Service			
Average Peak Period Frequency			
Total Number of Riders *	15 Min. or More	5 – 15 Minutes	5 Min. or More
300 or more	Top	Top	Top
200-299	2 nd	2 nd	3 rd
150-199	2 nd	3 rd	4 th
100-149	3 rd	3 rd	4 th

**Boarding riders throughout the course of a typical weekday*

- The feasibility of installing a shelter will be determined by site-specific physical limitations and easements. In addition, problems with excessive vandalism may be grounds for shelter removal or lower priority for shelter installation.

- d. If 15% or more of the average daily ridership of the route(s) serving a stop is composed of elderly and handicapped persons, then the location shall be considered top priority. [Although it is not stated in the policy, the MBTA has generally reduced the boarding threshold by 25% for these stops.]

The 1984 shelter policy has recently been revised to make it more easily quantifiable for purposes of Title VI analysis and to create opportunities for additional shelter placements through implementation of the MBTA's new shelter advertising program (which is discussed in more detail in Chapter 4). The revisions also remove any sections of the 1984 policy that may be inconsistent with Title VI principles, such as references to excessive vandalism being grounds for shelter removal. The updated policy was provided to the general manager for approval, in May 2005, and going forward, it is anticipated that all Title VI analyses for shelter placements will use the new policy.

Bus Shelter Condition

In addition to efforts to provide shelters at high-ridership bus stops and distribute them in an equitable manner among minority and nonminority neighborhoods, MBTA Operations Support also strives to ensure that shelters are accommodating to passengers both in their appearance and as protection from the elements. To this end, CTPS conducts inspections and classifies shelters into one of three categories: good, marginal, or poor. These classifications are described in greater detail below. Any MBTA shelters that do not qualify as being in "good" condition after an inspection are entered into Operations Support's Maintenance Control Reporting System for repair and/or cleaning.

GOOD CONDITION

Shelter appears to be clean with only typical wear and tear. No safety issues exist and the shelter is in good structural condition. No corrective action is required or recommended.

MARGINAL CONDITION

Shelter is safe for passenger use and is in good structural condition. However, it appears unkempt and/or has substantial buildup of dirt or trash. Examples of such negative characteristics include:

- Considerable residue on panels from cleanup of multiple incidents of graffiti
- Benches with noticeable oxidization or dirt buildup that discourages passengers from being seated
- Clear indications that the shelter has not been cleaned for a long period of time, such as the presence of multiple pieces of decaying trash or heavy buildup of road debris

Immediate corrective action is not required for continued passenger use, but it is recommended that it be done as soon as possible.

POOR CONDITION

Shelter is unsafe and or unacceptable for passenger use because of unsanitary conditions or structural degradation. Examples of such negative characteristics include:

- Missing side or roof panels
- Substantial graffiti on side panels or benches that have not been cleaned
- Physical damage to structural supports caused by gross vandalism, an automobile accident, or other heavy impact

Immediate corrective action is necessary for continued passenger use.

Elevators and Escalators

The Massachusetts Bay Transportation Authority contracts for the complete maintenance; service testing and inspection of all transit system and facility elevators and escalators.

There are 165 escalators and 110 elevators in operation for a total of 275 pieces of equipment under this contract. During the past five years, this equipment has been maintained by KONE Inc. in accordance with an all-inclusive contract. This contract, one of the largest conveyance system contracts issued in the Commonwealth of Massachusetts, expired in December 2004. KONE is currently operating under an interim extension pending the outcome of contract negotiations based on bid proposals received in the recent procurement.

New equipment is introduced to the transit system via the Design and Construction Department. Elevators and escalators are included as part of Design and Construction's overall station modernization and improvement program. Over the next five years, the Design and Construction Department will add approximately 50 pieces of these types of equipment into the transit system.

The MBTA's Maintenance Control Center (MCC) tracks all elevator and escalator service requests. Service requests are transmitted via MBTA personnel and field inspectors to the MCC, which then transmits the information to the elevator/escalator maintenance contractor via a computer terminal. The maintenance contractor then dispatches maintenance personnel to perform repairs.

ELEVATORS

Elevator service is a vital component of commuting for MBTA passengers. Elevators not only provide conveyance for all passengers, but also are a vital component in ensuring accessibility for persons with disabilities. Availability is critical, and consequently a proactive maintenance program is necessary to keep equipment safe and operational.

Elevator maintenance is specified in time intervals, for both traction and hydraulic elevators, that include biweekly, monthly, quarterly, semiannual, and annual checks and

inspections. The MBTA has nine traction elevators in operation. Maintenance tasks, checks, and inspections are detailed and specific and are meant to be minimum requirements. Maintenance tasks are comprehensive and repetitive over the various intervals to ensure that all equipment components are given the proper attention to minimize costly and time-consuming repairs.

ESCALATORS

The MBTA moves nearly one million passengers per day. A significant number of passengers use station escalators during their commute. Equipment is subject to intense passenger loads as passengers alight from train cars and exit stations. The MBTA's riding public is quick to inform the MBTA's general manager, the customer service departments, and other management personnel when equipment malfunctions or service is delayed for brief or extended periods of time. Accordingly, the specifications are defined to cover all equipment components.

Escalator maintenance is specified in time intervals that include weekly, biweekly, monthly, semiannual, and annual checks and inspections. The requirements are minimum requirements and are comprehensive and repetitive in nature to minimize costly and time-consuming repairs.

Transit Access

[FTA C 4702.1 III. 3.a (2.e)]

The MBTA's coverage guidelines, which are used for monitoring Title VI compliance for transit access, are found in the MBTA's *Service Delivery Policy*. As discussed in the Vehicle Load and Vehicle Headway sections above, changes to the service standards in the *Service Delivery Policy* are reviewed by the public and approved by the MBTA Board of Directors before being implemented.

When the *Service Delivery Policy* was recently revised, minor changes were made to the Coverage Guidelines to clarify that they applied only to the MBTA's urban fixed-route transit service area instead of the entire service district. These changes were made to reflect the 1999 amendment to the MBTA's enabling legislation, which enlarged the MBTA district to include all municipalities served directly by commuter rail or bordering another municipality so served. If the coverage analysis were to be performed on this entire new district instead, the portion of "unserved" areas in nonminority neighborhoods would have increased dramatically due to the inclusion of rural and sparsely developed suburban areas not suitable for urban fixed-route service. The following are the guidelines for coverage as they appear in the 2004 update of the *Service Delivery Policy*.

Coverage Guidelines

An important aspect of providing the region with adequate access to transit services is the geographic coverage of the system. Coverage is expressed as a guideline rather than a standard, because uniform geographic coverage cannot always be achieved due to constraints such as topographical and street network restric-

tions. In addition, coverage in some areas may not be possible due to the infeasibility of modifying existing routes without negatively affecting their performance.

The Coverage Guidelines are established specifically for the service area in which bus, light rail, and heavy rail operate, as riders most frequently begin their trips on these services by foot. Because commuter rail is usually accessed via the automobile, the coverage guidelines do not apply in areas where commuter rail is the only mode provided by the MBTA [see Table 3-14].

TABLE 3-14

Coverage Guidelines	
<i>Service Days</i>	<i>Minimum Coverage</i>
Weekdays & Saturday	Access to transit service will be provided within a .25-mile walk to residents of areas served by bus, light rail, and/or heavy rail with a population density of greater than 5,000 persons per square mile.
Sunday	On Sunday, this range increases to a .5-mile walk.



CHAPTER 4

Assessment of Compliance

[FTA C4702.1 III.3.a (3)]

PROCEDURES FOR ACHIEVING AND ASSESSING COMPLIANCE AND ESTABLISHING INTERNAL GUIDELINES

[FTA C4702.1 III.3a (3a-b)]

The FY 2003 Triennial Review Final Report prepared by FTA indicated that the “MBTA must implement a program to monitor the level and quality of service to ensure that Title VI requirements are being met.” Historically, the Authority had completed Title VI monitoring only in the context of preparing its Title VI Assessment of Compliance Report every three years. The MBTA is now implementing a Title VI Monitoring and Evaluating Plan that revises past procedure and institutes a system of ongoing assessments of compliance for level of service and quality of service. The following sections discuss the Title VI monitoring requirements, the MBTA’s new Title VI monitoring procedures, and the specific tasks that will be implemented to complete the monitoring process.

To develop the MBTA’s Title VI monitoring procedures, an internal Title VI Working Group was formed. This group currently includes representatives from each of the departments that are involved in the Title VI level- and quality-of-service compliance assessments and has been instrumental in developing this Title VI report. The Title VI Working Group continues to meet on a regular basis, and the structure and membership have been refined as needed. Going forward, the group will continue to oversee implementation of the Title VI monitoring procedures to ensure that the following occur on a regular and timely basis:

- Completion of regular Title VI compliance assessments, based on the schedules presented in this Title VI Compliance Program
- Development of plans to correct Title VI problems that may be discovered through regular compliance assessments
- Implementation of such corrective plans

Title VI Monitoring Requirements

Chapter III §3a[2] of the Title VI Circular (FTA C 4702.1), entitled *Service Standards and Policies*, requires that transit systems establish transit service policies and standards for five transit service indicators: 1) Vehicle Load; 2) Vehicle Assignment; 3) Vehicle Headway; 4) Distribution of Transit Amenities; and 5) Transit Access. Policies and standards/guidelines for three of the five Title VI transit service indicators—Vehicle Load, Vehicle Headway and Transit Access—are established through the Service Delivery Guidelines in the MBTA’s *Service Delivery Policy*, as indicated in Table 4-1 below.

TABLE 4-1
Title VI Service Indicators

Service Indicators	MBTA Service Delivery Guidelines
Vehicle Load	Loading Standard
Vehicle Headway	Frequency of Service Standard & Schedule Adherence Standard
Transit Access	Coverage Standard

The other two Title VI service indicators—Vehicle Assignment and Distribution of Transit Amenities—are not covered by the *Service Delivery Policy*, but are governed by other MBTA policies and/or guidelines.

Chapter III §3a[3] of the Title VI Circular (FTA C 4702.1), entitled *Assessment of Compliance by Grantees*, further requires that transit agencies “conduct periodic compliance assessments to determine whether the transit service provided to minority communities and minority users is consistent with the objectives cited in Chapter I” of the Title VI Circular. In addition, Chapter IV, §2c requires that grantees develop and implement Monitoring Procedures to assess the level-of-service compliance for each of the five service indicators using the procedures defined in the Title VI Circular, Chapter IV, §2c[1][a-e]. Monitoring procedures must also be developed and implemented to assess the quality-of-service compliance using the procedures defined in the Title VI Circular, Chapter IV, §2c[2][a-e].

MBTA Title VI Monitoring Procedures

The following two tables present the framework for the Title VI monitoring procedures that the MBTA will implement to complete additional periodic level-of-service and quality-of-service compliance assessments as outlined in FTA C4702.1. The subsequent text discusses the details of how each department will implement these procedures and perform the assessments of compliance for which it is responsible. It is anticipated that resources and staff of the Central Transportation Planning Staff (CTPS) will continue to be used in ongoing data collection and archiving—especially for buses and trackless trolleys and in performance/compliance assessment updates for all modes.

TABLE 4-2
MBTA Title VI Level-of-Service Monitoring

Service Indicator	Department(s) Responsible	Planned Frequency of Compliance Assessments
Vehicle Load		
Bus	Service Planning	Every 2 years
Heavy rail & light rail	Subway Operations	Every 2 years
Commuter rail	Railroad Operations	Every 2 years
Vehicle Headway		
Bus	Service Planning	Every 2 years
Heavy rail & light rail	Subway Operations	Every 2 years
Commuter Rail	Railroad Operations	Every 2 years
Transit Access		
All modes	Service Planning	Every 2 years
Vehicle assignment		
Bus age, type and air conditioning/heating	Bus Operations	Annually
Heavy rail & light rail	Subway Operations	Annually
Commuter rail	Railroad Operations	Annually
Distribution of Transit Amenities		
Bus shelters – condition	Operations Support/ Long-Range Planning/ Service Planning	Annually
Bus shelters – distribution	Operations Support & Long-Range Planning	Ongoing/ Monthly Update
Station escalators	Operations Support & Long-Range Planning	Annually
Station elevators	Operations Support & Long-Range Planning	Annually
Station parking & utilization	Long-Range Planning	Annually

TABLE 4-3
MBTA Title VI Quality-of-Service Monitoring

Travel Pattern Analysis	Department Responsible	Planned Frequency of Compliance Assessments
All modes	Service Planning	Every 2 years

Service Planning Title VI Monitoring Procedures

As indicated in Tables 4-2 and 4-3 above, for the purposes of monitoring Title VI compliance, the Service Planning Department will perform the level-of-service assessments for vehicle load and vehicle headway for all bus services, as well as the level-of-service assessment of transit access for all modes. Service Planning will also perform the quality-of-service assessment for all modes. These assessments will be completed as a part of the MBTA’s regular service planning process described below.

LEVEL OF SERVICE: VEHICLE LOAD AND VEHICLE HEADWAY FOR BUS

Through the regular service planning process, the Service Planning Department evaluates the performance of all bus routes in relation to the Authority's *Service Delivery Policy* service standards, which include the FTA service indicators for vehicle load and vehicle headway. This analysis is performed using data collected on a regular basis by CTPS. In keeping with the *Service Delivery Policy*, minor service changes are made routinely in response to changes in service demand, whereas major changes can only be made through a Service Plan. Every two years, all bus routes (with the exception of those that were subject to major restructuring in the previous Service Plan) are evaluated through a comparative analysis for all of the service standards in the policy. Based on this analysis, proposed changes to existing services, as well as suggestions for new services, are compiled into a Preliminary Service Plan. The goals of the Service Plan are to bring all routes into compliance with the service standards to meet changing demands for transit services. The draft plan is presented to the public in a variety of ways, including public meetings and hearings. Based on public input, additional service changes may be made before the final recommendations are compiled, approved, and implemented.

To meet the Title VI level-of-service monitoring requirements for bus vehicle load and bus vehicle headway, the Service Planning Department has added Title VI assessment of compliance analysis of these two service indicators to the service planning process. The analysis is completed in accordance with the methodology prescribed in Chapter IV, §2c[1](a-e).

Service Planning completes the level-of-service compliance analysis for bus vehicle load and bus vehicle headway before the release of each Preliminary Service Plan. After engaging in a community outreach process and making Service Plan refinements based in part on public comment, Service Planning completes the level-of-service compliance analysis for bus vehicle load and bus vehicle headway again prior to the adoption and implementation of final recommendations.

LEVEL OF SERVICE: TRANSIT ACCESS FOR ALL MODES

The level-of-service compliance assessment for transit access for all modes is completed by CTPS through the generation of maps. This formal analysis is performed at the end of each service planning process. However, on a quarterly basis, as minor and moderate changes are made to MBTA services, attention will be given to the transit access maps from the previous compliance assessment. The transit access maps are also consulted during development of future Preliminary Service Plans. Thus, even though the formal assessment of compliance analysis is completed only at the end of the service planning process, any potential Title VI transit access problems should already have been discovered and addressed by that time.

QUALITY OF SERVICE: ALL MODES

The Title VI quality-of-service compliance assessment (which looks at all modes) has also become a regular part of the service planning process. As with the level-of-service

assessment for transit access, the analysis for quality of service is completed by CTPS (in accordance with the procedures outlined in Chapter IV, §2.c.[2][a-e]). This assessment occurs at the end of the service planning process. If inequities are found through the quality-of-service analysis, they are corrected before the proposed service changes from the Service Plan are implemented.

Bus Operations Title VI Monitoring Procedures

LEVEL OF SERVICE: BUS VEHICLE ASSIGNMENT

For the purposes of monitoring Title VI compliance, the Bus Operations Department will perform the level-of-service assessment for bus vehicle assignment. This will be accomplished on an annual basis and will evaluate vehicle assignment based on the age and type of equipment, as well as vehicle amenities, specifically air conditioning and heating.

In general, buses are assigned to one of eight MBTA bus storage and maintenance facilities and operate only on routes served by that garage. Daily, within each garage, individual vehicles are not assigned to specific routes, but circulate among routes based on a number of operating constraints and equipment criteria.

To complete the annual bus vehicle assignment assessment of compliance for Title VI monitoring, Bus Operations will randomly select a summer day on which data will be collected from Bus Operations Pullout and Swing On sheets. These sheets display information pertaining to the operator, the bus, and the route number. From these data, Bus Operations will determine the average age of, and the presence or absence of air conditioning on, the vehicles assigned to each route. A similar review will be performed on a winter day for the purpose of determining the presence or absence of heating on vehicles.

If the data demonstrate any discrepancies that may indicate a vehicle assignment equity problem as defined by Title VI, Bus Operations will rerun the monitoring data for two days to determine whether the data analyzed on the first day was truly representative. If a consistent problem is demonstrated, Bus Operations will review both the distribution of vehicles by facility and the manner in which vehicles are assigned within facilities, to determine which appears to be the source of the problem. After review, appropriate actions will be taken to modify either the distribution of vehicles to facilities or the assignment of vehicles within facilities.

Subway Operations Department Title VI Monitoring Procedures

For the purposes of monitoring Title VI compliance, the Subway Operations Department will collect vehicle load, vehicle headway and vehicle assignment data for heavy and light rail. Using this data, CTPS will perform the level-of-service assessments of compliance for heavy and light rail for these three service indicators.

LEVEL OF SERVICE: VEHICLE LOAD AND VEHICLE HEADWAY FOR HEAVY AND LIGHT RAIL

Subway Operations currently collects data for vehicle load, vehicle headway, and vehicle assignment on a regular basis during peak periods as a part of ongoing operations planning. These data are collected by officials who observe and record the train number, vehicle load, and vehicle headway during peak periods. Subway Operations routinely uses the vehicle load and vehicle headway data to make minor changes to heavy and light rail schedules in order to adjust service to meet passenger demand.

For the purpose of periodic Title VI level-of-service monitoring for vehicle load and vehicle headway, every two years Subway Operations will compile the data collected on one sample spring weekday and submit summary data tables to CTPS, which will complete the Title VI assessment of compliance for these two service indicators for both heavy and light rail. If any aspects of the service are not in keeping with Title VI requirements, Subway Operations will report to the Title VI Working Group on measures to eliminate inequities. Subsequent analysis will be completed six months later in order to determine whether the remediation measures were sufficient.

LEVEL OF SERVICE: VEHICLE ASSIGNMENT FOR HEAVY AND LIGHT RAIL

Each of the three heavy rail lines (Red Line, Blue Line, and Orange Line) operates with dedicated equipment, which is not interchangeable among the lines. In addition, all three heavy rail lines are designated “minority transit routes” for Title VI purposes. Periodic assessments of compliance for vehicle assignment for heavy rail therefore will not be completed for Title VI.

Light rail consists of the Green Line and the Mattapan High Speed Line. The Mattapan Line operates as a short, stand-alone light rail extension of the Red Line Ashmont Branch, with a dedicated fleet that is not used elsewhere in the system. The Green Line, however, is an extensive light rail system with four branches (B, C, D, and E) that all feed into a core subway. For Title VI, the B and E Branches are classified as “minority transit routes,” and the C and D Branches, as well as the Mattapan High-Speed Line, are classified as nonminority. As a result, the assessment-of-compliance analysis for vehicle assignment for light rail is relevant for periodic Title VI monitoring. Subway Operations will, therefore, submit summary data tables for one sample spring weekday to CTPS, which will complete the Title VI assessment of compliance for light rail vehicle assignment. If any Title VI disparities are found, Subway Operations will report to the Title VI Working Group. An additional analysis will be completed six months later in order to monitor whether the remediation was sufficient to eliminate the Title VI vehicle assignment inequity for light rail.

Railroad Operations Department Title VI Monitoring Procedures

To comply with Title VI monitoring requirements, Railroad Operations will perform periodic level-of-service compliance assessments for vehicle load, vehicle headway and

vehicle assignment for all commuter rail services. As indicated previously, the MBTA's *Service Delivery Policy* specifies the Authority's criteria for vehicle load and vehicle headway for all modes (see Table 4-1).

