

# Appendix F Southeast Corridor:

## Mobility Problems and Proposed Solutions



### BACKGROUND

#### EXISTING CONDITIONS

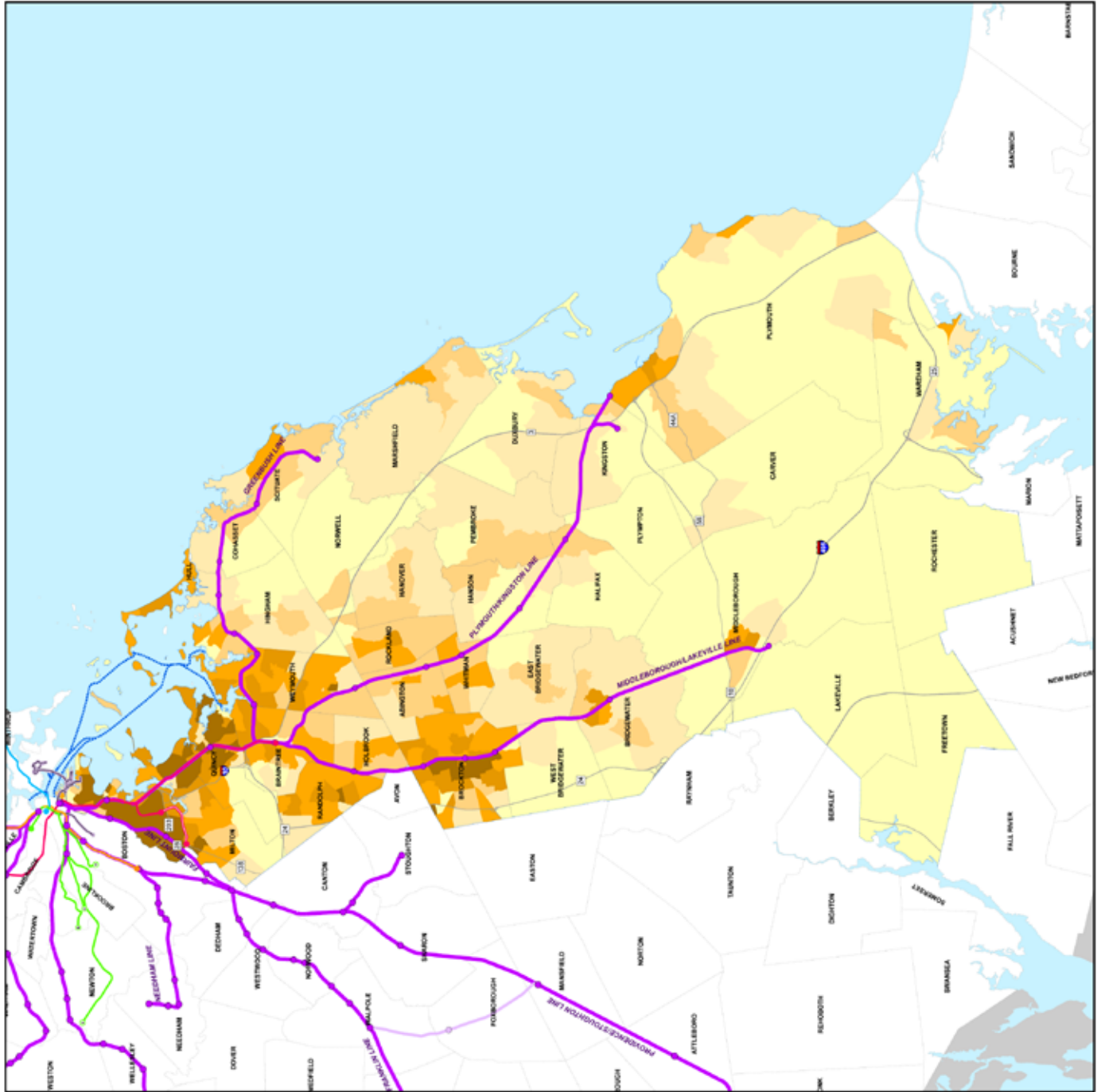
The Southeast Corridor consists of the Boston neighborhoods of South Boston, Dorchester, and Mattapan, the cities of Quincy and Brockton, and 31 towns stretching from Milton to the Taunton River and Buzzard's Bay. These communities range from dense urban neighborhoods, to older industrial cities, to agricultural towns dating back to the Plymouth Colony (later referred to as the "Old Colony"), as well as a very diverse assortment of suburban communities.

The most extensive MBTA rapid transit services are offered in this corridor. The Boston neighborhoods, city of Quincy, and towns of Milton and Braintree have MBTA rapid transit service provided by the Braintree and Ashmont branches of the Red Line, as well as the Mattapan High Speed Line.

There is also an expanding set of commuter rail services in the Southeast Corridor. Those parts of Dorchester and Mattapan not near the Red Line have some commuter rail service provided by the Fairmount Line, which is currently being upgraded. Southeast of Quincy and Braintree, the Middleborough/Lakeville and Plymouth/Kingston Lines, as well as the recently completed Greenbush Line, provide commuter rail service and lie entirely within the Southeast Corridor. The MBTA also operates 15 local bus routes and provides commuter boat service to Quincy, Hingham, and Hull.