LEVEL OF SERVICE: VEHICLE LOAD AND VEHICLE HEADWAY FOR COMMUTER RAIL

As a part of its ongoing planning process, every six months Railroad Operations evaluates the performance of commuter rail services against the MBTA's standards for vehicle load and vehicle headway. Through a contractual agreement, the commuter rail operating contractor provides the data used for this analysis. Based on the analysis, minor schedule changes are implemented to improve service in areas with a demonstrated need. Minor changes may also result from passenger suggestions forwarded to the "Write to the Top" campaign and can be accomplished by, but are not limited to: (1) adjusting schedule times, (2) increasing service with additional trips (i.e., express service), or (3) redistribution of equipment. Major service changes, such as service expansion or line extensions, require approval by the MBTA Board of Directors and capital funding prior to implementation.

To evaluate vehicle loading for planning purposes, passenger count data are reported by the operating crews and input into an electronic Operations Management System by the operating contractor. This information is independently verified on a semiannual basis. Train consist data is also input into the Management System, which calculates the number of seats available for each train and provides a report on the percent of peak seats filled by line for each trip. These reports are reviewed and analyzed twice a year by commuter rail staff in order to determine whether the peak vehicle loads exceeded the loading standard. Railroad Operations examines corrective actions that can be taken to minimize these situations. Generally, problems can be corrected with the redistribution of equipment or the addition of trips using underutilized equipment. Factors that are beyond Railroad Operation's control that may increase ridership are expansions of parking lots and major roadway projects.

Daily schedule adherence, or on-time performance (OTP), for all commuter rail trains is determined by entering their final-destination arrival times into the Operations Management System, which generates reports on the percentage of trips that operate on time for each line. Adjustments are made to these percentages for approved delays such as track outages, speed restrictions, and special events. The OTP data are evaluated twice yearly against the schedule adherence standard, and schedule adjustments are made to remediate OTP problems. However, Railroad Operations cannot always alleviate OTP problems, as some commuter rail lines operate on tracks that are owned and dispatched by other railroads.

For the purposes of Title VI monitoring, Railroad Operations will complete compliance assessments for vehicle load and vehicle headway at least once every two years in conjunction with the MBTA service Planning Process. If the assessment of the proposed

changes demonstrates inequity between minority and nonminority routes Railroad Operations will develop, within the operating constraints of commuter rail, strategies that address or eliminates Title VI deficiencies before changes are implemented.

LEVEL OF SERVICE: VEHICLE ASSIGNMENT FOR COMMUTER RAIL

Vehicle assignments are developed to meet specific characteristics of commuter rail service. These characteristics include providing minimum seating requirements for each scheduled trip, providing one functioning toilet car in each trainset, maintaining train length due to infrastructure constraints, and providing modified equipment for a specific operating environment such as the Old Colony trains with power doors. In order to optimize coach utilization and meet the train characteristics stated above, the bilevel coaches are operated on trains with the largest volume of ridership.

All coaches in the commuter rail fleet are equipped with similar amenities (such as air conditioning), with the primary variation among coaches being age. To determine the average age of a trainset, Railroad Operations looks at consist utilization summary reports. For the purposes of periodic Title VI level-of-service monitoring, an assessment of compliance for vehicle assignment will be completed once each year in the spring using a sample of the consist utilization summary reports. Within the operating constraints of the commuter rail system, Railroad Operations will work to alleviate any Title VI vehicle assignment disparities found in the analysis.

Operations Support Title VI Monitoring Procedures

LEVEL OF SERVICE: DISTRIBUTION OF TRANSIT AMENITIES – BUS SHELTERS; STATION ESCALATORS AND ELEVATORS

For the purpose of Title VI monitoring, the Operations Support Department, will supply data to CTPS, MBTA Operations, and the Long-Range Planning Department for the level-of-service compliance assessment of distribution of transit amenities for bus shelters, station escalators, and station elevators.

The Operations Support Department is responsible for the oversight and maintenance of shelters and station facilities. In that capacity, it maintains records on the location of existing transit amenities and tracks the installation of new ones. On a monthly basis, Operations Support will generate a list of new shelter locations and removed shelters and forward this information for archive updating at the long-range Planning Department and CTPS. Annually the long-range Planning Department through CTPS will schedule field assessments to also monitor shelter condition with respect to Title VI guidelines. Data on station escalator and elevator maintenance and operation hours will continue to be recorded daily by Operations Support. Planning and CTPS will annually review and analyze distribution and maintenance of shelters, escalators, and elevators with respect to Title VI guidelines.

As installation of shelters expands, Operations will work with the shelter vendor and communities to identify priority shelter locations, including sites in minority areas.

Operations will monitor and approve siting of new shelter locations on an on-going basis to maintain compliance with Title VI. Inequities in shelter maintenance will be reported by CTPS to Operations Support for immediate corrective action.

If noncompliance with Title VI requirements is found in the number or maintenance of escalators or elevators in minority stations, the Title VI Working Group will identify a plan for future remediation in maintenance operations and/or physical planning.

Planning Department Title VI Monitoring Procedures

LEVEL OF SERVICE: DISTRIBUTION OF TRANSIT AMENITIES – STATION PARKING

For the purpose of Title VI monitoring, the Long-Range Planning Department will complete the level-of-service compliance assessment of the distribution of transit amenities for station parking. If inequities are found in the parking supply, the Title VI Working Group will work in conjunction with Planning and other relevant MBTA departments to seek to identify a plan for future remediation, in view of the numerous feasibility, spatial, and other constraints at MBTA stations.

SYSTEMWIDE CHANGES AND PROPOSED IMPROVEMENTS

[FTA C4702.1 III.3a (3c)]

Documentation of Systemwide Changes and Proposed Improvements

This section of the Title VI guidelines requires the evaluation of systemwide service changes and proposed improvements at the planning and programming stages to determine whether the overall benefits and costs of such changes or improvements are distributed equally and are not discriminatory.

Fare Policy

The MBTA, as with all other major transit authorities, experienced revenue shortfalls resulting from the 2001–2003 economic slowdown. Responding to the budget gap, the MBTA was required to increase fares in early 2004. The public process for review of the fare proposal was conducted in 2003, and that process included an equity analysis that informed the final proposal adopted by the MBTA Board of Directors.

Based on input from the public process and the equity evaluation, the original fare proposal was adjusted so that burdens of a fare increase were not disproportionately placed on minority/low-income customers. Adjustments included:

- Restraining the local bus fare increase to \$.90 instead of the \$1.00 originally proposed
- Redesignating fare zones of urban stations at Worcester, Fitchburg, and North Leominster
- Increasing the price of visitor passes

- Basing the price of the commuter rail 12-ride ticket on 12 trips
- Continuing the free bus-to-bus transfer pilot program

In addition, process commitments made in the fare-change process were designed to advance equity and service goals. Those commitments included establishing the Rider Oversight Committee (ROC) which meets monthly to discuss customer service improvements and advise MBTA senior managers on service quality issues. The ROC is currently helping the MBTA to re-write its fare policy, which will expire within 90 days of systemwide implementation and operation of the MBTA's automated fare collection system (anticipated for early 2007). The ROC is also working with the MBTA to restructure fares to take advantage of the automated fare collection system and to make the fare structure easier to understand and use while recognizing the needs of minority and low-income riders.

Systemwide Improvements

Service improvements committed to by the MBTA during the fare restructuring process included:

- Operating more two-car trains on the Green Line branches later in the evening
- Instituting commuter rail improvements, including express service on the Fitchburg Line
- Improving the reliability of bus service by increasing supervision on targeted routes
- Increasing the frequency of service on certain bus routes

Service Plan

Systemwide service changes for bus are considered through the service planning process for the Biennial Service Plan. Through this process, data collected on MBTA bus services are compared against the service standards found in the *Service Delivery Policy* to determine whether or not individual existing services perform at acceptable levels and, if not, to identify needed service changes. The service planning process also compares the performance of existing services with proposed new or extended services.

Because the overall levels of funding for the operation of service are determined through the annual budget process, changes made through the Service Plan are incremental and are designed to be resource neutral. In other words, the Service Plan reallocates resources within the fixed operating budget to improve the efficiency of the service, without increasing the cost. A significant increase in the operating budget would generally occur only with the addition of a major new service, such as the Silver Line. This type of addition would be developed outside of the Service Plan.

The ongoing monitoring for Title VI that is completed in the context of the service planning process (as described earlier in this chapter) ensures that the benefits of any redistribution of operating costs in the Service Plan are equitably distributed and are not discriminatory.

Systemwide Capital Improvements

The MBTA plans and prioritizes capital improvements through public processes of the Program for Mass Transportation (a long-range plan required to be updated every five years, most recently adopted in 2003) and the Capital Investment Program (a five-year capital budget programming document adopted annually). These processes are coordinated with the planning and programming functions of the Boston Region MPO through the 25-year Regional Transportation Plan (updated every three years, most recently in 2003) and the Transportation Improvement Program (updated every year), which programs surface transportation projects, including federally funded transit.

Equity and environmental justice considerations are among the criteria used in evaluating plans and projects. Through the MPO process, the MBTA participated in environmental justice planning that included regional transportation system equity analyses.

Systemwide capital improvements planned and programmed with particular equity implications include:

STATION MANAGEMENT INITIATIVE

Planned implementation of the automated fare-collection system will allow the Authority to improve customer service and advance service equity goals by:

- Reassigning fare collectors as customer service agents who will monitor stations, gather real-time information on the condition of station amenities, provide information to customers, and assist elderly and disabled riders and Limited-English-Proficiency beneficiaries.
- Upgrading station management and security through the use of enhanced critical-system monitoring and closed-circuit television coverage.
- Monitoring fare compliance.
- Enabling implementation of alternative pricing structures (possibly including peak/off-peak pricing) and discounted bus-rail transfers. MBTA management has committed to working with the Rider Oversight Committee in this effort and in the effort to complete the Station Management Initiative as a whole.

BUS SYSTEM IMPROVEMENTS

The MBTA has focused on bus system improvements as a strategic priority. The MBTA's bus service district covers over 50 communities, with service concentrated in the inner core.

Elements of the comprehensive program of bus service improvements are:

- Continued upgrades of Silver Line service on Washington Street, including introduction in 2003–2004 of 60-foot NeoPlan articulated CNG buses, equipped with low floors for easy boarding, “smart” location message signs, and audio announcements.

- By the end of 2004, 91 new, state-of-the-art, low-emission buses were in service, reducing the average age of the fleet from 14 years to 4 years. The policy goal is to maintain a bus fleet procurement plan designed to keep the average age of the fleet below 8 years.
- The entire bus fleet has been converted to run on CNG or Ultra Low Sulfur diesel fuel.
- Rebuilt, cleaner-burning engines have been installed on all 1994–1995 buses along with diesel particulate filters.
- Bus idling control measures are being implemented to prevent bus idling in excess of five minutes.
- An emissions-related bus inspection and maintenance program is underway to keep the buses clean in both the short term and the long term.
- A bus emissions monitoring and control program is being established. MBTA consultants M. J. Bradley and Associates Inc. and Environmental Systems Products conducted a week-long study of MBTA bus exhaust emissions in June 2004 at the Charlestown and Cabot bus garages. Several state-of-the-art technologies, including remote sensing devices, opacity meters, and onboard exhaust analyzers, were used to measure pollutant levels in tailpipe exhaust. These pilot demonstrations evaluated about 400 buses (40% of the fleet). The results: 98% of the fleet exhibited optimal emissions characteristics, and 2% were flagged for additional diagnostics and corrective actions. By the end of 2005, the MBTA plans to have a permanent inspection program in place that will allow all buses in service to be tested and evaluated on a regular basis.

BUS MAINTENANCE FACILITIES

Among constraints faced by the MBTA in upgrading bus services has been the condition of its maintenance facilities, most of which date to the 1930s or earlier. The MBTA is implementing a phased program to upgrade these facilities. Elements include:

- Closing of Bartlett garage, located in Roxbury, and construction of the Southampton garage, completed in 2004
- Construction of the temporary Arborway facility, with planning/design work slated for a permanent facility
- Planning and site selection for a north-side maintenance facility that would enable closure of the outdated Fellsway garage, relieve overcrowding at the Charlestown garage, and allow scaling back on use at the inefficient Lynn garage. Site selection criteria included environmental justice impacts, operating efficiencies, and neighborhood impacts. These resulted in a preferred site for the project at Wellington Station.

CONDUCT COMPLIANCE ASSESSMENTS OF TRANSIT SERVICES AND BENEFITS

[FTA C4702.1 III.3a (3d)]

VEHICLE LOAD AND VEHICLE HEADWAY

Documentation of Vehicle Load and Headway for Buses and Trackless Trolleys

As a part of the ongoing service planning process, the MBTA now performs the applicable Title VI compliance assessments on the biennial service plan to ensure that implementation of the plan does not create discrimination against minority populations. For the 2004 Service Plan, the Service Planning Department completed level-of-service assessments for vehicle load and vehicle headway (frequency of service and schedule adherence) for bus and trackless trolley services. The results of this analysis were reported in the MBTA’s March 2005 Title VI Quarterly Report.

When major service changes are implemented through a Service Plan, the affected routes are not evaluated in the next Service Plan, but in the one subsequent to it. This allows the public to learn about and begin to use new services before their performance is analyzed and considered for possible corrective measures. As a result, the 2004 Service Plan and its Title VI analysis did not include the Lynn bus routes, which had undergone extensive restructuring in the 2002 Service Plan.

New data have now been included for the Lynn routes, and the Title VI analysis for vehicle load and headway for bus and trackless trolley has been recalculated based on the Lynn data, in addition to the 2004 Service Plan service changes. The following table shows the performance of the minority bus and trackless trolley routes compared to the performance of all bus and trackless trolley routes for vehicle load and vehicle headway.

TABLE 4-4

		Service Indicator	Weekday	Saturday	Sunday
Minority Bus Routes	Vehicle load		92%	93%	88%
	Scheduled frequency		88%	96%	94%
	Schedule adherence		13%	5%	13%
All Bus Routes	Vehicle load		92%	90%	85%
	Scheduled frequency		80%	87%	88%
	Schedule adherence		14%	6%	10%

As can be seen in the table, minority routes outperform the system as a whole for all measures, except for schedule adherence. As can also be seen, however, the schedule adherence of all routes appears to be very poor. Although this shows that schedule

adherence needs to be improved, the exceptionally low level of performance is also an artifact of the schedule adherence standard. As indicated in Chapter 3, this standard has since been revised to make it more meaningful for differentiating between routes with minor schedule adherence issues and ones with major problems.

Documentation of Vehicle Load and Headway for the Green Line

Vehicle Loads for Green Line

Green Line trains were observed inbound at Copley Station and outbound at Arlington Station between 6:00 AM and 9:00 PM on March 28, 2005 and March 29, 2005. The Mattapan High Speed Line was observed inbound and outbound at Ashmont Station on March 28, 2005, and March 29, 2005.

Vehicle load standards for light rail, as defined in the *Service Delivery Policy*, allow for loads equal to 225% of the seated capacity in the Early AM, AM Peak, Midday School, and PM Peak periods. During all other time periods (Midday Base, Evening, Late Evening, Night/Sunrise, and Weekends) loads in the core area should not exceed 140% of seated capacity.

Using a five-point rating system, with “1” equal to an empty train and “5” equal to full crush load, the average observed load for all Green Line branches and the Mattapan High Speed Line during the peak periods of both days combined was 2.8. During the off-peak period, the average load was 2.3.

For minority branches, the average peak load was 3.0, while for all branches it was 2.9. The average off-peak load for minority branches was 2.5, while the average load for all branches was 2.4. Since the 225% load factor allowed during peak periods equates roughly to an observed load rating of 4, and the 140% load factor allowed during the off-peak period equates roughly to an observed load rating of 3, neither the minority branches nor nonminority branches exhibit violations of the vehicle load standard. Furthermore, the loading on minority branches is comparable to the loading on all Green Line branches.

Vehicle Headway for Green Line

Light-rail-surface schedule adherence policies call for 85% of all trips to operate at intervals less than or equal to 1.5 times the scheduled headway (headway being the scheduled times between trains). For all time periods, 89% of all light-rail trips were operated within 1.5 times the scheduled headway. For “minority routes,” 85% of trips ran within intervals of 1.5 times their scheduled headway. This is an improvement from the previous quarter (March 2005), when only 81% of trips on these routes ran on time. Adjustments made to the winter schedule helped to achieve this improvement.

It should also be noted that two of the three routes in the light-rail network classified as nonminority use/exclusive rights-of-way for their entire distance. The surface portion of the D-Riverside line was converted from a steam railroad right-of-way in 1959, while

the Mattapan High-Speed Line was converted from a steam railroad in 1928. The surface portions of both minority routes, however, are vulnerable to interference from automobile traffic. The entire Commonwealth Avenue B-line and a portion of the Huntington Avenue E-line are in center reservations, with frequent roadway grade crossings. The outer end of the Huntington Avenue E-line operates directly in the street in mixed traffic. These different operating characteristics, compared to the Riverside and Mattapan Lines, impact the ability to maintain proper headways.

The one nonminority route that also operates in a street reservation, the Beacon Street C-line, had only 84% of trips operating within intervals of 1.5 times the scheduled headway. This rate was closer to the rate found on minority routes, which have similar operating characteristics.

Conversely, the short Mattapan High-Speed Line, which is characterized as a nonminority route, had 100% of all trips operating within intervals of 1.5 times the scheduled headway. In addition to having little interference from automobile traffic, this route is isolated from the remainder of the light-rail network and is thus less vulnerable to delays from other rail cars.

With respect to scheduled headways, almost all light-rail service meets the MBTA service standards for frequency of service, as shown in Table 3-10. The only light-rail service that does not meet the frequency standards is the Mattapan High-Speed Line, a nonminority route. This route operates every 30 minutes on Sunday mornings before 10:00 AM. The route is in compliance at all other times.

Documentation of Vehicle Load and Vehicle Headway for the Red Line

Because all heavy rail lines are classified as minority, a full level-of-service assessment of compliance was not performed. However, in response to requests from the FTA Office of Civil Rights, the two branches of the Red Line were compared to each other.

Vehicle Loads for the Red Line

Northbound trains were observed at Broadway between 6:00 AM and 1:00 PM and southbound trains were observed at South Station between 1:00 PM and 9:00 PM on two days. Using a five-point rating system, with “1” equal to an empty train and “5” equal to a full crush load, the average load on a Braintree train for all observed time periods was 3.1, while the average load on the Ashmont line was 2.4.

Although there are additional trains operating on the Braintree branch during the peak period, it was still found that the average load per train on this branch exceeded those on the Ashmont line. During off-peak times, trains are scheduled evenly between both branches.

Vehicle Headway for the Red Line

Trains passing through Broadway in the AM and South Station in the PM were observed on two random days. These observations of train arrival times were then ana-

lyzed to determine if they met *Service Delivery Policy* standards for schedule adherence on rapid transit lines. These standards call for 95% of all trips to operate at intervals less than or equal to 1.5 times the scheduled headway. Neither branch met this standard. For the average of March 11 and April 5, 2005, 93% of Ashmont trains and 91% of Braintree trains operated within 1.5 times the scheduled headway. With respect to scheduled headway itself, there was little difference between branches, and both meet the MBTA service standards shown in Table 3-10.

Documentation of Vehicle Load and Vehicle Headway for Commuter Rail

The purpose of this assessment was to determine if the service provided for both minority and nonminority users is consistent with our stated objectives. For the purpose of monitoring Title VI compliance, Railroad Operations performed an assessment for vehicle load, schedule adherence, and vehicle assignment.

Vehicle Load

The MBTA commuter rail loading standard, as indicated in the *Service Delivery Policy*, is 110% of the seating capacity. This standard was increased in December 2002 from 100% to be more consistent with other modes.

Massachusetts Bay Commuter Railroad (MBCR), Railroad Operations' contract operator, utilizes an electronic rail operations management system to provide consist information and ridership details and to monitor performance. Passenger counts are reported by the train crews for each trip and are entered into the system along with consist information. This information is independently verified on a semiannual basis as required by the new operating contract. The independent audit of passenger counts is generally considered more accurate and was used for this report. This information was summarized to develop vehicle-load percentages for each peak-period train. A peak-period train is defined as a train denoted as Peak Period by shading or other means in the public timetable published by the MBTA.

The AM and PM peak-period information was collected on two occasions for the purpose of this analysis. The chart below indicates ridership on all lines is less than the *Service Delivery Policy* standard of 110%. Lines in bold are minority lines, shown in Table 4-5.

Railroad Operations has determined that no corrective action is necessary at this time. The MBTA has placed an order for 28 new, high-capacity Kawasaki coaches to support the new Greenbush service. Since projected ridership is well below the seating capacity of the new coaches, single-level coaches from existing consists will be substituted for a portion of the high-capacity coaches. This will provide Railroad Operations the flexibility to reallocate equipment to the lines with the highest reported peak loads.

TABLE 4-5

Line	Spring 2004		Fall 2004	
	AM Peak	PM Peak	AM Peak	PM Peak
Rockport	80.79%	61.03%	83.19%	62.48%
Newburyport	66.26%	68.32%	67.95%	68.76%
Haverhill	65.25%	69.61%	67.71%	65.64%
Lowell	86.23%	81.57%	81.79%	78.87%
Fitchburg	68.18%	55.69%	73.46%	61.83%
Worcester	62.93%	78.55%	64.28%	79.30%
Needham	55.51%	47.94%	56.66%	47.07%
Franklin	55.43%	59.46%	61.32%	55.91%
Attleboro	93.27%	72.72%	84.82%	66.59%
Middleboro	70.13%	75.51%	74.97%	78.92%
Kingston	73.13%	65.09%	82.88%	63.33%
Stoughton	69.18%	47.40%	68.56%	48.86%
Fairmount	13.78%	13.70%	15.59%	15.33%

Lines in bold are minority lines.

Vehicle Headway

The MBTA *Service Delivery Policy* schedule-adherence standard specifies that 95% of all trains should arrive at their final terminals within 5 minutes of scheduled arrival times. The new Commuter Rail Operating Agreement does not specifically include a standard, such as 95%, but the contract operator is subject to a penalty for any train that arrives at its final terminal more than 4 minutes and 59 seconds late.

MBCR, the MBTA’s commuter rail contract operator, collects and records the on-time performance (OTP) data for all revenue trains on a daily basis and enters it into the rail operations management system. Reports can then be generated, providing statistics on the number of trains scheduled, trains operating on time, and OTP for each day. Information was readily available for a period of 10 months from July 2003 to April 2004, and for a period of three months from July to October 2004, and was reviewed for this report.

As indicated in the chart below, only three routes met or exceeded the schedule adherence standard of 95% for the 10-month period—one minority and two nonminority lines. Five routes met or exceeded the standard of 95% for the three month period—two minority and three nonminority lines. Lines in bold type in Table 4-6 are minority lines.

The one minority line with an OTP below the system average is Attleboro. However, this line is influenced by operational constraints that do not affect most of the other lines. Although the MBTA owns all Attleboro Line track to the state line, it is dis-

TABLE 4-6

Line	7/03 – 4/04 OTP	7/04 – 10/04 OTP
Rockport	91.53%	94.44%
Newburyport	91.75%	96.03%
Haverhill	94.49%	93.85%
Lowell	96.42%	96.57%
Fitchburg	92.35%	93.96%
Worcester	89.07%	86.56%
Needham	95.69%	94.28%
Franklin	93.56%	93.75%
Attleboro	90.66%	91.80%
Middleboro	93.31%	95.66%
Kingston	93.69%	95.20%
Stoughton	93.22%	93.31%
Fairmount	96.48%	97.74%
Total system	93.26%	93.98%

Lines in bold are minority lines.

patched and maintained by Amtrak. The OTP on this line has been affected by conflicts with Amtrak trains, track outages for track repair, catenary wire failures and the implementation of the Advanced Civil Speed Enforcement System (ACSES). ACSES was mandated by the Federal Railroad Administration to be used in all territory in which Amtrak high speed trains operate, and this system was applied to all locomotives and control coaches. ACSES has had several software revisions to correct design deficiencies that have been the cause of several delays on the Attleboro Line.

Railroad Operations meets monthly with Amtrak to discuss a variety of issues concerning the service and works to develop corrective actions on specific problems that have impacted MBTA trains. Railroad Operations also communicates with Amtrak on scheduled maintenance work to minimize potential delays to MBTA trains (i.e. determining a work window for track outages). In addition, several enhancements have been made to the ACSES system by Amtrak and, as a result, the MBTA has experienced fewer delays associated with ACSES. It should also be noted that similar problems relating to third-party dispatching and conflicts with non-MBTA trains and are also experienced on the Worcester Line—a nonminority-designated route operating over tracks owned and maintained by CSX Transportation. OTP for the Worcester Line ranks the lowest of all lines—including the Attleboro Line—in both the three month period and the ten month period.

The quality of service for the minority routes is comparable to the systemwide average, with the exception of a line that has operating restrictions that are beyond the control of the Department. At this time, there are no service changes scheduled to be implemented.

VEHICLE ASSIGNMENT

Documentation of Vehicle Assignment for the Green Line and the Red Line

Green Line

Light-rail assignments by line were analyzed for two randomly chosen days in March 2005. The age of each car for each trip on all four Green Line branches and the Mattapan High-Speed Line was calculated. An average age was then generated for those lines considered “minority routes” (Green Line branches B and E) and those considered nonminority (Green Line branches C and D and the Mattapan High-Speed Line).

The average age per car-trip of light-rail equipment operated on minority routes was 12 years, while the average age for all light-rail lines was 20.4 years.

Red Line

Both branches of the Red Line are considered to be serving “minority” areas. Consequently, no official determination of comparative Title VI compliance can be made. However, at the request of FTA, the MBTA has compared both branches of the line for fleet age, schedule adherence, and loads.

Red Line rail-car assignments were collected for two random days; these data were collected, along with the load and headway data, by observing trains. The age of each car on each trip for two random days was compiled and analyzed. The average age was 21.0 years for Ashmont trains and 18.4 for Braintree. The Red Line fleet consists of 74 cars built in 1969, 58 cars built in 1988, and 86 cars built in 1994. The types of car built in 1969 and 1988 are capable of operating together in trains. The cars built in 1994 can only be operated in trains of the same car type. The average age for the entire Red Line active fleet is 20.4 years. Train assignments vary from day to day and line to line. During the days observed, if one train set of 1994-built cars in use during the midday on the Braintree Branch had been swapped with one trainset of 1969- and 1988-built cars on the Ashmont Branch, then the difference in average age for the two lines would have been only one year.

Documentation of Vehicle Assignment for Buses

Bus assignments were examined for an unusually warm day in the summer of 2004 (July 23, 2004). Pull-out sheets, which show what bus was assigned to each operator run, were used to match bus type to each trip operated. In addition, maintenance logs that day were examined to determine which buses had been flagged as having defective air-

conditioning systems. During the day of the examination, bus operators of 1994–95 built buses had been asked to radio the dispatcher if their bus had defective air-conditioning. These data were then entered into the maintenance reporting system.

Using the pull-out sheets, a bus vehicle number was matched to each trip on each route. Routes were grouped into minority and nonminority categories. An average age was then calculated for buses based on route types. The average age for the entire bus fleet observed was 8.1 years. The average age for buses operating on minority routes was 6.3. The average age for buses operating on nonminority routes was 12.0.

Based on bus number, it was then determined by trip if an assigned bus was equipped with air-conditioning, and if so equipped, if the air-conditioning system had been marked in the maintenance reporting database as defective. It was found that 85% of buses observed system wide were believed to be equipped with working air conditioners. 90% of buses on minority routes and 73% on nonminority routes were identified as having working air-conditioning.

At the time this data was collected, the MBTA's active diesel bus fleet still included vehicles built in 1985 through 1987, none of which were equipped with air-conditioning systems. These vehicles have since been retired.

No observations were made of the MBTA's trackless trolley system. At the time data was collected in July 2004, the majority of the trackless trolley vehicle fleet consisted of 1976-built vehicles, which do not have air-conditioning. Since that time, the MBTA has introduced new air-conditioned trackless trolleys. These will eventually replace the 1976-built fleet.

Documentation of Vehicle Assignment for Commuter Rail

Vehicle assignments are made to meet specific characteristics of commuter rail service as discussed in the Service Standards and Policies. All coaches in the commuter rail fleet are equipped with similar amenities, with the primary variation among coaches being age. Age is an indicator of the overall performance, reliability, and comfort of a vehicle.

The MBTA contract operator enters consist information into a rail-operations management system on a daily basis. Consist data for every train that operated on each line were collected over two days, April 13 and October 19, 2004. A consist summary report was developed to determine the average age of the equipment by line, and is summarized in the table below. Minority routes are in bold in Table 4-7.

The analysis indicates that the newer vehicles are generally assigned to the south-side operation, where all the minority routes are located. The average age of the coaches on two of the three minority lines is equal to or less than the average age for the system. Only one minority line, Fairmount, exceeded the system average. This is consistent with the present allocation of equipment, as the north-side lines and the Fairmount Line generally have lower ridership and therefore utilize the older, single-level coaches. This trend will likely continue since the MBTA is expecting delivery of 28 new bilevel coaches that will be used for south-side operations on high-ridership lines.

TABLE 4-7

Line	Division	Average Age (Years)	
		4/13/04	10/19/04
Kingston	South	8.0	7.7
Middleboro	South	8.5	8.3
Stoughton	South	12.6	12.6
Worcester	South	12.6	12.3
Attleboro	South	12.9	12.9
Franklin	South	12.9	12.8
Rockport	North	12.9	13.0
Needham	South	13.2	12.6
Lowell	North	13.4	13.6
Fairmount	South	13.6	13.4
Fitchburg	North	14.6	14.7
Newburyport	North	15.1	14.7
Haverhill	North	15.1	14.3
System average		12.9	12.9

Lines in bold are minority lines.

The MBTA strives to assign its vehicles as equitably as possible within the equipment and operational constraints of the system. Based on this analysis, Railroad Operations plans no changes to the present vehicle assignments.

TRANSIT ACCESS

To meet the MBTA's Transit Coverage guideline, in service areas with residential densities greater than 5,000 people per square mile, transit service—of any mode—should be accessible within one-quarter mile. The analysis for this report was completed measuring one-quarter mile via the street network (rather than “as the crow flies”), to realistically assess the distance that an individual might have to walk to access transit service at a bus stop or rail stop/station.

As can be seen in Table 4-8 (and Figure 4-2) below, for high-density TAZs within the Bus/RT Service area, 89% of street miles in minority areas meet the Transit Coverage guideline; however, only 81% of total street miles meet the Transit Coverage guideline. In addition, for each individual mode, the percent of street miles in minority areas is higher than, or equal to, the percent of total street miles. Lack of transit coverage in MBTA high-density service areas is generally due to operational constraints imposed by street configurations or other physical barriers. Although some high-density nonminority TAZs, such as all of Winthrop and part of Medford, as well as one minority TAZ in

Milton, appear on the map (Figure 4-2) not to have access to local transit services, these areas are provided with coverage through private contract carriers that are subsidized by the MBTA. Because these routes are not coded in the analysis, the coverage numbers in Table 4-8 appear slightly lower than the should.

**TABLE 4-8
Summary of Transit Access:
Bus /RT Service Area (all modes)**

High Density Areas (greater than 5,000/sq. mile)	All Streets			Bus Market		Rapid Transit (RT) Market		Commuter Rail Market		Transit Market All Modes	
	Length (mi.)	Length (mi.)	% of Total	Length (mi.)	% of Total	Length (mi.)	% of Total	Length (mi.)	% of Total	Length (mi.)	% of Total
Minority TAZs*	1298	1134	87%	181	14%	55	4%	1150	89%		
Non-Minority TAZs	1909	1419	74%	121	6%	66	3%	1451	76%		
Total TAZs	3208	2553	80%	302	9%	121	4%	2601	81%		

*The MBTA Bus/RT Service Area includes the 65 communities that pay the highest local assessments to the Authority..Using 2000 census data, the minority population for this area was 24.71%

Analysis was also completed for the Commuter Rail service area, excluding the Bus/RT service area discussed above. The results of this analysis (Table 4-9 and Figure 4-1) show that, in the high density TAZs that are targeted by the MBTA's Transit Coverage guideline, the percent of minority street miles within a one-quarter mile walking distance of a commuter rail station (2.7%) is comparable to the percent of total street miles within a one-quarter mile walking distance (2.8%). The overall transit access for some high-density minority TAZs in the Commuter Rail service area should actually be better than the data show, as some towns (e.g., Lawrence, Haverhill, Lowell, Worcester) are also served by local bus routes that are not a part of the MBTA system and are, therefore, not included in this analysis.

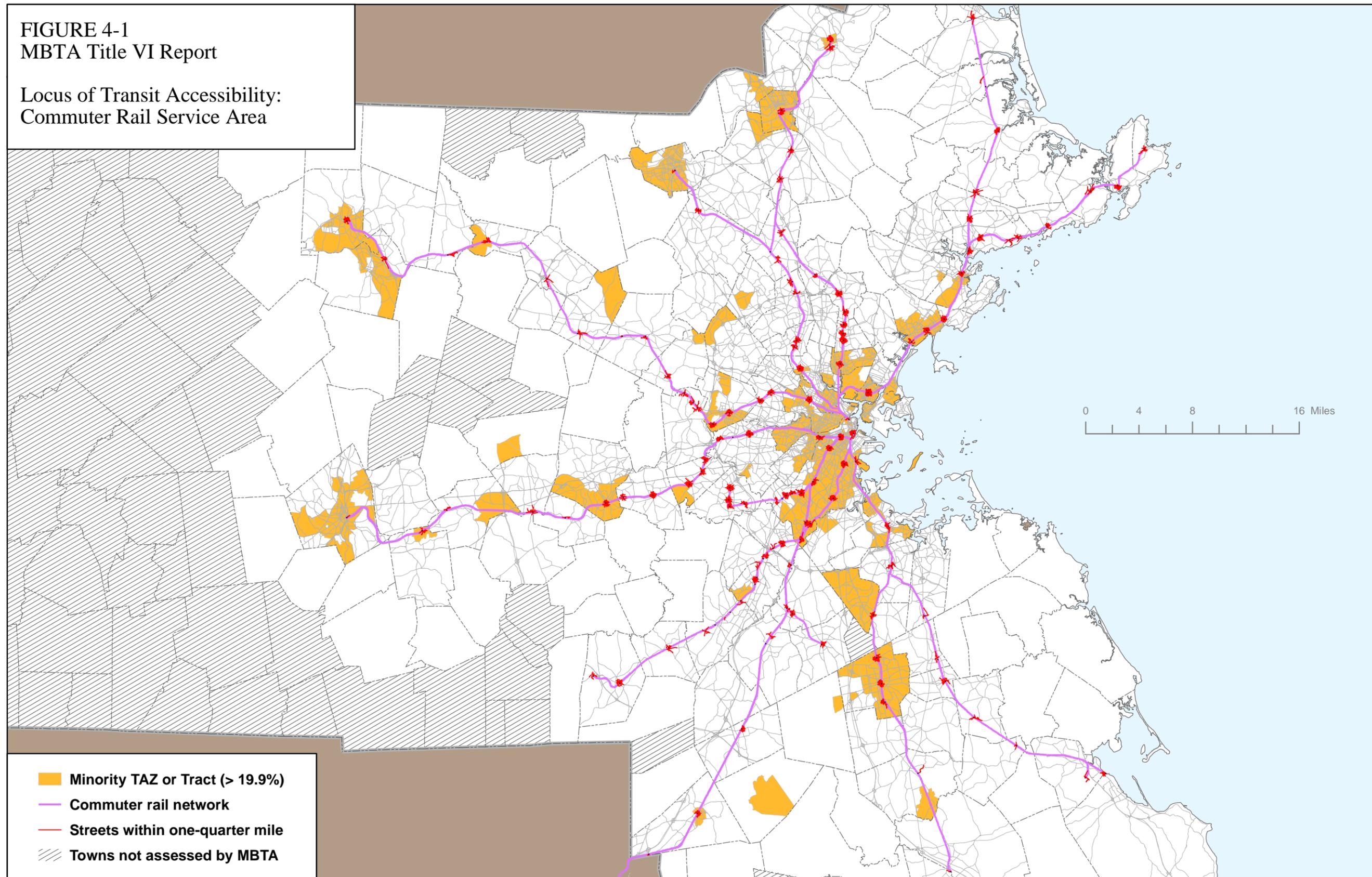
**TABLE 4-9
Summary of Transit Access:
Commuter Rail Service Area (outside of Bus/RT Service Area)**

High Density Areas (greater than 5,000/sq. mile)	All Streets Length (mi.)	Commuter Rail Market Length (mi.)	% of Total
Minority TAZ	406	11	2.7%
Nonminority TAZ	536	16	2.9%
Total TAZ	942	27	2.8%

* The Commuter Rail Service Area includes the 175 communities in the MBTA's full service area. Using 2000 census data, the minority population for this area was 19.93%.

FIGURE 4-1
MBTA Title VI Report

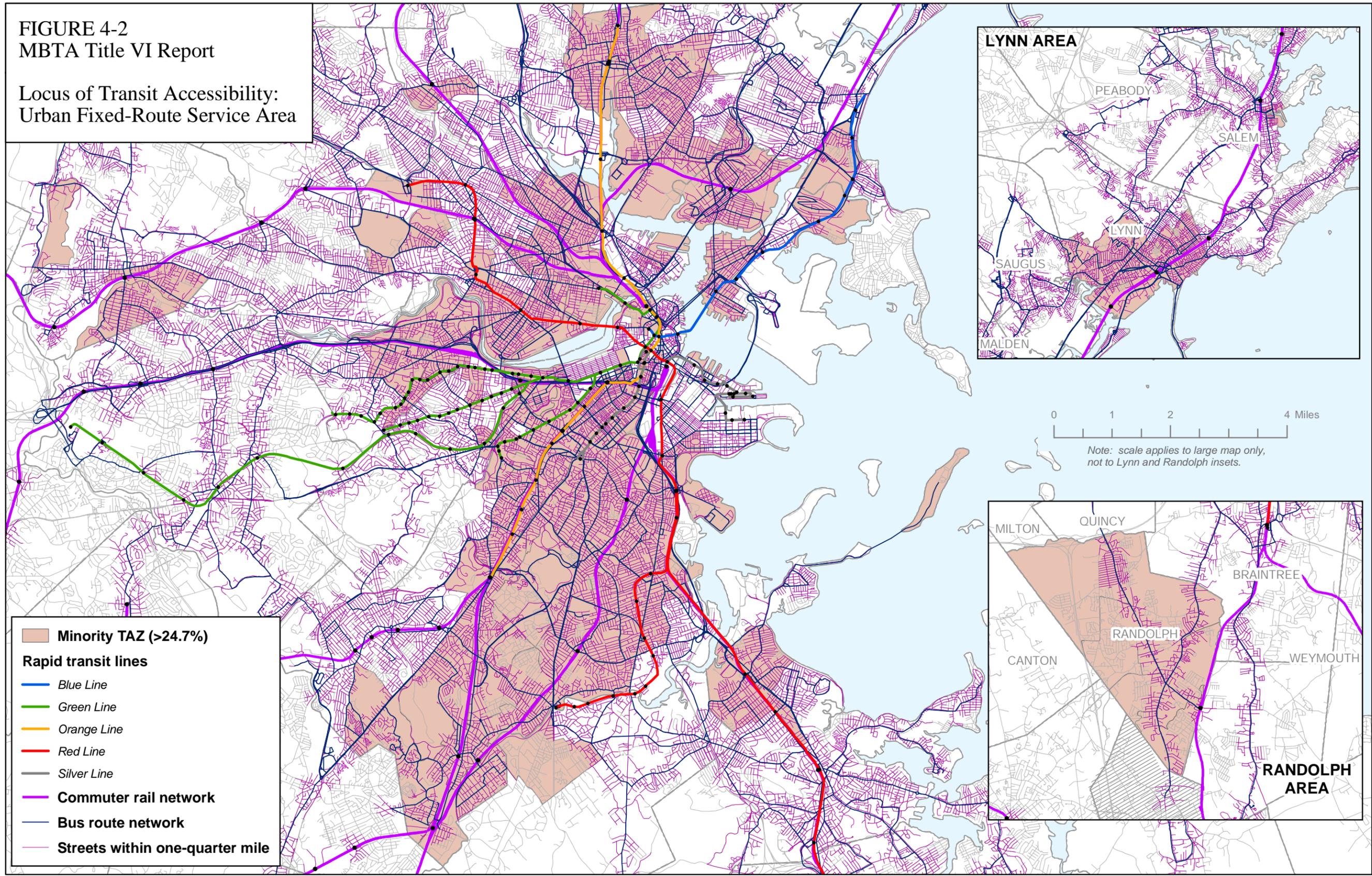
Locus of Transit Accessibility:
Commuter Rail Service Area



- Minority TAZ or Tract (> 19.9%)**
- Commuter rail network**
- Streets within one-quarter mile**
- Towns not assessed by MBTA**

FIGURE 4-2
MBTA Title VI Report

Locus of Transit Accessibility:
Urban Fixed-Route Service Area



DISTRIBUTION OF TRANSIT AMENITIES

Documentation of Elevator and Escalator Performance

The Massachusetts Bay Transportation Authority outsources the complete maintenance service-testing, and inspection of all transit system and facility elevators and escalators. The unique feature of this contract is that it is an all-inclusive, comprehensive specification. This means that regardless of the causes of service interruptions, including vandalism, the environment, and misuse, all work required to maintain service is included in the contract price.