In addition to the MBTA, the Brockton Area Transit Authority (BAT) also provides public transportation services in the Southeast Corridor, operating 11 bus routes, one of which connects with the Red Line at Ashmont. The Plymouth & Brockton Street Railway Company and JBL Bus Lines operate private-carrier bus service in the corridor as well.

**MAP F-1**  
**Southeast Corridor**  
**of the MBTA Service Area**  
**Population Density, 2000**



**U. S. Census 2000**  
**Population/Square Mile by TAZ**

- 0 - 500
- 501 - 1,000
- 1,001 - 2,000
- 2,001 - 4,000
- 4,001 - 8,000
- 8,001 - 176,000

**Rapid Transit**

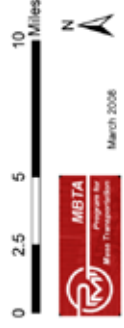
- Blue Line
- Green Line
- Orange Line
- Red Line
- Mattapan High Speed Line
- Silver Line

**Commuter Boat**

- Commuter boat route

**Commuter Rail**

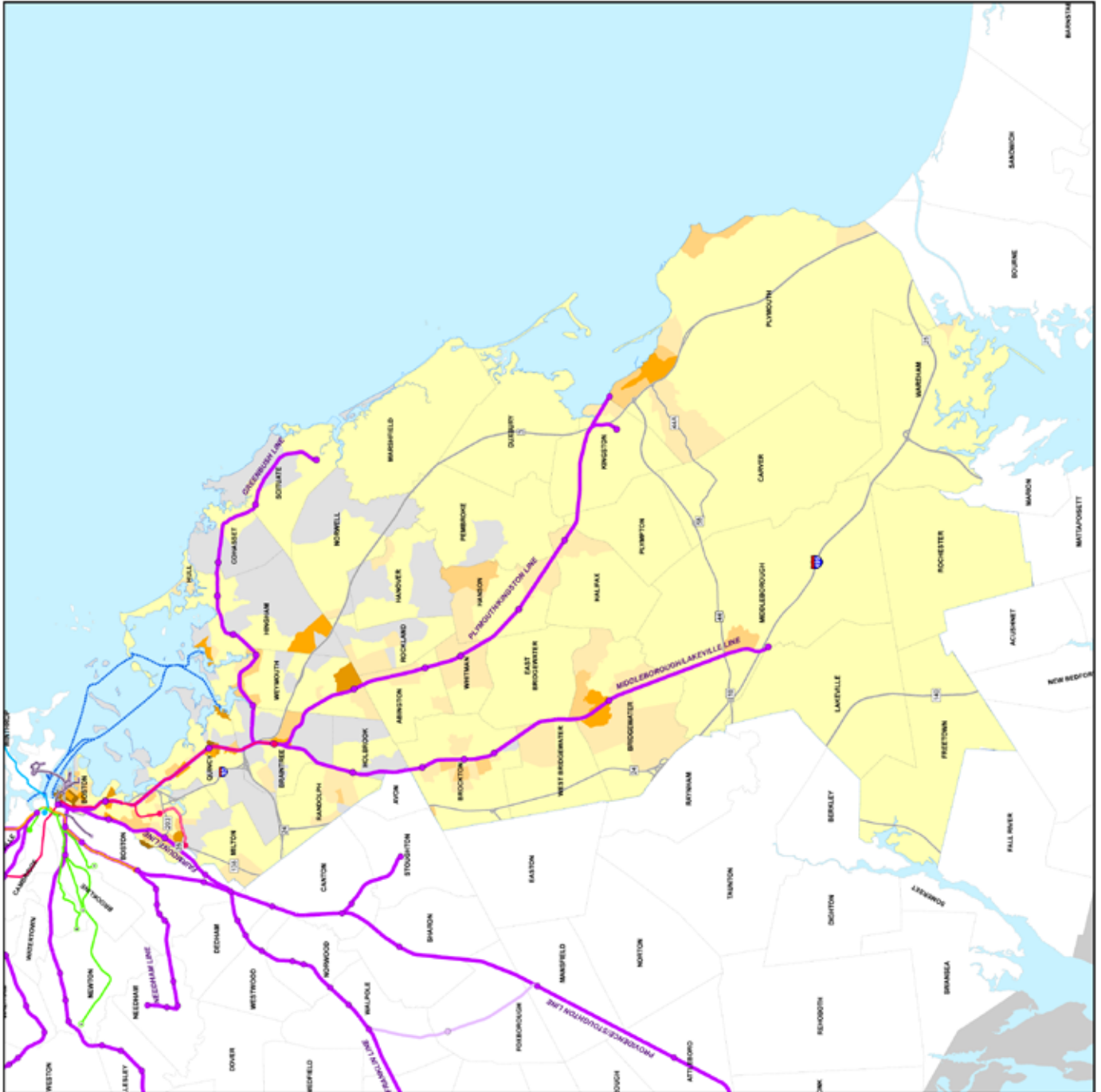
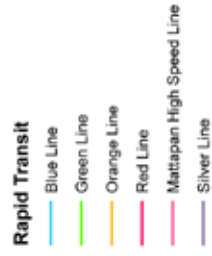
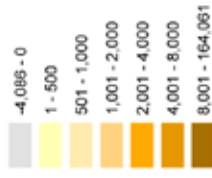
- Commuter rail line



**MAP F-2**  
**Southeast Corridor**  
**of the MBTA Service Area**

**Projected Change in**  
**Population Density**  
**from 2000 to 2030**

**2030 MetroFuture Projection**  
**Change in Population/Sq. Mi. by TAZ**



## POPULATION

The Southeast Corridor is most densely populated in the Boston neighborhoods and the two cities. Milton, Randolph, Braintree, and Weymouth are reasonably dense, but town density tends to decline as one moves further from Boston (see Map F-1). Areas of several communities in the northern part of the corridor are projected to experience decreasing population densities between 2000 and 2030, but densities in most communities are projected to remain stable or to increase moderately (see Map F-2).

According to the U.S. Census, the year 2000 population in the corridor was 721,366, or 11% of the state population. Population is projected to grow by 24% to 895,363 people by 2030.<sup>1</sup> Approximately two-thirds of the corridor communities will experience double-digit growth during this period, while population in two communities, Plympton and West Bridgewater, will more than double. In terms of absolute numbers, almost one-third of total growth will occur in Plymouth and Bridgewater, both of which have commuter rail stations (see Figure F-1).

A proposed large residential development project in Plymouth, called Pinehills, embracing “New Urbanism,” is projected to consist of over 3,000 homes, four golf courses, and a village center. Also planned are 675 homes at Cordage Park, adjacent to Plymouth Station, a classic transit-oriented development.

The largest housing and employment growth impact in this corridor is the redevelopment of the South Weymouth Naval Air Station, portions of which are in Weymouth, Rockland, and Abington. This extensive development is near the South Weymouth commuter rail station and will include 2,855 housing units.

**FIGURE F-1**  
**Southeast Corridor 2000-2030**  
**Population Growth: Top Ten Communities**  
**in Order of Increase**



## EMPLOYMENT

The southernmost communities, with the exception of a few small pockets, have very low employment densities. The northernmost communities generally have the highest employment densities, particularly those closest to Boston and portions of Brockton, as well as those along Route 3, including Weymouth, Hingham, and Norwell. (See Map F-3.) Projections indicate little or no change in employment densities for the majority of the corridor between 2000 and 2030 (see Map F-4).

Employment in the corridor is projected to increase by 25% between 2000 and 2030. Most

<sup>1</sup> Metropolitan Area Planning Council (MAPC), Old Colony Planning Council (OCPC), and Southeastern Regional Planning and Economic Development District (SRPEDD) population and employment forecasts.

communities will experience modest growth in absolute terms.<sup>2</sup> Almost half (46%) of the corridor's employment growth will occur in four communities: Brockton (20%), Weymouth (10%), Plymouth (9%), and Middleborough (7%). Although Quincy will continue to have the corridor's highest employment, its growth will be modest (see Figure F-2).

**FIGURE F-2**  
**Southeast Corridor 2000-2030**  
**Employment Growth: Top Ten Communities**  
**in Order of Increase**



The largest new employment site that is planned in this corridor is redevelopment of the 1,400-acre South Weymouth Naval Air Station, which, in addition to the substantial housing component discussed above, envisions 2 million square feet of commercial development, including the Southfield Science Center for biotech companies. A

2 Ibid.

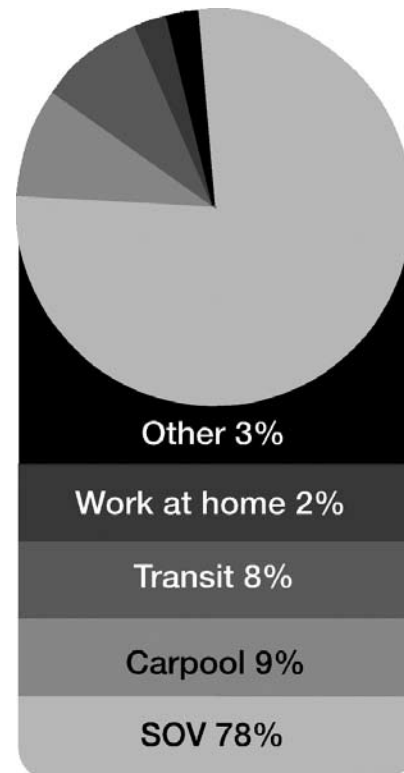
3 Transportation Research Board, *Commuting in America III: The Third National Report on Commuting Patterns and Trends*, NCHRP Report 550, October 2006, p. 3.

large transit-oriented development planned for the corridor is Cordage Park, in Plymouth, with 50,000 square feet of retail and 600,000 square feet of office space planned to be in close proximity to commuter rail. Another potential employment generator in the corridor could be the casino in Middleborough that is currently under consideration, and the upgrading of U.S. 44 to a limited-access highway in Plymouth will also facilitate employment growth.