The MBTA has 165 escalators and 111 elevators in operation for a total of 275 pieces of equipment under contract. During the past five years, this equipment has been maintained by KONE, Inc. This contract, one of the largest conveyance-system contracts issued in the Commonwealth, expired in December 2004. KONE is currently operating under an interim extension, pending the outcome of contract negotiations based on bid proposals received during the recent procurement process.

New equipment is introduced to the transit system by the Design and Construction Department. Elevators and escalators are included as part of Design and Construction's overall station modernization and improvement program. Over the next five years, the Design and Construction Department will add approximately 50 pieces of these types of equipment into the transit system.

The MBTA's Maintenance Control Center (MCC) tracks all elevator and escalator service requests. Service requests are transmitted via MBTA personnel and field inspectors to the MCC, which then transmits the information to the elevator/escalator maintenance contractor via a computer terminal. The maintenance contractor then dispatches maintenance personnel to perform repairs.

Elevators

Elevator service is a vital component of commuting for MBTA passengers. Elevators not only provide conveyance for all passengers, but also are a vital component in ensuring accessibility for persons with disabilities. Availability is critical, and consequently a proactive maintenance program is necessary to keep equipment safe and operational.

Regular elevator maintenance is specified in time intervals, for both traction and hydraulic elevators, that include biweekly, monthly, quarterly, semiannual, and annual checks and inspections. The MBTA has nine traction elevators in operation. Maintenance tasks, checks, and inspections are detailed and specific, and are meant to be minimum requirements.

Maintenance tasks are comprehensive and repetitive over the various intervals to ensure that all equipment components are given the proper attention in order to minimize costly and time-consuming repairs.

In an effort to determine the average length of time each elevator was out of service,

CTPS examined service calls that were placed to the MCC when equipment failed to operate. Equipment failures can vary in cause and in the length of time required to repair them. Primary reasons for the length of time an elevator is out of service may include:

- Waiting time for specific replacement parts from manufacturers
- Complexity of the repair
- Investigation due to accidents

MCC service call data between August 2004 and January 2005 were analyzed. Table 4-10 compares the average number of hours that elevators were out of service at minority-designated stations to the average number of hours out of service at stations systemwide. This information is also listed in Figure 4-3.

TABLE 4-10

	Average Time to Repair an Elevator (hrs.)	Average # of Hrs. Elevators Out of Svc. per Station (6-month period)	Average # of Service Calls per Elevator (6-month period)
Minority stations	10.4	168	6.7
Nonminority stations	9.2	260	11.2
All stations	9.7	210	8.8

For minority-designated stations, the average time an elevator was out of service during the six-month study period was 168 hours, while at nonminority-designated stations, the average time an elevator was out of service was 260 hours. During the study period, a total of 400 service calls were placed for maintenance at minority-designated stations, while 588 calls were placed at nonminority-designated stations. In terms of the time it took to complete each repair, the average for minority-designated stations was 10.4 hours, compared to 9.7 hours for the system as a whole.

These are results that should be monitored closely in the future, but the difference in response time is small enough not to warrant corrective action at this time.

Escalators

The MBTA moves nearly one million passengers per day. A significant number of passengers use station escalators during their commute. Equipment is subject to intense passenger loads as passengers alight from train cars and exit stations. The MBTA's riding public is quick to inform the station personnel, the customer service department, and other management personnel when equipment malfunctions or service is delayed for brief or extended periods of time. Accordingly, the maintenance specification is defined to cover all equipment components.

FIGURE 4-3
MBTA Title VI Report

**Rapid Transit Station
 Elevator Maintenance**

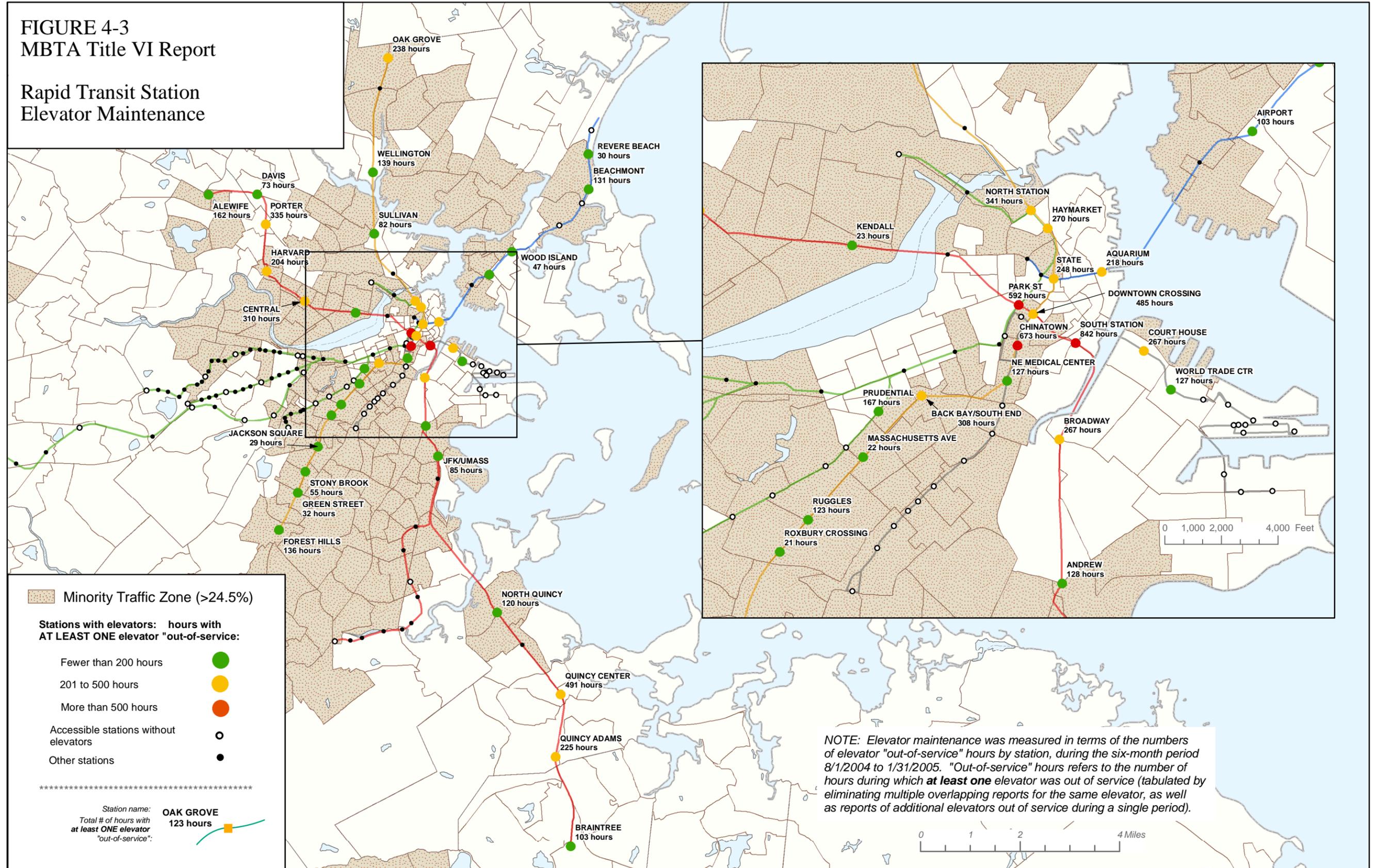


TABLE 4-11

	Average Time to Repair an Escalator (hrs.)	Average # of Hrs. Out of Service per Escalator (6-month period)	Average # of Service Calls per Escalator (6-month period)
Minority stations	17.0	133	7.7
Nonminority stations	16.0	176	10.7
All stations	16.5	155	9.3

Regular escalator maintenance is specified in time intervals that include weekly, biweekly, monthly, semiannual, and annual checks and inspections. The requirements are minimum requirements, and are comprehensive and repetitive in nature in order to minimize costly and time-consuming repairs.

Using the same methodology as for elevators, all stations equipped with escalators were examined. Like elevators, service calls are placed to the MCC when equipment fails to operate. Equipment failures can vary in cause and in the length of time required to repair them. Primary reasons for the length of time an escalator is out of service are the same as those listed above for elevators.

MCC service call data between August 2004 and January 2005 were analyzed. Table 4-11 compares the average number of hours that escalators were out of service at minority-designated stations to the data for the system as a whole. This information is also listed in Figure 4-4.

For minority-designated stations, the average time it took to repair an escalator during the six-month study period was 17 hours, while at nonminority-designated stations, the average time was 16 hours. During the study period, a total of 619 service calls were placed for escalator maintenance at minority-designated stations, while 913 calls were placed for nonminority-designated stations. For the system as a whole, the average time it took to repair an escalator was 16.5 hours.

As is also true for elevators, these figures should be monitored closely in the future. However, the difference in response time between minority-designated neighborhoods and the system as a whole is small enough not to warrant corrective action at this time. It should also be noted that over the six-month period analyzed, minority-designated stations fared much better than the system as a whole in terms of average total out-of-service time per escalator.

Elevator and Escalator Action Plan

While this analysis indicates no disparity in accessibility between minority and non-minority communities, concerns about systemwide reliability and availability have increased in the past year. The MBTA is implementing the following action plan that sets out a short-term, medium-term, and long-range agenda to address these systemwide concerns regarding elevator and escalator function.

SHORT-TERM ACTIONS – BY JULY 1, 2005

1. Provide alternative transportation for the elderly and for passengers with disabilities when elevators are out of service.

The materials required to implement the alternative service plan are:

- A special order to all bus operations employees directing them to allow customers with MBTA Senior IDs or Transportation Access Passes to board alternate bus service free of charge.
- A special order directing subway personnel to assist passengers affected by the outage and to make announcements on trains approaching Harvard Station to let customers know that the elevator is out of service.
- Signage concerning the outage and alternative transportation.
- The information on the MBTA's website concerning the outage and alternative transportation.

2. Track elevator and escalator performance more closely.

Upper management receives reports to monitor elevator and escalator availability on a daily and monthly basis.

3. Audit elevator and escalator performance.

The suggestion has been made that while the MBTA's reports regarding elevator and escalator performance clearly reflect a low level of availability earlier this year, the actual levels may be even lower than reported. In response, Operations has developed an auditing process to verify the levels of elevator and escalator availability.

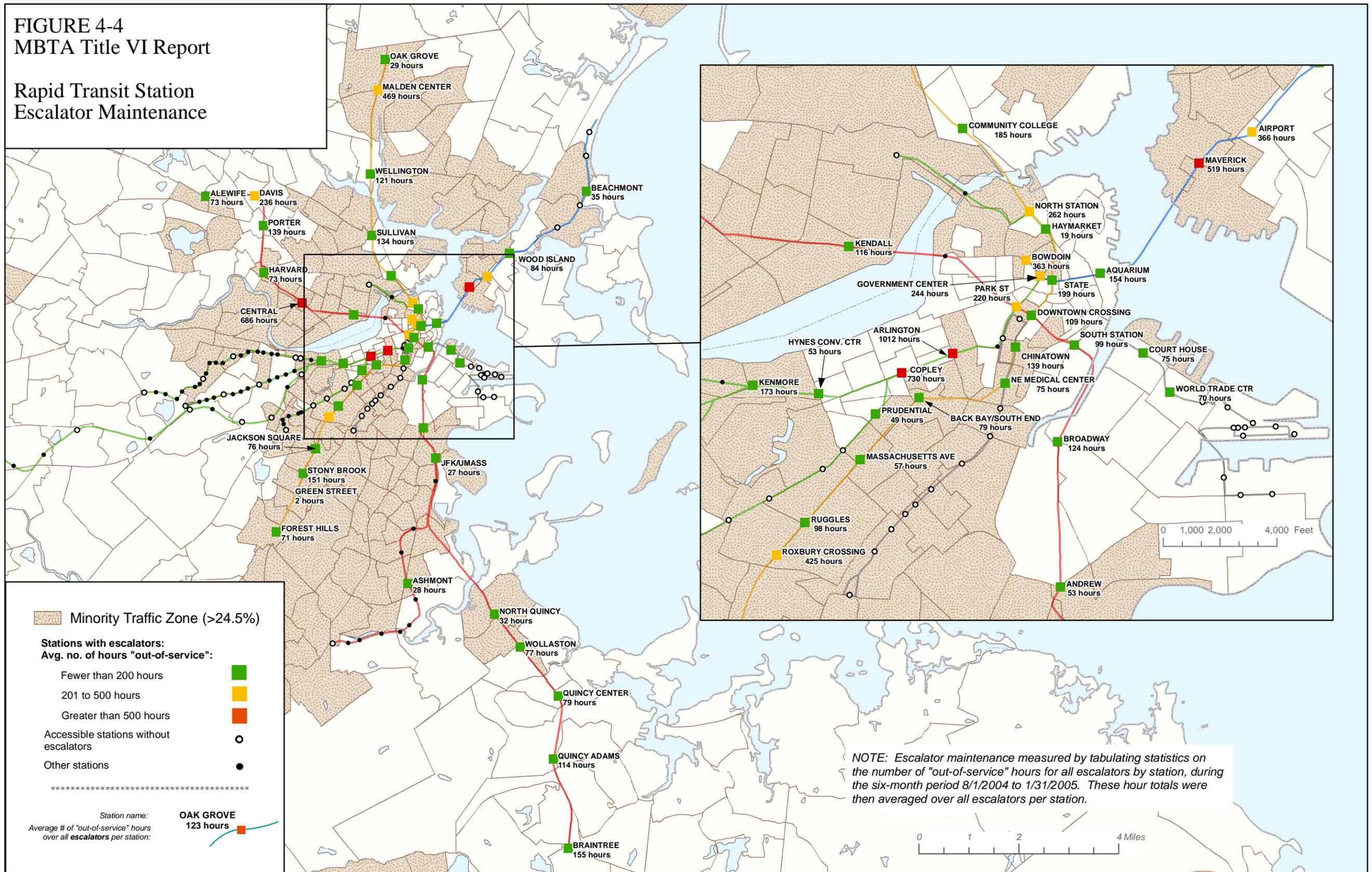
4. Hire an independent expert to evaluate the performance of the MBTA's elevator and escalator maintenance contractor and to recommend steps to improve the reliability and availability of this equipment.

The Operations Support Department has identified Vertical Transportation Excellence (VTX®), an independent expert, to assist the MBTA with a number of critical issues related to operating and maintaining elevators. VTX® is currently developing a detailed scope of work and a cost estimate. VTX® will help the MBTA to review and improve:

- The contractor's performance
- The scope of work in the current maintenance contract
- The preventative maintenance program required by the current contract
- The contractor's procedures for preventive and corrective maintenance
- The MBTA's procedures for enforcing the contract

FIGURE 4-4
MBTA Title VI Report

**Rapid Transit Station
 Escalator Maintenance**



- The MBTA's capital reinvestment program for elevators and escalators

5. Compile a New Scope of Work for a New Elevator and Escalator Maintenance contract.

The MBTA advertised for a new maintenance contract last fall, but the scope of work was not developed with the clear purpose of improving escalator reliability and availability. Furthermore, the bids received were unaffordable. MBTA staff will ask for help from VTX® to revise the scope of work to achieve more cost-effective, reliable service.

MEDIUM-TERM ACTIONS – BY JULY 1, 2006

1. Survey the entire system and develop contingency plans for outages at each elevator.

To develop contingency plans, MBTA staff will:

- Identify alternative paths of travel
- Prepare signage to post inside and outside the affected elevator to inform customers of the outage and the recommended detour
- Prepare special orders to announce the outage and direct operators and collectors on the detour route to permit customers with either a Transportation Access Pass or an MBTA Senior ID to board the alternative services free of charge
- Prepare web text

2. Consider reorganizing the management of MBTA elevators and escalators.

Operations proposes to reorganize the management of elevators and escalators to place more management focus on this equipment and introduce a level of technical expertise that the MBTA currently lacks. Currently, elevator and escalator maintenance is just one task managed by Operations Support, which is also responsible for maintaining all of the MBTA's buildings and structures and all of the fixed equipment they contain. The manager currently responsible for overseeing the elevator and escalator maintenance contract lacks the technical expertise to critique the contractor's work. Operations proposes to separate the responsibility for elevator and escalator maintenance from the Operations Support Department by creating a new unit for elevators and escalators with the status of a mode of transportation. The proposal includes hiring a Director of Vertical Transportation who would report directly to the chief operating officer.

3. Explore the possibility of establishing in-house capability to perform elevator and escalator maintenance.

For many years, the MBTA has depended on contractors for elevator and escalator maintenance. This arrangement has been challenging because competition has been lacking, prices have been high, and the MBTA has had little leverage in dealing

with the contractors. In an attempt to correct this problem, the MBTA will develop in-house capability for maintaining elevators and escalators. The process of hiring employees, procuring parts, and establishing procedures will likely take several months. Initially, the MBTA plans to assume responsibility for maintaining just a small group of elevators and escalators, in order to test the success of the program and then review the potential for expanding the in-house function.

4. Install 100 customer call boxes at fare boxes systemwide to provide customers with immediate access to current information on alternate routes of travel in the event of an outage.

In conjunction with the MBTA's Station Management Project, the MBTA is installing 100 new customer call boxes in fare collection areas to provide customers with a means of obtaining information and/or assistance. The call box will have two buttons, one for police assistance and one for customer service. The hub station monitors will answer the calls for customer service and will be able to provide customers with up-to-the-minute information about which elevators are and are not working. The hub station monitors will also have the ability to contact an official or a customer service agent who can assist the passenger in taking an alternate route when elevators are out of service.

LONG TERM ACTIONS – BY JULY 2007

1. Develop a capital reinvestment program to upgrade and/or replace elevators and escalators, as needed at the end of their useful lives.