### JOURNEY TO WORK

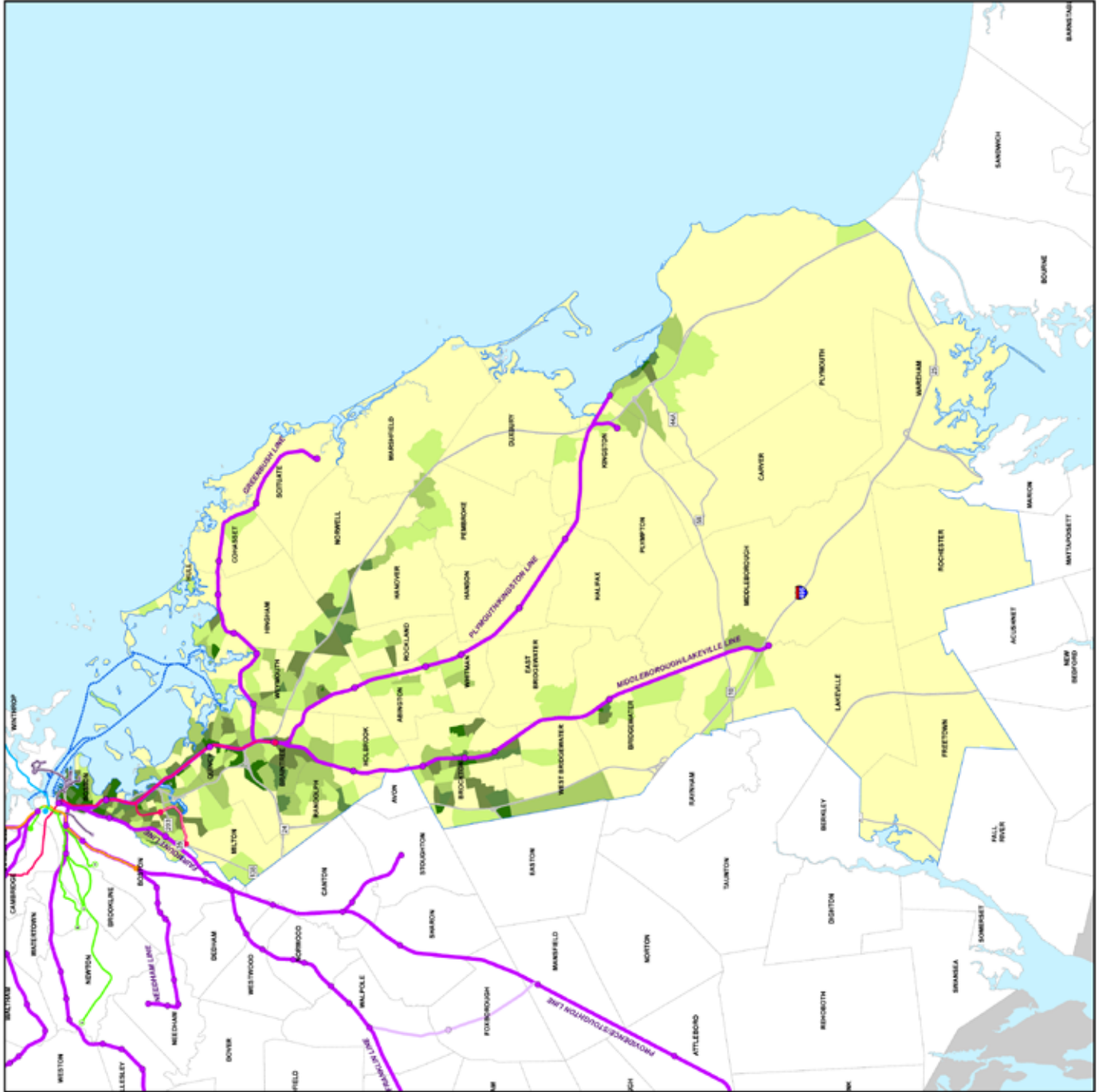
Nationally, work trips account for a small proportion—15%—of all trips.<sup>3</sup> Because most commuting occurs during peak travel times, work-trip volumes determine the capacity needs, as well as the performance, of highway and transit systems. Of all work trips that originate in the Southeast Corridor, 78% were made in single-occupancy vehicles (SOVs) in 2000; 8% were made by transit (see Figure F-3).

**FIGURE F-3**  
**2000 Travel Modes to Work by**  
**Southeast Corridor Residents**

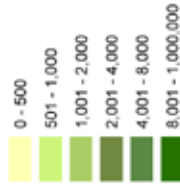




**MAP F-3**  
**Southeast Corridor**  
**of the MBTA Service Area**  
**Employment Density, 2000**



**2000 CTPS Employment Database**  
**Employees/Square Mile by TAZ**



**Rapid Transit**

- Blue Line
- Green Line
- Orange Line
- Red Line
- Mattapan High Speed Line
- Silver Line

**Commuter Boat**

- Commuter boat route

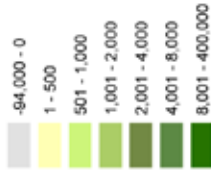
**Commuter Rail**

- Commuter rail line
- Special MBTA sporting events



**MAP F-4**  
**Southeast Corridor**  
**of the MBTA Service Area**  
**Projected Change in**  
**Employment Density**  
**from 2000 to 2030**