Ultimately, the MBTA needs to invest in elevators and escalators as recommended by manufacturers and industry experts to avoid a trend toward age-related failures. One of the tasks VTX® will perform is to help the MBTA devise a capital upgrade and replacement program. Operations will request funding in the next cycle of the Capital Investment Program (CIP) and will tailor their approach to match the needs to the available funding. It will likely take the next two cycles of the CIP process (by April 2007) to identify funding and program systematic capital reinvestment in elevators and escalators

Documentation of Bus Shelter Distribution

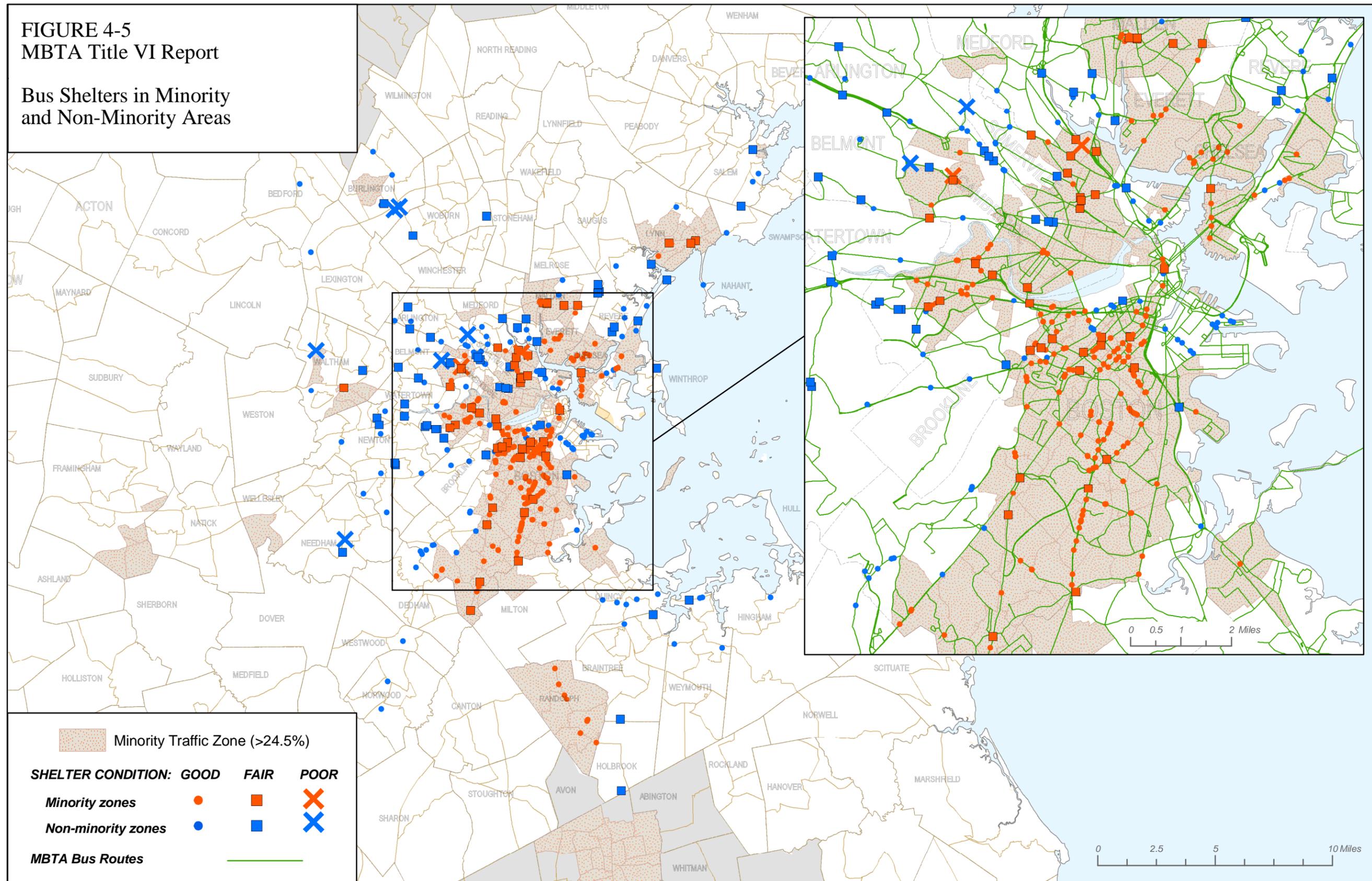
As indicated in Chapter 3, the analysis of the distribution of bus shelters was completed using the 1984 Bus Shelter Placement policy. In this policy, the number of weekday boardings per stop is one of three major factors used to determine shelter placement. Stops with a minimum of 100 or more boardings and/or transferring passengers during a typical weekday are automatically considered eligible for shelters.

There are 936 bus stops with 100 or more boardings per day in the MBTA network; 623 of them, or 66%, are located in minority-designated neighborhoods and 313, or 33%, are located in nonminority-designated neighborhoods.

Of these 936 bus stops with 100 or more boardings per day, 234 have shelters; 165 of the

FIGURE 4-5
MBTA Title VI Report

Bus Shelters in Minority and Non-Minority Areas



234 shelters (70%) are located in minority-designated neighborhoods and 69 of the 234 shelters (30%) are in nonminority-designated neighborhoods.

There are 7,669 bus stops with fewer than 100 boarding per day in the MBTA network; 2,631 of them (34%) are in minority-designated neighborhoods, while 5,038 (66%) are in nonminority-designated neighborhoods .

Of the 7,669 bus stops with fewer than 100 boardings per day, 274 have shelters; 122 of the 274 shelters (45%) are in minority areas, while 152 (55%) are in nonminority areas.

These results indicate that regardless of whether a stop automatically qualifies for shelters based on boardings, those in minority-designated neighborhoods are more likely to be equipped with shelters than those in nonminority-designated neighborhoods.

In May 2005, as this report was going to press, a new shelter policy that can be used for future Title VI analyses was forwarded to the MBTA General Manager for his approval. It is anticipated that the new policy will be implemented at the same time that the MBTA is embarking on a new bus-shelter placement program that is modeled on the Wall shelter program in Boston. As a condition of the new shelter program contract, the vendor is required to maintain the equity of shelter placements to meet Title VI requirements.

Documentation of Bus Shelter Conditions

Bus shelters in the MBTA network undergo inspections and maintenance on different bases, depending on the ownership of the shelter. For shelters licensed to the Wall USA, Inc. (“Wall” shelters), which are located entirely within the city of Boston, inspections are conducted twice a week. Customer complaints are also called in to either the City or the MBTA and then forwarded to Wall, which addresses these issues within 24 hours. Wall USA assumes full responsibility for maintenance of these shelters. While other shelters owned by the MBTA are also inspected on a regular basis, maintenance is generally performed in response to complaints and notices called into the MBTA, either by customers or by bus drivers.

CTPS assigned staff to each bus shelter in the MBTA network to perform an additional inspection for purposes of Title VI analysis. Bus shelter conditions were rated according to the standards discussed in Section 3 (good/marginal/poor) and for the following categories: roof condition, condition of side panels, presence of graffiti/vandalism, shelter cleanliness, and surrounding-area cleanliness. Each category was given a rating of 1 to 3, with 1 representing a “good” condition and 3 representing a “poor” condition. A composite score was then assigned to the shelter based on its worst rating of all the variables. Thus, a shelter which received ratings of 1 for roof and side-panel condition, 2 for vandalism, and 3 for shelter and area cleanliness would receive a general score of 3.

According to the tabulation of the collected data, bus shelter conditions in minority-designated neighborhoods are significantly better than those in nonminority-designated neighborhoods. The composite score for minority-designated shelters was 16% lower

TABLE 4-12

	Roof Condition	Sides Condition	Graffiti/Vandalism	Shelter Cleanliness	Area Cleanliness	Composite Score
Minority	1.01	1.03	1.05	1.07	1.12	1.17
Nonminority	1.02	1.09	1.25	1.18	1.16	1.39
Difference	-0.01	-0.06*	-0.20*	-0.11*	-0.04	-0.22*

*Difference is statistically significant at the 95% confidence level.

than that of nonminority-designated shelters, a difference that is statistically significant at the 99% confidence level.

Documentation of Parking Distribution

Parking is an amenity feature that in terms of supply, availability, and condition can bring positive benefits to a community by making access to transit service convenient. Lack of parking or inadequate parking, particularly in nonurban settings, can be strong disincentives to use of transit and can be the source of community conflicts affecting surrounding streets and properties. On the other hand, the provision of parking can also negatively impact a community in terms of generating increased automobile traffic and the potential congestion, safety, and air-quality burdens. The MBTA, in its capital planning, recognizes the need for a balanced parking program that takes into account demand, the variety of facility functions (collector, intercommunity, urban/local/neighborhood), environmental/neighborhood impacts, and the need to promote transit-access alternatives to the automobile. Across the entire MBTA system, according to the MBTA's long-range master plan, Program for Mass Transportation, 84% of transit users bike or walk to stations. Within the commuter rail system, 54% of the users drive automobiles to stations and other transit service. Title VI analysis will include assessing how parking functions and supplies are distributed throughout the service area and will identify whether there is an imbalance in minority/nonminority siting. As with other analyses in this report, minority areas are defined as census tracts that have racial/ethnic minority populations exceeding the Boston Region MPO area average.

Parking Inventory

There are 248 stations within the MBTA system. Of the 248 stations, 137 (55%) have some parking provided either by the MBTA or by partners that include regional transit authorities, municipalities, and private third parties. The breakdown of system parking available by mode is:

Rapid Transit:	29 parking facilities (16,445 spaces – 33% of total)
Commuter Rail:	106 parking facilities (31,500 spaces – 63% of total)
Express Bus:	1 parking lot (200 spaces – 0.4% of total)
Ferry:	1 parking lot (1,598 spaces – 3.2% of total)
Total parking:	137 station facilities (49,743 spaces)

(Note: Not included in inventory analysis are MassHighway Park-and-Ride lots and downtown parking garages at South Station and North Station that are not exclusively used by MBTA customers. Also, facilities at rapid transit stations that are also served by other modes are counted as rapid-transit parking facilities.)

Siting breakdown for parking facilities by minority/nonminority areas are:

Minority Areas:	31 facilities (23% of total); 11,911 spaces (24%)
	12 rapid-transit facilities (5,586 spaces)
	19 commuter rail facilities (6,325 spaces)
Nonminority Areas:	106 facilities (77% of total); 37,834 spaces (76%)
	17 rapid-transit facilities (10,859 spaces)
	87 commuter rail facilities (25,177 spaces)
	1 ferry facility (1,598 spaces)
	1 express-bus facility (200 spaces)

For the purpose of this Title VI analysis, station parking in minority and nonminority areas were compared in terms of utilization capacity, function, and condition (see Table 4-13).

Utilization

Data on facility utilization were collected from the MBTA Revenue Department, CTPS surveys, the MBTA Planning Department, and regional transit authority information. Utilization rates were compared to assess whether there were disparities between minority-area facilities and the system as a whole in terms of facility parking supply needs. Facilities used at less than 50% of capacity are considered to have an excess parking supply; conversely, sites with usage exceeding 85% are considered to be approaching or over capacity.

**TABLE 4-14
Parking Facility Utilization—MBTA System**

# Station Parking Facilities	Avg. Daily Utilization Rate
18 (13%)	Less than 50%
41 (30%)	Between 50% and 85%
78 (57%)	Greater than 85%

TABLE 4-13
Distribution of Park and Ride Lots

Rapid Transit	Station/Parking	Minority	Capacity	Usage	Function	Condition
Orange Line	Oak Grove	Minority	788	117%	regional collector	paved surface
	Malden	Minority	188	140%	inter-community	paved surface
	Wellington	Non-Minority	1,316	114%	regional collector	paved surface
	Sullivan	Non-Minority	222	158%	inter-community	paved surface
	Comm.College	Non-Minority	NP		urban central	
	North Station	Minority	NP		urban central	
	Haymarket	Minority	NP		urban central	
	State	Non-Minority	NP		urban central	
	Downtown Cross.	Non-Minority	NP		urban central	
	Chinatown	Minority	NP		urban central	
	N.E. Medical	Minority	NP		urban central	
	Back Bay	Minority	NP		urban central	
	Mass. Ave.	Minority	NP		urban central	
	Ruggles	Minority	NP		urban central	
	Roxby Crossing	Minority	NP		urban central	
	Jackson Sq.	Minority	NP		urban central	
	Stony Brook	Minority	NP		Local/Neighborhood	
	Green St.	Minority	137	74%	Local/Neighborhood	paved surface
	Forest Hills	Minority	206	123%	inter-community	paved surface
	Green Line	Lechmere	Minority	347	119%	regional collector
Chestnut Hill		Non-Minority	70	117%	urban central	paved surface
Eliot		Non-Minority	55	109%	Local/Neighborhood	paved surface
Waban		Non-Minority	74	95%	Local/Neighborhood	paved surface
Woodland		Non-Minority	448	107%	inter-community	paved surface
Riverside		Non-Minority	925	83%	regional collector	paved surface
Arlington		Non-Minority	NP		urban central	
Boylston		Non-Minority	NP		urban central	
Copley		Non-Minority	NP		urban central	
Gov't Center		Minority	NP		urban central	
Haymarket		Minority	NP		urban central	
Hynes Conv. Ctr		Non-Minority	NP		urban central	
Kenmore		Minority	NP		urban central	
North Station		Minority	NP		urban central	
Park St.		Non-Minority	NP		urban central	
Science Park		Minority	NP		urban central	
Allston St.		Minority	NP		urban central	
Babcock St.		Minority	NP		urban central	
Blandford St.		Minority	NP		urban central	
Boston College		Non-Minority	NP		urban central	
BU Central		Minority	NP		urban central	
BU East		Minority	NP		urban central	
BU West		Non-Minority	NP		urban central	
Chestnut Hill Ave		Non-Minority	NP		urban central	
Chiswick Rd.		Non-Minority	NP		urban central	
Fordham Rd		Minority	NP		urban central	
Greycliff Rd		Non-Minority	NP		urban central	
Griggs St.		Minority	NP		urban central	

**TABLE 4-13 (cont.)
Distribution of Park and Ride Lots**

Harvard Ave.	Minority	NP			urban central	
Mt. Hood Rd.	Minority	NP			urban central	
Packards Cornr.	Minority	NP			urban central	
Pleasant St.	Non-Minority	NP			urban central	
St. Paul St. (B)	Non-Minority	NP			urban central	
South St.	Non-Minority	NP			urban central	
Summit Ave.	Minority	NP			urban central	
Sutherland Rd.	Minority	NP			urban central	
Warren St.	Minority	NP			urban central	
Washington St.	Minority	NP			urban central	
Brandon Hall	Non-Minority	NP			urban central	
Cleveland Circ.	Non-Minority	NP			urban central	
Coolidge Cornr	Minority	NP			urban central	
Dean Road	Non-Minority	NP			urban central	
Englewood Ave	Non-Minority	NP			urban central	
Fairbanks St.	Non-Minority	NP			urban central	
Hawes St.	Non-Minority	NP			urban central	
Kent St.	Non-Minority	NP			urban central	
St. Paul St. ©	Non-Minority	NP			urban central	
St. Marys St.	Non-Minority	NP			urban central	
Tappan St.	Non-Minority	NP			urban central	
Washington Sq.	Non-Minority	NP			urban central	
Winchester St.	Non-Minority	NP			urban central	
Beaconfield	Non-Minority	NP			urban central	
Brookline Hills	Non-Minority	NP			urban central	
Brookline Village	Minority	NP			urban central	
Chestnut Hill Sta	Non-Minority	NP			urban central	
Fenway	Minority	NP			urban central	
Longwood Ave	Non-Minority	NP			urban central	
Newton Ctr	Non-Minority	NP			urban central	
Newton Highlnds	Non-Minority	NP			urban central	
Reservoir	Non-Minority	NP			urban central	
Back of the Hill	Minority	NP			urban central	
Brigham Circle	Minority	NP			urban central	
Fenwood Rd.	Minority	NP			urban central	
Heath St.	Minority	NP			urban central	
Longwood Med	Minority	NP			urban central	
Mission Park	Minority	NP			urban central	
Northeastern	Minority	NP			urban central	
Prudential	Minority	NP			urban central	
Riverway	Minority	NP			urban central	
Ruggles/Museum	Minority	NP			urban central	
Symphony	Non-Minority	NP			urban central	
<hr/>						
Red Line	Alewife	Minority	2,595	122%	regional collector	multi-level structure
	No. Quincy/Hancock	Non-Minority	852	104%	regional collector	paved surface
	No. Quincy/Newport	Non-Minority	354	116%	regional collector	paved surface
	Wollaston	Non-Minority	550	111%	intercommunity	paved surface
	Quincy Center	Non-Minority	872	103%	regional collector	multi-level structure
	Quincy Adams	Non-Minority	2,378	107%	regional collector	multi-level structure

**TABLE 4-13 (cont.)
Distribution of Park and Ride Lots**

	Braintree Garage	Non-Minority	1,281	110%	regional collector	multi-level structure
	Andrew	Minority	NP		urban central	
	Broadway	Non-Minority	NP		urban central	
	Central	Minority	NP		urban central	
	Charles	Non-Minority	NP		urban central	
	Davis	Non-Minority	NP		urban central	
	Downtown Cross	Non-Minority	NP		urban central	
	Harvard	Minority	NP		urban central	
	JFK/Umass	Minority	NP		urban central	
	Kendall	Minority	NP		urban central	
	Park St.	Non-Minority	NP		urban central	
	Porter	Non-Minority	NP		urban central	
	South Station	Non-Minority	NP		urban central	
	Ashmont	Minority	NP		neighborhood	
	Fields Corner	Minority	NP		neighborhood	
	Savin Hill	Minority	33	109%	neighborhood	paved surface
	Shawmut	Minority	NP		neighborhood	
Red-Mattapan	Milton	Non-Minority	41	85%	neighborhood	paved surface
	Mattapan	Minority	216	31%	neighborhood	paved surface
	Butler	Non-Minority	42	100%	neighborhood	paved surface
	Capen St.	Non-Minority	NP		neighborhood	
	Cedar Grove	Non-Minority	12	50%	neighborhood	paved surface
	Central Ave.	Non-Minority	NP		neighborhood	
	Valley Road	Non-Minority	NP		neighborhood	
Blue Line	Wonderland	Non-Minority	970	115%	regional collector	paved surface
	Wonderland/Ocean Ave	Non-Minority	287	106%	regional collector	paved surface
	Beachmont	Minority	430	100%	inter-community	paved surface
	Suffolk Downs	Minority	110	91%	inter-community	paved surface
	Orient Heights	Minority	434	100%	inter-community	paved surface
	Airport	Non-Minority	NP		urban central	
	Aquarium	Non-Minority	NP		urban central	
	Bowdoin	Non-Minority	NP		urban central	
	Govt. Center	Minority	NP		urban central	
	Maverick	Minority	102	87%	urban central	
	Revere Beach	Non-Minority	NP		urban central	
	State	Non-Minority	NP		urban central	
	Wood Island	Non-Minority	110	97%	urban central	
Bus Route	Watertown	Non-Minority	200	90%	Inter-community	paved surface
			16,645			

**TABLE 4-13 (cont.)
Distribution of Park and Ride Lots**

Commuter Rail Line	Parking Lot	Minority	Capacity	Avg Usage	Function	Condition
Rockport	Rowley	Non-Minority	282	18%	Inter-community	paved surface
	Newburyport	Non-Minority	801	38%	Inter-community	paved surface
	Ipswich	Non-Minority	170	116%	Inter-community	paved surface
	Rockport	Non-Minority	88	91%	Inter-community	dirt and paved
	Gloucester	Non-Minority	34	100%	Local/Neighborhood	dirt and paved
	West Gloucester	Non-Minority	44	48%	Local/Neighborhood	paved surface
	Manchester	Non-Minority	71	118%	Local/Neighborhood	paved surface
	Beverly Farms	Non-Minority	60	87%	Local/Neighborhood	paved surface
	Prides Crossing	Non-Minority	6	70%	Local/Neighborhood	paved surface
	Montserrat	Non-Minority	116	67%	Inter-community	paved surface
	Hamilton / Wenham	Non-Minority	194	63%	Inter-community	paved surface
	No. Beverly	Non-Minority	87	78%	Local/Neighborhood	paved surface
	Beverly Depot	Non-Minority	252	83%	Inter-community	paved surface
	Salem	Non-Minority	340	100%	Regional collector	paved surface
	Swampscott	Non-Minority	131	100%	Inter-community	paved surface
	Lynn	Minority	965	25%	Regional collector	multi-level structure
	Riverworks	Minority	0		Local/Neighborhood	
Chelsea	Minority	0		Local/Neighborhood		
Haverhill	Haverhill	Minority	159	74%	Inter-community	paved surface
	Bradford	Non-Minority	303	35%	Inter-community	paved surface
	Lawrence	Minority	163	93%	Inter-community	paved surface (City)
	Andover	Non-Minority	152	93%	Inter-community	paved surface
	Ballardvale	Non-Minority	120	83%	Inter-community	paved surface
	North Wilmington	Non-Minority	70	100%	Local/Neighborhood	paved surface (Town)
	Reading (inc. private lots)	Non-Minority	414	100%	Inter-community	paved surface
	Wakefield	Non-Minority	117	89%	Inter-community	paved surface
	Greenwood	Non-Minority	58	100%	Local/Neighborhood	paved surface (City)
	Melrose Highlands	Non-Minority	110	82%	Local/Neighborhood	paved surface (City)
	Melrose Cedar Park	Non-Minority	87	100%	Local/Neighborhood	paved surface (City)
	Wyoming Hill	Non-Minority	32	84%	Local/Neighborhood	paved surface (City)
Lowell	Lowell	Minority	932	75%	Regional collector	multi-level structure
	No. Billerica	Non-Minority	542	84%	Regional collector	paved surface
	Wilmington	Non-Minority	191	94%	Inter-community	paved surface
	Anderson/Woburn	Non-Minority	1,500	24%	Regional collector	paved surface
	Mishawum	Non-Minority	0		Local/Neighborhood	
	Winchester	Non-Minority	193	84%	Inter-community	paved surface
	Wedgemere	Non-Minority	170	100%	Inter-community	paved surface
	West Medford	Non-Minority	30	72%	Local/Neighborhood	paved surface
Fitchburg	Fitchburg	Minority	67	92%	Inter-community	paved surface
	North Leominster	Non-Minority	142	88%	Inter-community	paved surface
	Shirley	Non-Minority	71	97%	Local/Neighborhood	dirt and paved surface
	Ayer	Minority	66	92%	Local/Neighborhood	paved surface
	Littleton/495	Non-Minority	99	100%	Inter-community	dirt and paved surface
	South Acton	Non-Minority	287	103%	Inter-community	paved surface
	West Concord (inc. priv. Lot	Non-Minority	190	100%	Inter-community	paved surface
	Concord	Non-Minority	86	111%	Local/Neighborhood	paved surface

**TABLE 4-13 (cont.)
Distribution of Park and Ride Lots**

	Lincoln	Non-Minority	161	85%	Inter-community	dirt and paved surface
	Silver Hill	Non-Minority	6	33%	Local/Neighborhood	dirt
	Hastings	Non-Minority	8	38%	Local/Neighborhood	dirt
	Kendal Green	Non-Minority	57	7%	Local/Neighborhood	dirt and paved surface
	Brandeis/Roberts	Minority	70	41%	Local/Neighborhood	paved surface
	Waltham	Minority	84	124%	Local/Neighborhood	paved surface
	Waverly	Non-Minority	0		Local/Neighborhood	
	Belmont	Non-Minority	115	86%	Inter-community	paved surface
Framingham/ Worcester	Worcester	Minority	457	89%	Inter-community	paved surface
	Grafton	Minority	373	66%	Inter-community	paved surface
	Westborough	Non-Minority	306	89%	Inter-community	paved surface
	Southborough	Non-Minority	364	83%	Inter-community	paved surface
	Ashland	Non-Minority	678	38%	Inter-community	paved surface
	Framingham	Minority	166	93%	Inter-community	paved surface
	West Natick	Non-Minority	178	97%	Inter-community	paved surface
	Natick	Non-Minority	71	100%	Local/Neighborhood	paved surface
	Wellesley Square	Non-Minority	342	100%	Inter-community	paved surface
	Wellesley Hills	Non-Minority	51	100%	Local/Neighborhood	paved surface
	Wellesley Farms	Non-Minority	199	100%	Inter-community	paved surface
	Auburndale	Non-Minority	63	98%	Local/Neighborhood	paved surface
	West Newton	Non-Minority	350	77%	Inter-community	paved surface
	Newtonville	Non-Minority	0		Local/Neighborhood	
	Yawkey	Non-Minority	0		Urban Central	
	Fairmount	Fairmount	Minority	27	44%	Local/Neighborhood
Morton Street		Minority	0		Local/Neighborhood	
Uphams Corner		Minority	0		Local/Neighborhood	
Needham	Needham Heights	Non-Minority	243	39%	Inter-community	paved surface
	Needham Center	Non-Minority	36	100%	Local/Neighborhood	paved surface
	Needham Junction	Non-Minority	175	100%	Inter-community	paved surface
	Hersey	Non-Minority	322	102%	Inter-community	paved surface
	West Roxbury	Non-Minority	62	90%	Local/Neighborhood	paved surface
	Highland	Non-Minority	175	72%	Local/Neighborhood	paved surface
	Bellevue	Non-Minority	37	76%	Local/Neighborhood	paved surface
	Roslindale	Non-Minority	143	76%	Local/Neighborhood	paved surface
Franklin	Forge Park	Non-Minority	716	84%	Regional collector	paved surface
	Franklin	Non-Minority	173	100%	Inter-community	paved surface
	Norfolk	Non-Minority	530	89%	Inter-community	paved surface
	Walpole	Non-Minority	526	100%	Inter-community	paved surface
	Plimptonville	Non-Minority	5	20%	Local/Neighborhood	dirt
	Windsor Gardens	Non-Minority	0		Local/Neighborhood	
	Norwood Depot	Non-Minority	227	50%	Inter-community	paved surface
	Norwood Central	Non-Minority	782	62%	Inter-community	paved surface
	Dedham Corp.	Non-Minority	497	40%	Inter-community	paved surface
	Islington	Non-Minority	39	54%	Local/Neighborhood	dirt and paved surface
	Endicott	Non-Minority	45	100%	Local/Neighborhood	paved surface
	Readville	Minority	354	62%	Inter-community	paved surface
	Providence	Non-Minority	330	100%	Intercommunity	paved surface

**TABLE 4-13 (cont.)
Distribution of Park and Ride Lots**

Providence	So. Attleboro	Non-Minority	567	98%	Intercommunity	paved surface
	Attleboro	Minority	780	88%	Regional collector	paved surface
	Mansfield	Non-Minority	806	75%	Regional collector	dirt and paved surface
	Sharon	Non-Minority	230	78%	Intercommunity	paved surface
	Canton Junction	Non-Minority	764	90%	Regional collector	paved surface
	Stoughton	Non-Minority	457	60%	Intercommunity	paved surface
	*Route 128	Non-Minority	2,000	80%	Regional collector	multi-level structure
	Canton Center	Non-Minority	215	93%	Intercommunity	paved surface
	Hyde Park	Minority	121	67%	Local/Neighborhood	paved surface
Plymouth	Plymouth	Non-Minority	96	2%	Intercommunity	paved surface
	Kingston	Non-Minority	1029	73%	Regional collector	paved surface
	Halifax	Non-Minority	408	82%	Intercommunity	paved surface
	Hanson	Non-Minority	428	85%	Intercommunity	paved surface
	Abington	Non-Minority	405	91%	Intercommunity	paved surface
	So. Weymouth	Non-Minority	539	81%	Intercommunity	paved surface
	Whitman	Non-Minority	199	85%	Intercommunity	paved surface
Middleborough	Lakeville	Non-Minority	853	80%	Regional collector	paved surface
	Bridgewater	Non-Minority	497	81%	Intercommunity	paved surface
	Brockton	Minority	240	53%	Intercommunity	paved surface
	Campello	Minority	546	47%	Intercommunity	paved surface
	Montello	Minority	425	59%	Intercommunity	paved surface
	Holbrook/Randolph	Non-Minority	362	77%	Intercommunity	paved surface
Ferry	Hingham	Non-Minority	1,598	60%	Regional Collector	paved surface
	Totals		33,100			

* capacity with garage roof closed; when roof opens capacity = 2589 spaces

For the MBTA system, median weekday usage at Rapid Transit/express bus parking facilities is 106%. Median usage at commuter rail/ferry parking facilities is 84%.

Table 4-15 shows breakdown of utilization rates at the 31 minority area station parking facilities.

**TABLE 4-15
Parking Facility Utilization—Minority Area Stations**

# Station Parking Facilities	Avg. Daily Utilization Rate
5 (16%)	Less than 50%
8 (26%)	Between 50% and 85%
18 (58%)	Greater than 85%

Table 4-16 shows the breakdown of utilization rates at the 106 nonminority-area station parking facilities.

TABLE 4-16
Parking Facility Utilization—Nonminority Area Stations

# Station Parking Facilities	Avg. Daily Utilization Rate
13 (13%)	Less than 50%
33 (31%)	Between 50% and 85%
60 (56%)	Greater than 85%

A comparison of utilization rates indicates that the lack of sufficient parking supply is a systemwide problem, with almost 60% of the parking facilities approaching or exceeding capacity. The extent of the problem is the same for minority- and nonminority-area stations.

Function

Stations' parking facilities were categorized based on their function within the transit system. The three primary classification categories are:

Regional collector facilities – Designed to serve customers coming from multiple origin communities, located off highway/interstates or major roadway intersections, and generally having a capacity greater than 500 spaces.

Intercommunity facilities – Designed and sited to collect customers from the host community or nearby communities, located off secondary routes/roadways, and generally having a capacity or utilization of between 100 and 500 automobile spaces.

Local/neighborhood facilities – Designed and sited to serve primarily neighborhood or immediate community customers and having capacity or utilization of less than 100 auto spaces.

The analysis of the breakdown of facility by function indicates that parking facility types are distributed similarly within minority areas and nonminority areas. Of the large regional collector facilities, about 1 in 4 are located at minority area stations, a percentage matching the overall parking distribution between minority/nonminority communities and indicating such facilities are equitably distributed within the system. Shown in Tables 17, 18 and 19.

TABLE 4-17
Parking Facility Function—MBTA System

# Station Parking Facilities	Facility Function Category
23 (17%)	Regional collector
70 (51%)	Intercommunity
44 (32%)	Local/neighborhood

FIGURE 4-6
MBTA Title VI Report

Park and Ride Lots at Rapid Transit Lines
Minority Traffic Zones and Census Tracts

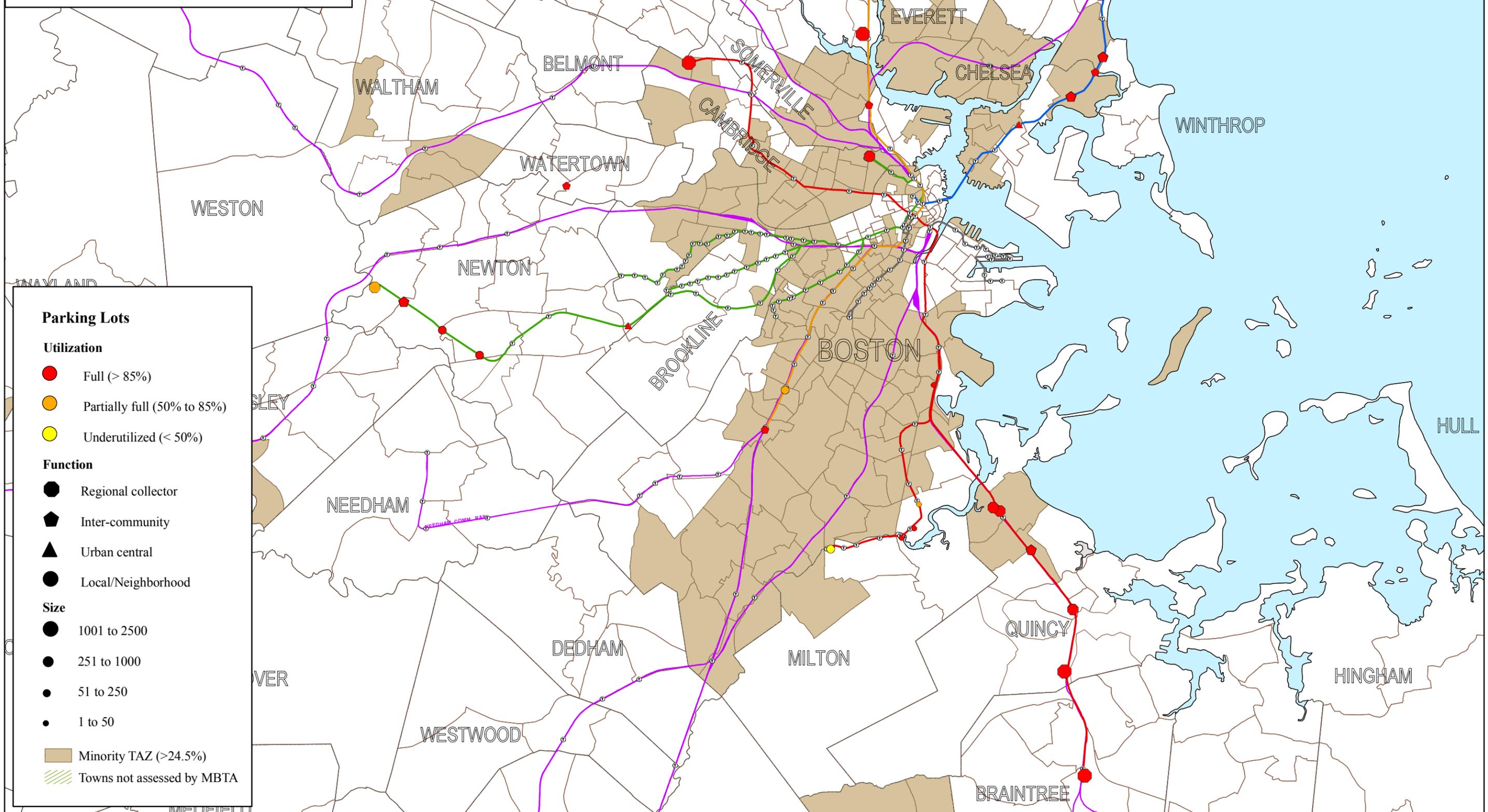


FIGURE 4-7
MBTA Title VI Report

Park and Ride Lots at Commuter Rail Stations
Minority Traffic Zones and Census Tracts

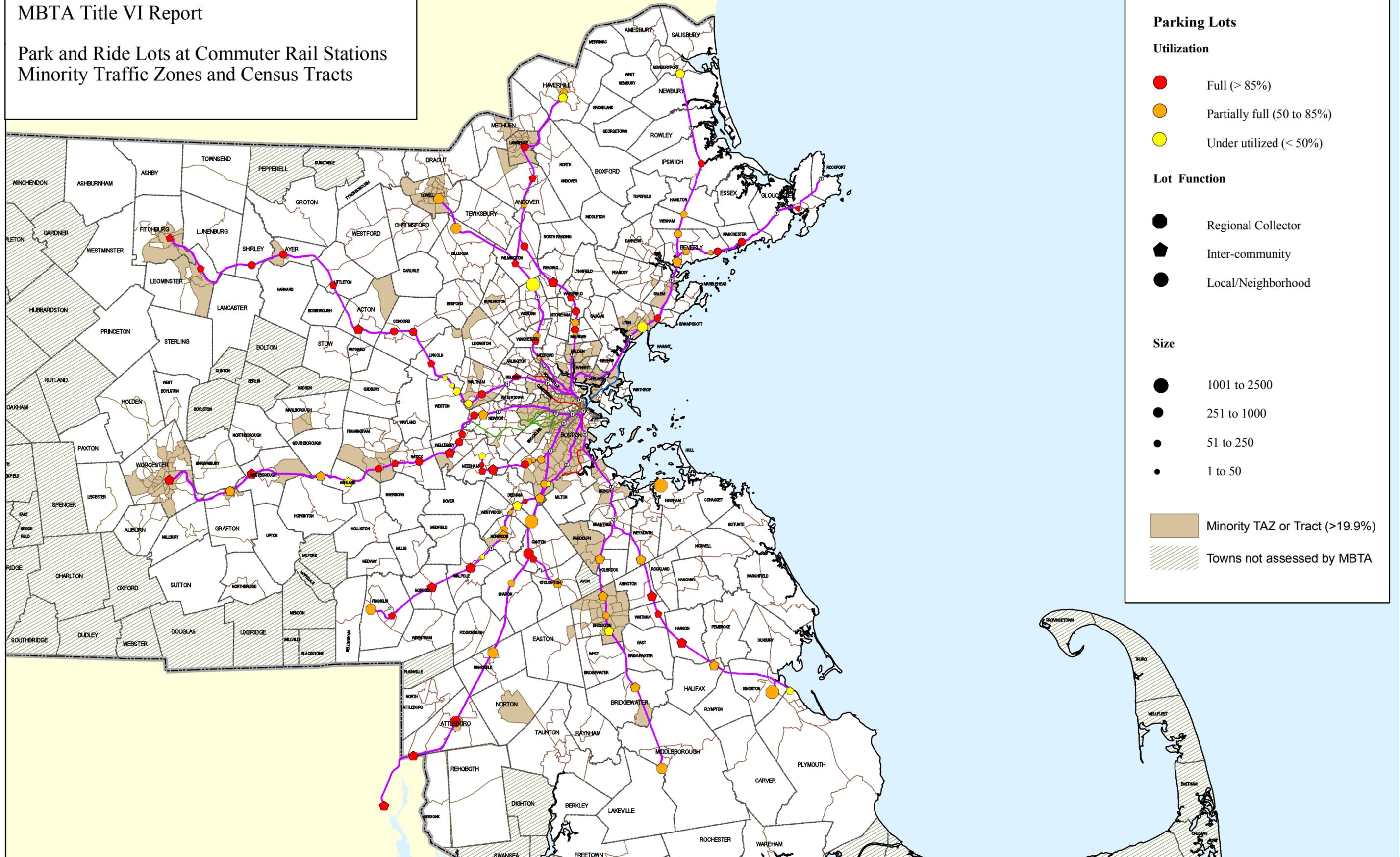


TABLE 4-18
Parking Facility Function—Minority Area Stations

# Station Parking Facilities	Facility Function Category
6 (19%)	Regional collector
16 (52%)	Intercommunity
9 (29%)	Local/neighborhood

TABLE 4-19
Parking Facility Function— Nonminority Area Stations

# Station Parking Facilities	Facility Function Category
17 (16%)	Regional collector
54 (51%)	Intercommunity
35 (33%)	Local/neighborhood

Condition

Conditions of station parking facilities at minority-area facilities and nonminority-area facilities were compared by categorizing each facility by the type of construction and by identifying differences in siting patterns between the community groupings.

The incidence of garage structure investment is higher among minority area stations than among the system as a whole, with three of the system’s seven multilevel structure/garage facilities located in minority areas. Within both minority and nonminority areas, close to 90% of parking facilities are paved surface lots. Unimproved lots or combination dirt-paved lots are nonexistent in minority-area stations and make up a relatively small portion of nonminority-area station facilities. See Tables 20, 21 and 22.

TABLE 4-20
Parking Facility Condition—MBTA System

# Station Parking Facilities	Facility Condition Category
7 (5%)	Multilevel structure/garage
119 (87%)	Paved surface lot
11 (8%)	Dirt lot or combination dirt/paved

TABLE 4-21
Parking Facility Condition—Minority Area Stations

# Station Parking Facilities	Facility Condition Category
3 (10%)	Multilevel structure/garage
28 (90%)	Paved surface lot
0	Dirt lot or combination dirt/paved

**TABLE 4-22
Parking Facility Condition—Nonminority Area Stations**

# Station Parking Facilities	Facility ConditionCategory
4 (4%)	Multi-level structure/garage
91 (86%)	Paved surface lot
11 (8%)	Dirt lot or combination dirt/paved

Conclusions

An assessment of data regarding physical condition, function, and capacity utilization of parking indicates equitable distribution of parking within the MBTA system. Given the current level of parking supply, parking availability is as much a problem in minority areas as in nonminority area facilities. The make-up of facilities in terms of size and function is equivalent across the community groupings. Paved surface lots predominate in both minority and nonminority areas, with a slightly higher distribution of parking garage structure investment in minority communities than for the system as a whole.

QUALITY OF SERVICE

Documentation of Quality of Service

As indicated earlier in this chapter, the Title VI quality-of-service compliance assessment (which includes all modes) has become a regular part of the biennial service planning process. The quality-of-service analysis is now completed for each Service Plan so that if inequities are found they can be corrected before the proposed service changes are implemented.

The quality-of-service assessment presented in the March 2005 MBTA Title VI Quarterly Report was completed for the 2004 Service Plan and included the service changes proposed in the plan. That assessment used the same residential trip-origin and work-trip destination TAZs that were chosen for the quality-of-service analysis in the MBTA's 2002 Title VI Report. To select these zones, CTPS used the Boston Region MPO's regional model to identify the 10 most densely populated minority TAZs and the 10 most densely populated nonminority residential TAZs in the MBTA district (see Table 4-23). In addition, CTPS used the regional model to select the three TAZs with the highest densities of work-trip attractions as representative destinations for the quality-of-service analysis, with the stipulation that each of the three would be from a different neighborhood. This methodology ensured the objectivity of the TAZ selection criteria.