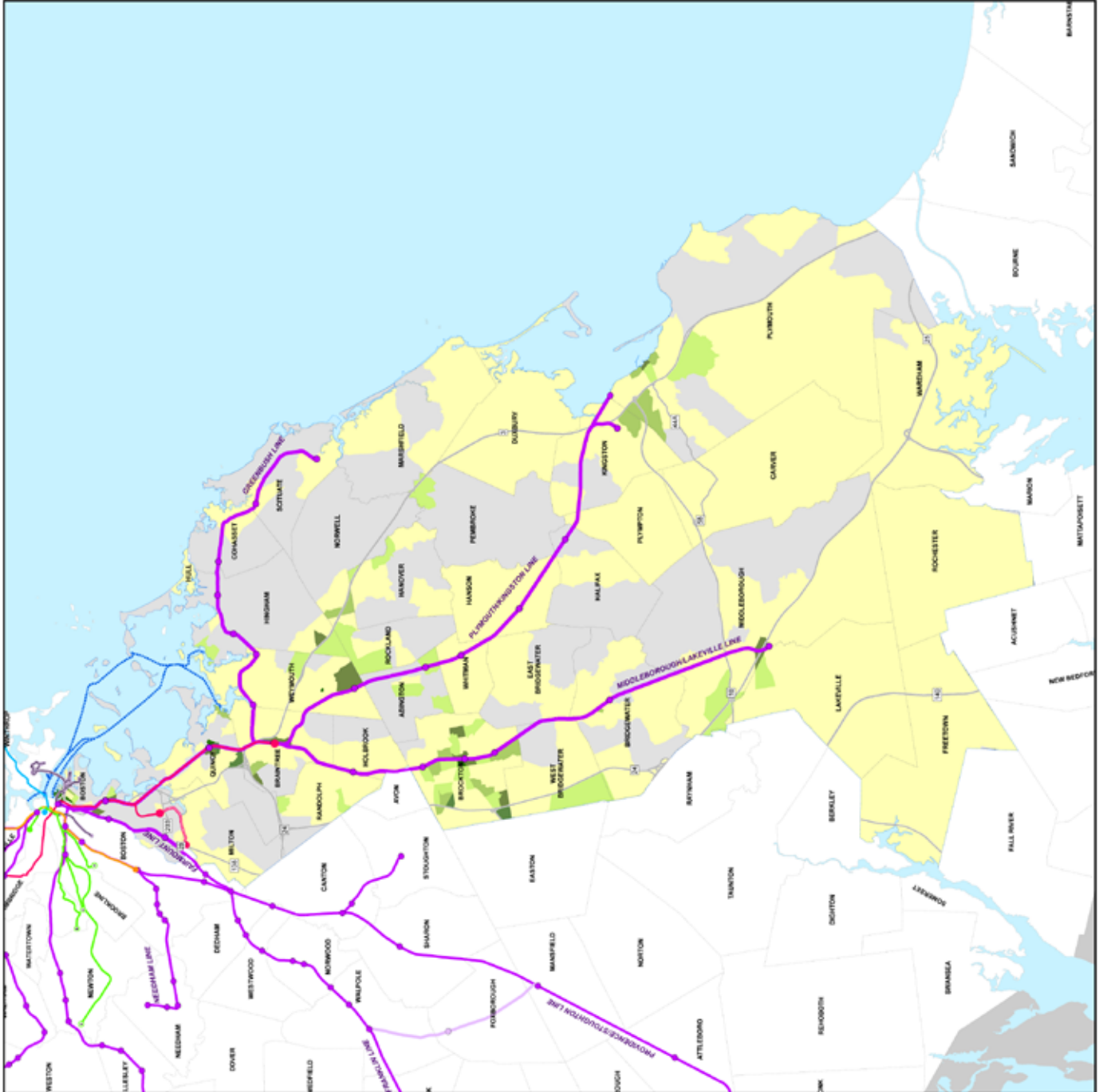
**2030 MetroFuture Projection**  
**Change in Employees/Sq. Mi. by TAZ**



- Rapid Transit**
- Blue Line
  - Green Line
  - Orange Line
  - Mattapan High Speed Line
  - Red Line
  - Silver Line

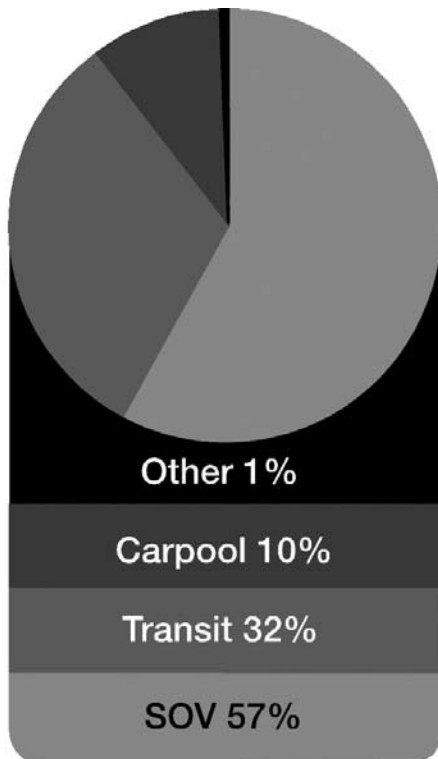
**Commuter Boat**  
 Commuter boat route

**Commuter Rail**  
 Commuter rail line



Only 20% of the work trips from the Southeast Corridor are destined for Boston or Cambridge. However, because of the strong radial MBTA service offerings, 32% of these work trips are by transit (see Figure F-4).

**FIGURE F-4**  
**2000 Travel Modes to Work by Southeast Corridor Residents to Boston and Cambridge**



**TRAFFIC CONGESTION**

Congestion appears to be a factor in the number of Boston commuters using transit in the Southeast Corridor. The entire radial highway system in this corridor connects to the Southeast Expressway, which is designated I-93 and MA Route 3. From the Braintree split, Route 3 continues to the southeast to the Sagamore Bridge over the Cape Cod Canal. The other branch of the Braintree split, which is a continuation of I-93 southbound, leads to MA Route 24, which goes south to Fall River, New Bedford, and, via I-495, to the Bourne Bridge to Cape Cod.

The Southeast Expressway is the most heavily traveled highway into Boston in the region, as it collects traffic coming from the south on Routes 3 and 24, and I-95. Average northbound traffic speeds during the AM peak period are less than 30 mph for most of the length of the Southeast Expressway.<sup>4</sup> The ultimate bottleneck is at Savin Hill, where “zipper line” HOV traffic is forced to merge with general traffic. Two miles north, congestion eases as traffic reaches the reconstructed Central Artery.

Route 24 runs from Fall River to Route 128 in Randolph, and is the main connecting link to Boston from a number of other South Coast highways. I-93 is the most direct route to Boston from Route 24 in Randolph. Average speeds are 60 mph or more on Route 24 south of Stoughton, dropping to 30–44 mph inbound from there to Route 128 in the AM peak period.

Traffic counts indicate that about 68,000 vehicles each way per weekday travel through the segment of Route 24 just south of Route 128. The Middleborough/Lakeville commuter rail line serves the same corridor. Recent passenger counts indicate that there are about 5,100 inbound riders a day on trains on this line as they leave the Holbrook/Randolph Station. This is equal to a 7% share of the combined person-volume on the trains and Route 24, ignoring multiple occupancy of highway vehicles.

The low average speeds on the Southeast Expressway and the availability of transit service via both commuter rail and rapid transit in the corridor contribute to a high transit share for Boston-bound commuters. Where I-93 northbound and Route 3 northbound merge at Braintree, there are about 108,000 vehicle-trips each way per weekday. Recent passenger counts on the Middleborough/Lakeville and Plymouth/Kingston commuter rail lines and on the Braintree Branch of the Red Line show a combined total of about 34,500 rail passengers at the border of Quincy and Boston. This is equal to a 24% share of the combined

<sup>4</sup> 2004 Congestion Management System (CMS) Report, Central Transportation Planning Staff, December 2004.



person-volume on the trains and the Expressway (ignoring multiple occupancy of highway vehicles). The Red Line carries about 71% of the Boston-bound transit riders as it enters Boston.

## TRAVEL PROJECTIONS

The CTPS regional travel-demand model provides estimates of current travel volumes and projections of future travel volumes for all major modes: auto, transit, and walk/bike.

A useful way of tracking travel growth patterns is to look at the change in travel between pairs of municipalities, to include trips beginning and ending in the same municipality. By 2030, there are 67 travel pairs in the Southeast Corridor with projected increases of at least 1,000 two-way trips per day. The projected travel-volume increase for these 67 pairs is 275,677 trips per day (approximately 22%).

Of the 67 pairs with predicted travel volume increases of over 1,000, 30 are for trips that begin and end within one municipality or neighborhood. These account for 69.5% of the total of all projected trip increases of over 1,000 within the corridor. Another 31 increases, accounting for 27.3% of the group total, are between adjoining municipalities or neighborhoods. Interestingly, the largest increases in the corridor are for trips within Brockton (19,509), within Plymouth (18,661), within the South Boston Waterfront area (10,065), within Weymouth (13,320), within Hingham (11,406), and between Quincy and Braintree (11,136). (See Figure F-5.)

The South Boston Waterfront is served by the Silver Line, and Quincy and Braintree are served by the Red Line. Of the communities outside of Boston, only four—Quincy, Braintree, Weymouth, and Hingham—have MBTA local bus service, although the coverage is limited in the latter three. Brockton currently has an extensive bus network operated by Brockton Area Transit. Plymouth is served by the Greater Attleboro Taunton Regional Transit Authority's Plymouth Area Link (PAL) bus network.