For this report, CTPS has included two additional major regional employment destinations—Logan Airport and the South Shore Plaza—and has recalculated the quality-of-service analysis. Logan was selected because of the large and varied number of services it

FIGURE 4-8
MBTA Title VI Report

Park and Ride Lot Condition at
Rapid Transit Lines with
Minority Traffic Zones and Census Tracts

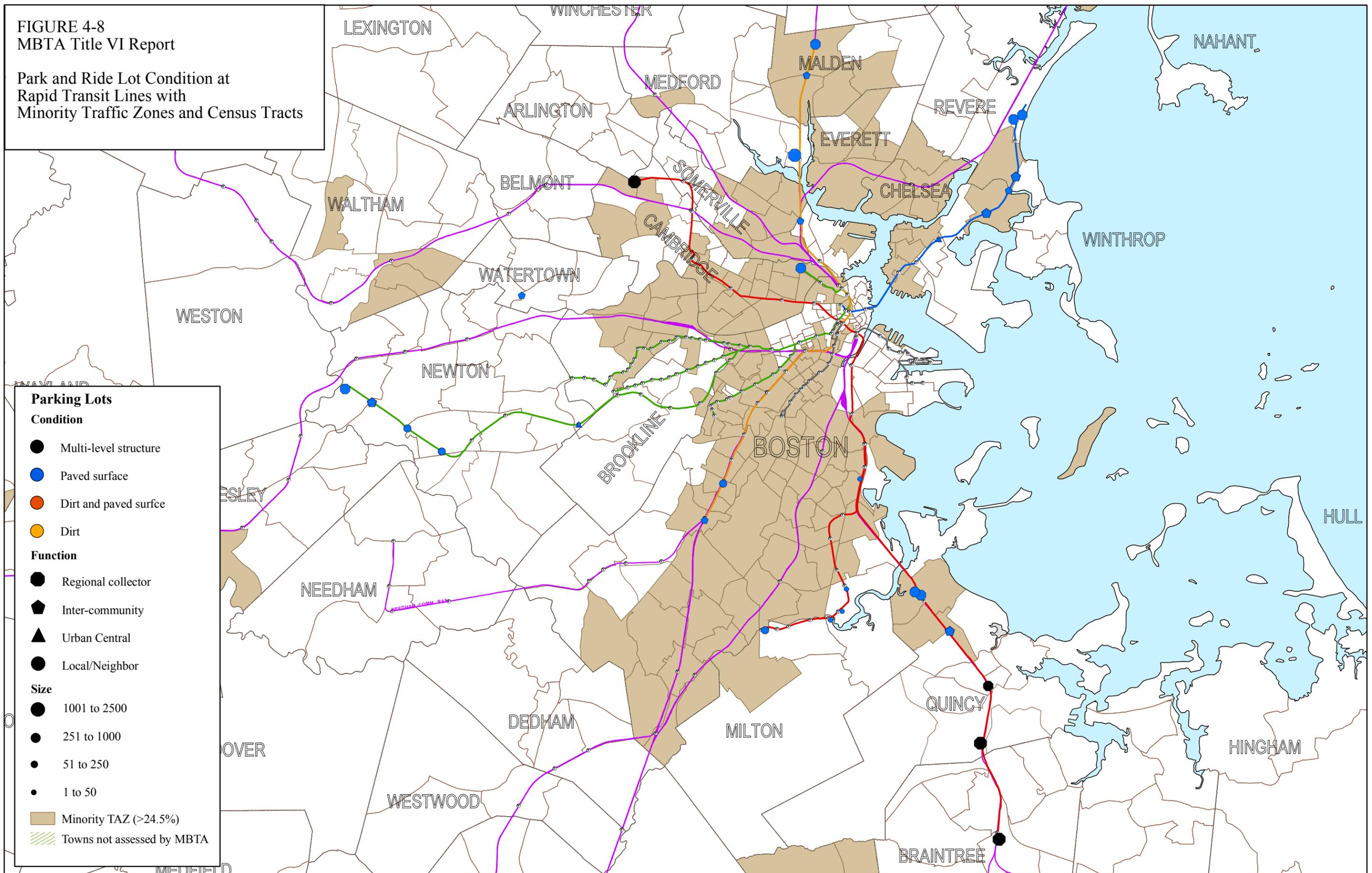


FIGURE 4-9
MBTA Title VI Report

Park and Ride Lot Condition at Commuter Rail Stations
Minority Traffic Zones and Census Tracts

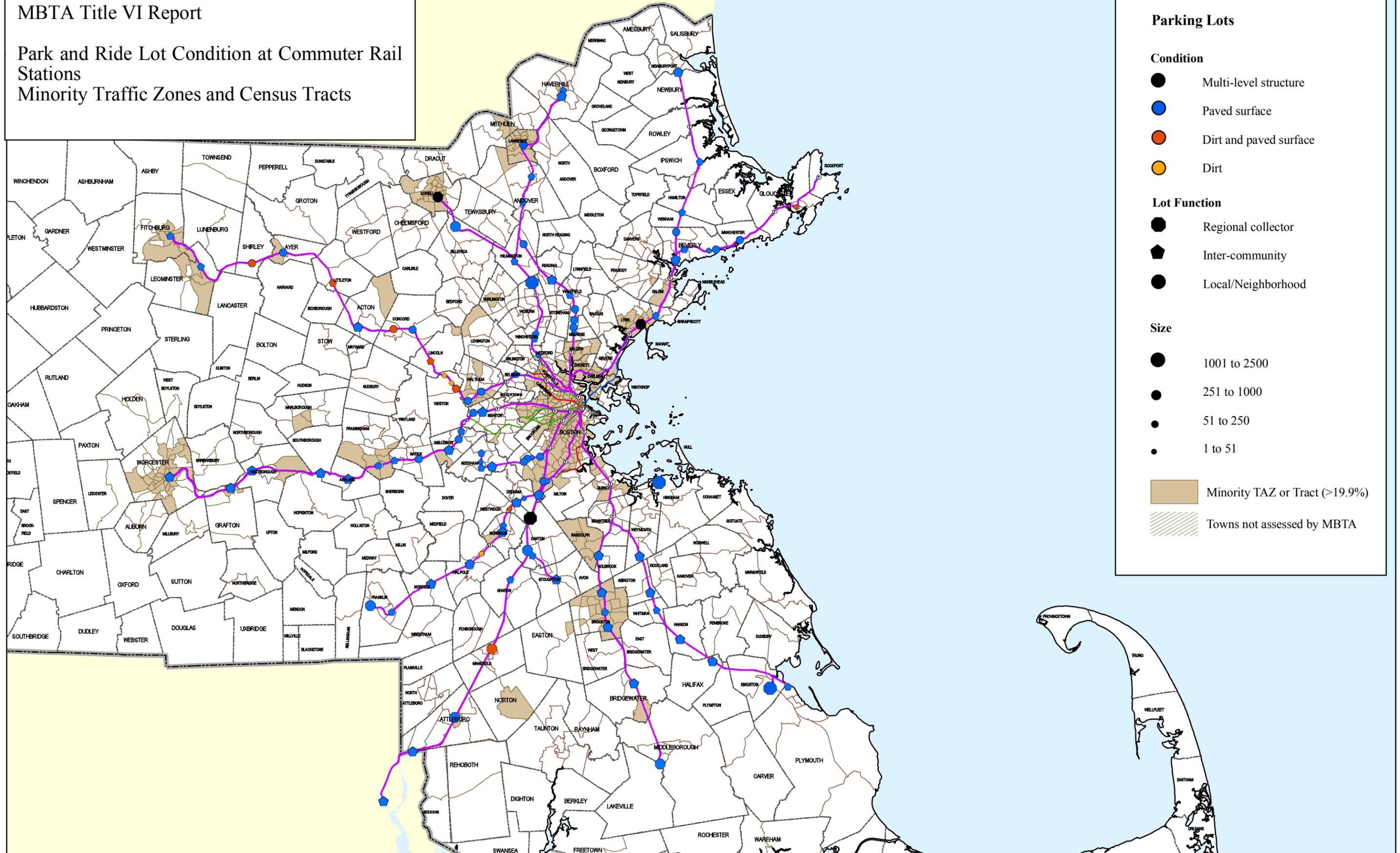


TABLE 4-23

Minority		Nonminority	
TAZ	Neighborhood Origin	TAZ	Neighborhood Origin
129	Grove Hall (Dorchester)	154	South Boston
197	Wellington Hill (Dorchester)	3	North End
42	Chinatown	13	Beacon Hill
166	Bowdoin/Geneva (Dorchester)	253	Somerville Powderhouse Square
131	Mission Hill	297	Brookline Washington Square
133	Egleston Square (Roxbury)	269	Mid-Cambridge
204	Chelsea (East Side)	40	Bay Village
70	East Boston Central Square	111	Brighton Center
180	Roslindale Square	280	Cambridge Avon Hill
288	Cambridge Rindge Towers	245	Somerville Union Square

provides and the South Shore Plaza was selected based on its suburban location and role as a regional trip generator. All five destination zones used in the current analysis are shown in Table 4-24.

TABLE 4-24

TAZ	Destination Zone
28	State Station
47	Copley Square
97	Longwood Medical Area
77	Logan Airport
688	South Shore Plaza

While the selection methodology for destination zones was designed to be unbiased, one might expect some differences between the work-trips attracted to these five selected zones, given that three of the zones—Longwood Medical Area, Logan Airport, and the South Shore Plaza—are likely to contain a higher proportion of lower-income jobs.

As with the quality-of-service assessment completed for the 2004 Service Plan and reported in the March 2005 MBTA Title VI Quarterly Report, the MBTA's new Web-based trip-planning tool was used for the analysis reported here. Although the data (found in Table 4-25) show minority areas to have higher trip fares, a greater number of transfers, longer trip lengths, and longer travel times on average when compared to nonminority areas, none of the differences between minority and nonminority areas are

TABLE 4-25

Average Performance	Avg. Peak Hr. Travel Time (min)	Trip Length (mi)	Avg. Travel Speed (mph)	Transfers/ Trip	Transfers/ Mile	Total Trip Cost	Trip Cost/ Mile
Minority	45.5	7.47	9.23	1.30	0.20	\$2.36	\$0.42
Nonminority	44.0	7.20	9.04	1.08	0.16	\$2.05	\$0.41
Difference*	1.5	0.27	0.19	0.22	0.04	\$0.31	\$0.01

*None of the differences between minority and nonminority are statistically significant at the 95% confidence interval, and only the difference in total trip cost is statistically significant at the 90% confidence interval.

statistically significant at the 95% confidence level (for total trip cost the difference is statistically significant at the 90% confidence level). Furthermore, when these variables are normalized, for distance, the travel speeds for minority neighborhoods is slightly higher than that for nonminority neighborhoods and the difference in trip cost/mile is negligible. Conversely, the number of transfers/mile is still higher for minority neighborhoods, but none of the differences between minority and nonminority areas is statistically significant at either the 90% or 95% confidence level. Consequently, there is no indication of a systemwide disparity between minority and nonminority neighborhoods.

Based on this analysis, no corrective actions are currently deemed necessary with respect to the Title VI quality-of-service requirement.



CHAPTER 5

Other Areas of Title VI Consideration: Information Dissemination

[FTA C4702.1 III.3.a (4)]

SERVICE CHANGES OVER THE NEXT THREE YEARS

[FTA C4702.1 III.3.A (4A)]

For the most part, major changes that will be made to bus service features over the next three years will be developed through the biennial service planning process that will culminate in MBTA Board approval of the 2006 Service Plan. As a part of this process, the Service Planning Department evaluates the performance of existing bus services using the service standards in the *Service Delivery Policy*. Recommendations for improvements to existing services are developed using this analysis. In addition, suggestions for new or extended services are considered for implementation. Ideas for these service changes are identified through various avenues, including suggestions from bus drivers and bus inspectors; observations made by Service Planning and CTPS staff; and comments from the public that are submitted regularly to the MBTA or are solicited through public workshops that are held as a part of the service planning process.

Because the Service Planning Department is in the early stages of planning for the 2006 Service Plan, the changes that will be proposed in this planning cycle—and implemented during the next three years—have not yet been defined. However, as indicated elsewhere in this report, each Service Plan is now subject to the Title VI Level and Quality of Service analyses to ensure compliance with Title VI.

Minor and moderate changes to bus service features will continue to be routinely made on a quarterly basis, outside of the Service Plan process. However, as required by the *Service Delivery Policy*, these are changes that have no additional operating costs associated with them. Nevertheless, the corresponding adjusted service levels will be incorporated into the Title VI analysis associated with the succeeding Service Plan. As such, they would not include major service enhancements or reductions and would not be significant enough to affect the Title VI analysis.

The only anticipated major additions to bus service that will be made outside of the Service Plan during the next three years will be implementation of the remaining two Silver Line Waterfront surface routes. One will be the SL1 to Logan Airport, which will

begin operation on June 1, 2005. The other is the SL4 route that will serve residential South Boston. The Service Planning Department is currently in discussions with the South Boston community and its elected officials to work out the final details of this route. Silver Line routes for which sufficient data are available will be analyzed as a part of the Title VI Level and Quality of Service evaluations completed for the 2006 Service Plan.

INFORMATION DISSEMINATION TO MINORITY COMMUNITIES

[FTA C4702.1 III.3.A (4B)]

Dissemination of Information Regarding Service Changes

Any change in MBTA service—whether it is a delay caused by bad weather, a modification in scheduling, or an increase in service levels to handle a special event—is of importance to the hundreds of thousands of people who depend on the MBTA to get to work, school, medical appointments, and countless other destinations on a daily basis. Thus an aggressive program is in place, targeted to the full range of the area’s ethnic and racial groups, to inform passengers of these changes.

The Authority makes service changes of varying magnitude for a variety of reasons, including: (1) emergency situations, (2) construction activity, (3) periodic service plan reviews, or (4) regular quarterly schedule updates. The magnitude and reasons for the changes determine which of the following methods used to inform the public of these changes.

Television and Radio

The MBTA uses television and radio on a 24-hours-a-day basis to inform the public of emerging conditions or events that may impact the Authority’s provision of service. The MBTA also provides routine service reports twice daily for television and radio stations during rush hour. A staff member from the SmartRoutes travel information service is present in the MBTA Operations Control Center (OCC) during rush hours to ensure rapid dissemination of service advisories to the public via SmartRoute information outlets that include telephone, television, Internet, and pager options.

Newspaper

Pertinent and timely service information is distributed by press release to citywide and community/minority-oriented newspapers. Press releases of interest to a specific area are targeted to newspapers in that area. Press releases of more general interest are broadcast by fax to area newspapers that reach a broad range of ethnic and racial groups.

Internet

The MBTA website (www.mbta.com) is used to disseminate information regarding ongoing MBTA projects and proposals, including dates and times of public meetings, hearings, etc. In addition, the site is used as a means of soliciting input from interested

parties regarding MBTA plans, projects or services. The site is also available for transit users to express complaints and commendations regarding MBTA services. To give input to the MBTA, customers may also send an e-mail message to feedback@mbta.com.

Press releases are posted automatically to the MBTA website and to the ne.transportation Usenet Newsgroup (an Internet-based forum for those interested in transportation topics in New England).

Public Hearings

Public hearings are held to elicit comments from the public regarding planned construction projects and the impacts of proposed service changes. Notices of public hearings are published 30 days before the hearing in urban newspapers of general circulation and newspapers published for specific local communities or neighborhoods. One week before the hearing, information flyers are distributed or signs are posted, as appropriate. Notices are mailed to community groups for public hearings regarding planned construction projects. Notices of public hearings related to service changes are also available on the MBTA website.

Public Meetings/Workshops

Public meetings and/or workshops that are hosted by the MBTA are publicized through press releases, mailings, and the distribution of informational flyers. Notices of public meetings are also posted on the MBTA website. Informational materials are disseminated at these meetings.

Community Meetings

Upon request, MBTA personnel attend regularly scheduled or special civic and community-organization meetings to address construction or service changes that are of interest to the group. The MBTA staff attempts to maintain close working relationships with communities to ensure that relevant service- and construction-related issues and concerns are addressed or resolved. Community task forces, of which MBTA personnel are members, assist in disseminating information. The MBTA also disseminates information in its informational flyers and press releases.

Billboards and Paid Advertisements

The MBTA uses billboards and paid advertisements to publicize construction and service-change impacts where it is appropriate and/or required.

Posters, Flyers, and Notices

The Authority displays posters detailing any service impacts on vehicles, in stations, and at high-volume bus shelters. The Authority also distributes flyers to individual passengers, area homes, businesses, and/or community organizations, where appropriate, by the most effective means. On important notices regarding bus service changes, the MBTA has in the past prominently displayed in English and seven other languages the

message, “This is an important notice. Please have it translated.” As discussed more fully in Section 4 of this chapter, “Multilingual Facilities,” the Authority will be taking several steps over the next six months to improve its communications to riders with Limited English Proficiency.

Staff Involvement

Personnel from every department in the MBTA distribute information to passengers at bus stops and stations when the need arises.

Schedule Cards

The MBTA produces and distributes over 2.6 million schedule cards every quarter (10.4 million annually) to ensure that the public has access to route and schedule information for the bus routes operated by the MBTA. The MBTA publishes new timetables four times per year. To assist the public, if a route or schedule has changed since the publication of the previous schedule, the front panel of the schedule card notes the type of change. Major bus terminals have a display case where schedule card information can be easily referenced. Also at these terminals are racks where passengers may obtain schedule cards. Signs at schedule racks inform passengers about routes that have had some type of change since the last schedule was published.

Telephone Information Center

The MBTA responds to an average of about 750 special requests for information weekly to provide the public with essential information about MBTA operations, through a seven-days-a-week telephone information center.

Outreach for 2004 and 2006 Service Plan Update

As a part of the 2004 Service Plan Update for bus service, the MBTA held seven public meetings to identify issues to consider in the service plan and to explain the service planning process.

In March 2004 a draft plan was released and six additional community workshops and one public hearing were held to inform members of the public and to solicit their comments regarding proposed changes to bus routes and proposed modifications to the MBTA's *Service Delivery Policy*. These community workshops consisted of a brief presentation by MBTA staff followed by an informal discussion between MBTA staff and the public regarding the Preliminary 2004 Service Plan. The workshops and hearing were held in April and May 2004 and were convened in the following communities: Boston (two workshops, one hearing), Somerville (one workshop), Roxbury (two workshops), and Quincy (one workshop).

The MBTA took the following steps to publicize the Preliminary 2002 Service Plan, as well as the workshops/hearings:

- Provided a link from the MBTA home page to the meeting information and the Preliminary 2002 Service Plan, both of which may be easily downloaded.

- Published legal notices that summarized each proposed service change. Legal notices appeared in the following newspapers: *Boston Globe*, *Bay State Banner*, *Sampan*, and *El Mundo*.
- Distributed flyers on buses throughout the system.
- Distributed review copies of the Service Plan to the main library in each city or town in the MBTA bus service area.
- Distributed press releases to many local media outlets.
- Sent a letter to all MBTA Advisory Board members or designees announcing the Service Plan, and made copies available to the MBTA Advisory Board.
- Discussed the proposed Cambridge changes with City of Cambridge staff at the MBTA/Cambridge bimonthly coordination meetings.
- Discussed the proposed changes in the South Boston Waterfront routes at meetings of the South Boston Waterfront Technical Advisory Committee.

The planning process has recently begun for the 2006 Service Plan. In May, seven workshops were held to solicit ideas from the public for service improvements. It is anticipated that the public process for the 2006 Service Plan will be similar to the process for the 2004 Service Plan.

Outreach for Capital Planning Processes

The MBTA conducts both long-range and yearly planning to guide its expansion, maintenance, and state-of-good-repair programs. In addition, individual planning projects involve public participation. In all cases, the MBTA conducts inclusive outreach to support these efforts.

Program for Mass Transportation

The Program for Mass Transportation (PMT) is the MBTA's long-range capital planning document. The 2003 PMT was developed during a 20-month process that involved extensive outreach to the general public and detailed and sustained consultation with the PMT Working Committee. Outreach was initiated in the earliest stages of PMT development and included a variety of opportunities and venues for involvement, reaching into every corner of the service area to gather ideas from individual members of the public, officials, and organizations. The process culminated with the MBTA Board of Directors' and MBTA Advisory Board's approval of the final document.

PUBLIC INVOLVEMENT IN PMT DEVELOPMENT

The MBTA opened public discussion on the process for developing the document in the summer and fall of 2001 by convening the PMT Working Committee, conducting a series of seven public workshops, and inviting many local and regional groups to discuss transit issues and ideas. Descriptions of most of these stake holders are included below.

THE PMT WORKING COMMITTEE

The PMT Working Committee served as the MBTA's principal public advisory body in developing the document. The 16 members making up the initial committee were selected from a wide geographic area and represented a variety of views and interests. Members represented the City of Boston, state agencies, regional agencies (including several participants from the MBTA Advisory Board), and a community group. All meetings were accessible to persons with disabilities.

THE MBTA ADVISORY BOARD

The MBTA consulted with the Advisory Board on several levels throughout the development of the PMT. As the final decision-maker on acceptance of the 2003 PMT, the Advisory Board played a key role in the process. In order to ensure that issues of importance to the Advisory Board were addressed, the MBTA provided several briefings to its full membership and often discussed the PMT with its Capital Planning Committee. In particular, the Advisory Board provided input for the Universe of Projects and the PMT goals and objectives.