**FIGURE F-5**  
**Southeast Corridor Trip Increases 2000-2030:**  
**Top Ten in Order of Increase**



The model also projects nine travel pairs with increases of over 1,000 daily trips between points in the Southeast Corridor and points in other PMT corridors, including seven with the Southwest Corridor and one each with Boston Proper and the Northwest Corridor. The largest of these are trips between Boston Proper and the South Boston Waterfront (15,870), with trips between Cambridge and the South Boston industrial area a distant second (2,057). The predicted increases for the other seven pairs are below 1,600 each.

## ENVIRONMENTAL JUSTICE

The federal government defines environmental justice (EJ) as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, education level, or income with respect to the development, implementation, and enforcement of environmental laws. The MBTA

monitors EJ through implementation of and reporting for Title VI of the Civil Rights Act of 1964.

The Southeast Corridor encompasses several of Boston's densely populated neighborhoods: South Boston, Dorchester, and Mattapan. Almost all of Dorchester and all of Mattapan are classified as minority areas for Title VI, and parts of both are also classified as low-income. The portion of South Boston adjacent to Dorchester is also both minority and low-income. Several other municipalities in the Southeast Corridor include census tracts that are classified as minority: Bridgewater, Brockton, Milton, Quincy, and Randolph. Brockton and Quincy also include census tracts that are classified as both minority and low-income.

Over 30 bus routes operate in this corridor; 14 are classified as minority routes, and 5 are classified as both minority and low-income.

The Red Line's Braintree and Ashmont branches operate in the Southeast Corridor, as does the Mattapan High Speed Line, which connects to the Red Line at Ashmont. Six of the Red Line stations and three of the Mattapan High Speed Line stations (not including Ashmont) in this corridor are classified as minority.

The three Old Colony commuter rail lines operate in the Southeast Corridor. One of these, the Middleborough/Lakeville Line, is one of only two commuter rail lines in the whole system that are classified as minority. Four of the stations in this corridor on this line are classified as minority, and one of these stations is classified as both minority and low-income. None of the MBTA's commuter rail lines are classified as low-income.

## **MOBILITY PROBLEMS AND PROPOSED SOLUTIONS**

### **CAPACITY IMPROVEMENTS ARE NEEDED**

Investments Will Be Needed to Ensure that Sufficient Capacity Is Available to Serve Current and Projected Travel Demand.

### **Problem 1:**

As indicated above, by 2030 the largest growth in intratown trips is projected for areas that currently have limited existing transit services and, therefore, very low transit mode shares. In Weymouth, which has the third-largest projected intratown travel increase in the Southeast Corridor, transit use currently accounts for only 1% of commuting trips and less than 0.5% of all trips. Current MBTA services in the north part of Weymouth include the new Greenbush commuter rail line, with 2 stations, and bus Routes 220, 221, and 222. Route 225 extends for a short distance into the northwest part of town,

Hingham, with the fourth-largest projected increase in intratown trips in the corridor, also has limited transit coverage, and a transit mode share of less than 1% for all trips made within the town. MBTA Route 220 runs across the north side of town and connects at Hingham Center with Route 714, and Route 222 extends into Hingham on the west side of town for a very short distance. The Greenbush commuter rail line stops at West Hingham and Nantasket Junction stations in the north part of town.

### **Proposed Solution:**

Expand MBTA fixed-route service (or partner with local social service providers, town officials, and the Boston Region Metropolitan Planning Organization (MPO) to institute a new demand-responsive service) to connect densely developed residential areas with key activity hubs (including employment, commercial, and educational hubs) along the Route 3 corridor, especially in South Weymouth.

### **Problem 2:**

By 2030, ridership demand on the Middleborough/Lakeville Line is projected to exceed capacity if six-car trains are still in use then.

### **Proposed Solution:**

Extend the platform used by this line at South Station so that trainsets longer than six cars could be used.

### **Problem 3:**

Modeling projections suggest that by 2030, growing demand on three bus routes in the Southeast Corridor may cause passenger-crowding levels that would trigger the need for additional service. These include:

- Bus Route 19 – Fields Corner Station - Ruggles Station via Grove Hall
- Bus Route 22 – Ashmont Station – Ruggles Station via Jackson Square Station
- Bus Route 28 – Mattapan Station – Ruggles Station via Dudley

All three of these routes provide circumferential connections between the Southeast and Southwest Corridors.

#### ***Proposed Solutions:***

- Purchase sufficient additional vehicles to increase peak-period capacity and to ensure that future vehicle loads do not exceed safe and comfortable levels on these three routes. To do so, six additional 40-foot buses would be required. Replacing existing 40-foot buses with 60-foot buses would be another way to increase capacity to meet demand. (Routes 19, 22, and 28 also operate in the Southwest Corridor; those routes are discussed in the Southwest Corridor document on problems and proposed solutions.)
- Implement the Urban Ring and other possible circumferential service.
- Extend BRT service from Dudley Square south along Warren Street to Grove Hall, continuing on Blue Hill Avenue to Mattapan Station and on Washington Street to Ashmont Station.

### **Problem 4:**

Significant improvements in transit service have been made in this corridor over the last several years. The commuter rail system was expanded with the re-opening of the Middleborough/Lakeville and Plymouth/Kingston lines in 1997 and the Greenbush Line in late 2007. However, some de-

sirable destinations in the southeast do not have direct rail transit service to Boston. Although they are currently beyond the boundaries of the MBTA's service area, New Bedford and Cape Cod are areas that could benefit from service extensions.