METROPOLITAN PLANNING ORGANIZATIONS

The Boston Region Metropolitan Planning Organization

The Boston Region MPO played an important part in the development of the PMT. Its Regional Transportation Plan provided the early inputs for the PMT Universe of Projects. The PMT vision, goals, and objectives are consistent with the MPO's policies, and MPO members were provided several briefings and opportunities for comment.

Other MPOs/Regional Planning Agencies

As part of the initial outreach, the MBTA met with each of the MPOs with communities in the MBTA service area and with their corresponding regional planning agencies: the Old Colony MPO (Old Colony Planning Council), Southeastern Massachusetts MPO (Southeastern Regional Planning and Economic Development District), Central Massachusetts MPO (Central Massachusetts Regional Planning Commission), Montachusett MPO (Montachusett Regional Planning Commission), Northern Middlesex MPO (Northern Middlesex Council of Governments), and Merrimack Valley MPO (Merrimack Valley Planning Commission). These organizations were kept informed of PMT progress and their input was sought by the MBTA.

THE REGIONAL TRANSPORTATION ADVISORY COUNCIL

Though not directly in the line of approval, the Boston Region MPO's Regional Transportation Advisory Council (Advisory Council) is responsible for citizens' review and input to the Boston Region MPO. Because of this and its members' regional perspective on transportation planning, the Advisory Council was represented on the Working Committee and was briefed periodically by PMT staff.

MEMBERS OF THE GENERAL PUBLIC

Eleven public workshops (accessible to persons with disabilities) were conducted in locations all around the region. The first round was conducted in November and December 2001, when the MBTA introduced the PMT and the its planning process and actively solicited ideas and comments. The second round, conducted in January 2003, involved a review of the PMT process to date, the evaluation criteria, and the preliminary results of the analysis. Workshops were set up to gather ideas about the following transportation modes: bus, rapid transit, commuter rail, commuter boat, and bicycle/pedestrian. Maps showing transit routes, lines, and other facilities were available for discussion. Members of the public were interested in environmental justice issues and enhancing mobility to key employment centers. They spoke often about service-quality issues, such as improving reliability and eliminating transfers. The Working Committee was very interested in these ideas and was provided with copies of all comments submitted.

The Boston Region MPO used a variety of communication tools to involve the public in the development and review of the PMT. It established a website linked to both the MBTA and the MPO websites. The site included general information on the PMT; notices of public workshops and hearings; and information on the Working Committee and on documents produced during the development of the PMT, such as the vision statement, goals and objectives, project screening criteria, performance measures, and the results of both the screening and project evaluations. The site also provided an electronic form for citizens to use to register ideas and comments or to request more information.

The *PMT Monitor*, the project's newsletter, provided current information and progress reports on the development of the PMT and Working Committee activities. Each edition included the schedule, announced workshops, provided updates on the progress of the phases of PMT development, and invited readers to provide input and ideas. Three editions were published and circulated widely to communities and interested members of the public. They were posted on the PMT website and mailed to chief elected and executive officers and planning boards in the MBTA service area communities outside the MPO region. Individuals who attended public meetings and were interested in receiving the newsletter were placed on the PMT mailing list of 570 people. Within the Boston Region MPO region, copies were sent to the MPO's one-way listserver, MPOIN-FO. In addition, there were approximately 120 recipients on the project's PMT e-mail list receiving the Monitor and announcements of PMT workshops.

Information from the *PMT Monitor* and notices of public workshops were published in articles in *TRANSREPORT* (the Boston Region MPO newsletter). Press releases on public workshops were also sent to local and regional newspapers in the MBTA service area. Flyers announcing the public workshops were handed out on MBTA bus routes and posters were displayed in transit stations.

The draft PMT was circulated for public review during a thirty-day comment period.

Notice of its availability was posted via legal notices in the Boston Globe (the major daily newspaper), posted on the PMT website, and distributed to members of the Working Committee, the Advisory Board, the state legislature, the Advisory Council, the regional transit authorities, the MAPC subregions, and chief elected officials, administrators, and planning directors throughout the MBTA service area. Notice of its availability was announced in *TRANSREPORT* and was sent to the MPO and the PMT e-mail listservers. Four public workshops and two public hearings were conducted to listen to comments. Special briefings for the Boston Region MPO Transportation Planning and Programming Committee and members of the state legislature were conducted.

PMT CONSIDERATION OF ENVIRONMENTAL JUSTICE

The PMT Working Committee met frequently, usually monthly, to review PMT work products and to provide advice and guidance in the development of the PMT. Members participated in every step of the PMT. They provided input and guidance on PMT policies (vision, goals, and objectives), project performance measures, and development of the final plan. The Working Committee identified specific project ideas for inclusion in the PMT and raised issues for discussion.

With the guidance of the Working Committee, the MBTA developed five goals, each with a number of corresponding objectives. Two of these goals are shown below, along with their bulleted objectives that pertain to Environmental Justice:

1. To promote the equitable sharing of the transportation system's benefits and burdens.
 - To expand capacity and reallocate resources to relieve passenger crowding on vehicles and to facilitate ridership growth.
 - To identify and remove structural and operational transportation barriers faced by disadvantaged populations.
 - To enhance the mobility of transit-dependent populations located in both the urban core and suburban areas.
2. To serve as a partner for community development within the MBTA service area.
 - To improve mass transportation in a manner that enhances the competitiveness of local businesses and the economic vitality of neighborhoods, with special emphasis on disadvantaged areas.

These goals and objectives were taken into account when projects under-went both initial screening and detailed analysis.

System expansion and service-enhancement project ideas were evaluated based on 32 individual performance measures which were then divided into seven categories. One of the categories was Environmental Justice, taking into consideration the following four measures:

- service to minority, low-income, and transit-dependent neighborhoods;
- rectification of structural and/or operational transportation barriers faced by minority, low-income, and transit-dependent neighborhoods;
- the response to environmental justice issues identified in MPO Regional Transportation Plans, including poor connections between targeted residential neighborhoods and major employment centers; and
- burdens and benefits to minority, low-income, and transit-dependent neighborhoods.

ASSESSMENT OF PMT OUTREACH EFFORTS

The PMT outreach efforts, guided by the Working Committee and involving the participation of the Boston Region MPO, facilitated the coordination of MPO and MBTA programming processes. The MPO formalized procedures for coordinating the review and development of the MBTA planning and programming documents (PMT and CIP) with the MPO certification documents, the long-range Regional Transportation Plan, and the shorter-range Transportation Improvement Program (TIP). Evaluation criteria used by the MBTA to evaluate transit projects in the PMT and CIP were adopted by the MPO for application in the regional plan and the regional TIP. These criteria also formed the core of the criteria, ultimately developed and adopted by the Executive Office of Transportation under Secretary Grabauskas, that were applied to both transit and highway projects in the Commonwealth's project evaluation.

The PMT process also initiated the process of identifying communities of concern and laid the foundation for the environmental justice dialogue and analyses undertaken by the Boston Region MPO. These analyses were cited by FTA as a model for metropolitan areas.

Open-house formats that began with the PMT process have been replicated in other MBTA service planning and capital planning meetings, as has the PMT approach of scheduling multiple meetings at locations throughout the MBTA service area. In the case of CIP and fare-structure meetings, special efforts were made to locate one or more meetings in environmental justice target communities of concern.

MBTA Capital Investment Program

Each year, the MBTA reviews and updates the MBTA Capital Investment Program (CIP). The CIP provides an understanding of the MBTA's planned capital expenditures for a five-year planning horizon, describes the MBTA's infrastructure and the capital needs for maintaining the system, outlines ongoing and programmed capital projects, and details planned projects that would expand the transportation network. The CIP is a financially constrained document.

The MBTA provides a 30-day public comment period for the CIP and, in 2003, scheduled seven public hearings (accessible to persons with disabilities) all around the MBTA

service area, in Norwood, South Boston, Natick, Cambridge, Newburyport, Roxbury, and downtown Boston. The 2004 round of CIP review included eight public hearings in December 2004 in Malden, Braintree, Lowell, Mansfield, Worcester, Newton, Dorchester, and downtown Boston. All members of the public were invited to attend and to submit comments. In addition, the draft CIP is submitted to the MBTA Advisory Board, approved by the Board of Directors, and forwarded to the Massachusetts state legislature.

OTHER MBTA INITIATIVES

Other MBTA projects and studies typically convene advisory committees to provide for ongoing public input. Typically, the representatives of the public provide guidance on design, siting, mitigation, and other planning matters. Individual projects affecting communities of concern that provide this avenue for public involvement include: Red Line Stations Project, Fairmount Line improvements, Beyond-Lechmere Alternatives Analysis Planning, Transit-Oriented Development Pilot Planning, North Shore Major Investment Study, Silver Line, and Urban Ring. In addition, the MBTA launched a new committee, the Rider Oversight Committee, to establish a strong, ongoing dialogue with members of the public, including riders from communities of concern. The role of the 24 members is to both provide information directly to MBTA management on riders' needs and public views, and also to be open to learning, through discussions, about the MBTA system and operations.

The MBTA held 12 public hearings prior to the decision on its proposed fare increase. Legal notices were published in the *Boston Globe* and the *Boston Herald*. Press releases were sent to other major newspapers in the region, including the *Boston Metro*, *Patriot Ledger*, *Worcester Telegram and Gazette*, and many weeklies, and follow-up communication was undertaken to ensure that the news was published. The MBTA General Manager participated in interviews with television and radio outlets. In addition, the MBTA prepared and posted an advisory notice on subways and buses. Written comments were taken via U.S. mail or by e-mail. Notice was also sent to the PMT and MPOINFO listservers.

MPO Participation

The MBTA is a member agency of the Boston Region MPO and participates in the MPO outreach activities. The MPO has used both traditional and nontraditional means of promoting awareness of MPO processes and interest in environmental justice concerns. Legal notices announcing public review of the certification documents or their amendments are placed in the *Boston Globe*, the *Boston Metro* (the daily newspaper circulated free to transit riders), and the *Bay State Banner* (the region's most widely subscribed minority news publication). Press releases inviting the public to participate in MPO sponsored public workshops and open houses are distributed to all major and most local newspapers in the region. These workshops and open houses are designed to give the public a participatory voice in the planning process. Several local and regional pro-

professional (planning and engineering) and special-interest (accessibility and vision-impaired) organizations include MPO announcements in their e-mail newsletters, websites, or radio broadcasts, and the MPO is working to expand the number. A one-way e-mail listserver, MPOINFO (with more than 1,000 recipients), is used to contact individuals about upcoming events. The list includes municipal officials, legislators, local and regional transportation activists, and interested citizens. Notices are also sent to Environmental Justice Committee members and interested parties, the Regional Transportation Advisory Council, the Access Advisory Committee to the MBTA (representing disability interests in the region), and the MBTA Advisory Board. Some notices to local officials, usually members of city councils and local officials in communities hosting a workshop, are also sent via fax.

All workshops are held in accessible venues, and materials, including meeting notices, are available in accessible formats.

The MPO now consistently uses its website (<http://www.bostonmpo.org>) to post upcoming meetings, agendas, and meeting minutes, and promotes its site at all public discussions. The MPO distributes a bookmark with the wording, "Make me a favorite," followed by the MPO website address. It also totally revamped its website to improve content and navigability, while maintaining compatibility with users' computer capabilities. There is an environmental justice button on the home page leading to an environmental justice page that includes background information, the MPO definition and measures of environmental justice, and links to more detailed information. The entire site is geared to making commenting easy.

The MPO continues to rely on its newsletter, *TRANSREPORT*, to provide the public with information on MPO certification activities. *TRANSREPORT* has a circulation of more than 2,500 individuals and organizations with transportation information who have a history of interest in transportation issues. As workshops draw out new participants, they are added to the *TRANSREPORT* mailing list and to the MPOINFO listserv.

MINORITY REPRESENTATION ON DECISION-MAKING BODIES

[FTA C4702.1 III.3.A (4C)]

MBTA Board of Directors

The MBTA Board of Directors is the governing body that manages the MBTA, and was created by the MBTA enabling statute, GL Massachusetts General Laws, c. 161A. The members of the Board serve two-year staggered terms, and are appointed by the Governor of the Commonwealth. There are nine members of the Board. Two of the current of the members are women, while seven are men. In addition, one member identifies as Asian, while three identify as African-American and four identify as Caucasian.

MBTA Advisory Board

The Advisory Board is also a creation of the MBTA's enabling legislation and is com-

prised of 175 members. The mission is to provide public oversight of the MBTA as well as technical assistance and information on behalf of the 175 community members of the Advisory Board and the transit-riding public. The chief elected official of each of the 175 cities and towns served by the MBTA, or his or her designee, is a voting member. The MBTA has requested that the Executive Director of the Board provide data on the racial and ethnic composition of the Board, but has not received that information to date. Because the Board's membership is fixed by statute and consists exclusively of elected officials or their designees, the MBTA has no practical ability to influence its makeup.

The Rider Oversight Committee (ROC)

The ROC grew out of the MBTA's public discussions of fare policy, and is comprised of eight members representing various advocacy groups, eight senior MBTA managers, eight public members, and four public alternate members. The public members were originally selected by the other 16 members from over 400 applicants. The present membership includes five African-American members and one Hispanic member. As new members continue to be added to replace departing members, the Committee will seek to maintain a diverse membership representative of the MBTA's ridership.

Access Advisory Committee

The Access Advisory Committee to the MBTA (AACT) is a consumer advocacy organization composed primarily of people with disabilities, senior citizens, and representatives of human service agencies. Working closely with the MBTA, AACT strives to ensure that the transportation system of the Boston region is accessible, in addition to being safe and efficient, as guaranteed by the Americans with Disabilities Act (ADA). AACT is managed by a board comprised of six members, all of whom at present are caucasian.

The Program for Mass Transportation Working Committee

This committee was responsible for guiding and advising the MBTA in the preparation of the 2003 Program for Mass Transportation (PMT). Its 15 members represent a wide variety of interests and constituencies, including state agencies, municipalities, and community-based organizations. Of the 15 committee members, three are African-American and one is Asian.

MULTILINGUAL FACILITIES

[FTA C4702.1 III.3.A (4D)]

The MBTA has followed the DOT's 2001 LEP Guidelines in formulating its program for reducing language barriers that may inhibit access to transit services for riders with Limited English Proficiency (LEP). The plan tracks the recommendations listed in those guidelines.

Needs Assessment

In order to ascertain the approximate numbers, locations, and languages of riders who would benefit from LEP services, CTPS collected 2000 census data on the primary languages spoken in households and within MBTA-assessed towns, and produced a map that identifies those census tracts with the highest prevalence of households where a language other than English is the primary language. The map is shown in Figure 3-4. By overlaying the service map of this census data, one may identify the neighborhoods, bus routes, stations, subway lines, and commuter rail lines that serve the areas with the highest proportion of LEP beneficiaries. The data tell us that within the Boston Region MPO, Spanish or Spanish Creole (at 6.1%) is by far the most common primary language other than English. It is followed by Chinese (2.1%), Portuguese or Portuguese Creole (2.0%), Italian (1.9%), and French and French Creole (1.5%). No other primary language is spoken by more than 1.5% of the population overall, but there are urban neighborhoods where language other than these is primary for more than 1.5% of the population.

LEP Plan

The following constitutes the MBTA LEP Plan for providing assistance to LEP beneficiaries over the next 12 months. The Title VI LEP Working Group will annually update the Plan.

1. **Responsibility for development and implementation of the LEP Plan:** The Title VI LEP Working Group and ODCR have developed and ODCR will maintain the Plan, updating the Plan as necessary and at least annually. ODCR will work through the LEP Working Group, which includes representatives from Planning, Marketing, Operations, and Operations Support Departments.
2. **Ongoing policies and procedures for assessing needs:** The MBTA will share the LEP plan with representatives of its Rider Oversight Committee and will publish it on the MBTA website in the principal languages spoken by its ridership to solicit further input on the LEP needs of its ridership. The Plan will be modified as needed to address newly identified needs.
3. **Actions previously taken and changes in prior practices necessary to improve services:** The Title VI Working Group has surveyed the MBTA's current practices and policies regarding written communications to non-English speakers and has determined that more extensive services are needed. This section discusses the present policies and practices and the improvements that will be made in the next 12 months:
 - a. *Translation of existing written materials:* Historically the MBTA has prefaced important written public announcements with a written statement in seven languages advising that recipients who do not read English should have the materials translated into their primary language. While this advice represented a good

faith effort to reach LEP riders, the MBTA recognizes the need to provide textual translations of important documents, and has begun to provide full translation of critical documents into the key languages identified in the needs assessment. This process began with translation of automated fare collection (AFC) advisories and instructions into Spanish, and will be expanded to other documents and to other languages listed in the needs assessment. (In addition, AFC terminals will provide screen language in Spanish and eventually in Chinese.) The Working Group has collected current publications that need to be translated, including this policy, and general information on how to access the system, safety information, fare and pass information, information on the new AFC system, and a description of riders' Title VI rights, including information on how to file passenger complaints. The LEP Working Group will, within the next 90 days, contract (or, if required, issue an RFP for such a contract) with a qualified vendor or vendors for translation services. It will also draft guidelines regarding publications that need to be translated and either posted on the website or made available for dissemination in hard copy. These guidelines will be disseminated to departments that regularly communicate with the public. Individual departments will be responsible for dealing directly with the vendor or vendors to secure translations and for seeing that translated materials are made available to the Information technology Department (ITD) in a format that can be published on the website. ODCR will coordinate and monitor this program quarterly and will report on compliance to the LEP Working Group and senior management. ODCR will also coordinate with the Office of the General Manager and the MBTA CFO regarding decisions on the allocation and budgeting of costs associated with these services.

- b. *Oral Language Services:* At present the MBTA has translated some recorded public service announcements into Spanish that are broadcast in the subway system. Going forward, key announcements will also be recorded in the other languages identified in the needs assessment. these will be broadcast in stations with high LEP ridership, in the relevant language(s) for each station.

The MBTA maintains a staff of telephone operators, some of whom are bilingual in Spanish, and Spanish-speaking customers are often referred to these operators. The Working Group will work with this department to establish a protocol for referral of non-English speakers to operators who are fluent in the appropriate language. The LEP Working Group will work with Operations and with Human Resources to revise the MERS for these positions in order to increase the number and facility of bilingual operators, and to ensure hiring of bilingual customer service and complaint-intake personnel when vacancies are filled from outside the MBTA. As vacancies arise in these groups, the MBTA will seek bilingual skills in one or more relevant languages not presently represented in MBTA staff. This will be a requirement in filling vacant positions, until the MBTA has achieved a base of employed bilingual speakers in the major languages used by riders.

Until the MBTA has adequate bilingual staffing in these positions, the LEP Working Group has recommended that the MBTA contract on a pilot basis with an outside vendor which will provide real-time translation services over the telephone to address emergency situations. Once a vendor has been secured, directions will be provided to the MBTA Police Department, Operation Control Center (dispatchers), telephone operators, customer service agents, and hub station monitors for the availability and appropriate use of this service. This program will be piloted on one subway line to determine the level of demand for and sufficiency of the service. If the service proves useful, it will be expanded to other areas. Joseph Rodriguez, Outreach Development Manager in ODCR, will coordinate and monitor this program under the direction of the Title VI Working Group.

- c. *Training and Information Dissemination on the Rights of LEP Beneficiaries:* The MBTA has undertaken customer service improvements in conjunction with its shift to AFC. Many former collectors are being trained as customer service agents and will be stationed throughout the system. In key stations, or “hubs,” there will be customer information centers staffed by “hub monitors.” Working with the Training Department in Human Resources, ODCR developed a short training module to inform Customer Service Agents and Hub Monitors of passenger rights under Title VI, including the rights of passengers to have access to LEP services and to file Title VI complaints. This training has begun and all employees will be trained as the AFC system is implemented. The Working Group has recommended that this training module also be included in other standard training programs, including New Hire Orientation, Civil Treatment for Managers, and Civil Treatment for Employees, to increase employees’ awareness of their responsibilities under Title VI generally and to LEP beneficiaries in particular.

ODCR has also prepared a short description of Title VI for passengers, including information on how to file a Title VI complaint, which will be translated and posted on the MBTA’s website along with other information of value to LEP beneficiaries.

- d. *LEP Complaint Processing:* LEP complaint processing, as a subset of the overall group of Title VI and other civil rights complaints, will be addressed in the initiatives described in Chapter 2, Section 1, *infra*.