#### ***Proposed Solution:***

Implement the South Coast Rail project to Fall River and New Bedford.

### **Problem 5:**

Densely populated areas currently served by Silver Line Washington Street lack direct transit connections to jobs and travel at Logan Airport and to the jobs in the rapidly growing South Boston Waterfront.

#### ***Proposed Solution:***

Implement the Silver Line Phase III project.

### **Problem 6:**

Very densely populated areas in the corridor are currently served by MBTA bus Routes 23 and 28, but do not have frequent rapid transit access within a reasonable walking distance (one-fourth mile). In addition, travel times on Routes 23 and 28 are long and unreliable, and Route 23 has difficulty meeting demand because of its use of 40-foot buses in mixed traffic.

#### ***Proposed Solutions:***

- Extend BRT service from Dudley Square south along Warren Street to Grove Hall, continuing on Blue Hill Avenue to Mattapan Station and on Washington Street to Ashmont Station.
- Fairmount Line Improvements: four stations. This project is a State Improvement Plan (SIP) commitment.

### **Problem 7:**

Considerable residential growth has occurred in southern Middleborough, Wareham, and Bourne over the past decade, with substantial portions of these new residents commuting to Boston and Cambridge. However, no direct rail connections exist between these communities and the urban core.

**Proposed Solution:**

Extend commuter rail from Middleborough to Wareham.

**Problem 8:**

Capacity enhancements on the Old Colony Lines are limited by sections of single track.

**Proposed Solution:**

Double-track approximately 12 miles between South Station and Braintree, 24 miles on the Lakeville Line between Braintree and Lakeville, 22 miles on the Plymouth/Kingston Line between Braintree and Plymouth, and 17.5 miles on the Greenbush Line between Braintree and Greenbush.

**ACCESS TO MBTA SERVICES NEEDS TO BE IMPROVED**

**ADA ACCESSIBILITY**

**Problem:**

The MBTA has made strides toward providing ADA accessibility to all of its services. All stations on the three commuter rail lines in the corridor are now accessible. One Red Line station, Wollaston, is not yet accessible, but funds have been programmed in the CIP for design work to make it so. On the Mattapan High Speed Line, Valley Road Station has not yet been made accessible.

**Proposed Solution:**

Valley Road Station is not a high priority for immediate accessibility improvements due to very low ridership and the nearby terrain.

**STATION PARKING**

**Problem 1:**

Access to rail transit services for customers of all abilities is constrained by the availability of parking for automobiles. Currently, parking is at or near capacity at most Red Line and Old Colony stations.

An inventory of station parking that was completed during the fall of 2005 and winter of 2006 shows that parking at the following stations is utilized at 85% of capacity or greater.<sup>5</sup> (See Table F-1.)

**TABLE F-1  
Southeast Corridor  
Station Parking at 85% Usage or Greater**

LINE	STATION	2003 PMT PARKING ENHANCEMENT PRIORITY
<b>Plymouth/ Kingston Line</b>	Whitman	High
	Abington	Medium
	South Weymouth	Medium
	Hanson	Low
<b>Middleborough/ Lakeville Line</b>	Middleborough	Low
<b>Red Line</b>	Braintree	High
	Quincy Center	Low
	Wollaston	Low
	North Quincy	Low
<b>Mattapan High Speed Line</b>	Butler	Low
	Cedar Grove	Low
<b>Ferry</b>	Hingham Ferry Terminal	Medium

**Proposed Solution:**

The MBTA can address inadequate parking capacity either by increasing the number of spaces or controlling demand through measures like raising the price of parking overall or installing automated parking-fee collection at MBTA lots to allow for congestion pricing and to improve enforcement of parking regulations.

When evaluating expansion of parking, it is important to consider the availability of MBTA-owned land, the potential cost of acquiring nearby land, and the potential cost of a multilevel structure.

<sup>5</sup> Fijalkowski, Jared, and Ostertog, Heather, *Inventory of Park-and-Ride Lots at MBTA Facilities*, Central Transportation Planning Staff, February 27, 2007.

Based on these and other feasibility criteria, all of the above stations would have some potential for expansion of MBTA parking.

**Problem 2:**

For some customers, access to rail services is constrained by the lack of bicycle parking. A recent study provided a detailed inventory of bicycle amenities, by MBTA station, that included the location, number, and condition of bike racks, bike rack shelters, and signage directing cyclists to them. The study also noted that, at some stations where bike racks were provided, cyclists did not utilize the racks, but parked their bikes elsewhere.<sup>6</sup> These findings build upon the recommendations of the 2003 PMT to install bike racks at rapid transit and commuter rail stations.

**Proposed Solution:**

The study recommended that the MBTA continue to expand bicycle parking at stations; however, the MBTA does not currently have a standard for determining what the appropriate number of spaces would be for each station. The study therefore also recommended that the MBTA adopt a standard for providing bicycle parking spaces at transit stations.

In instances where bikes were parked at locations other than at bike racks that were provided, the study made recommendations, based on the type of problem observed, including:

- The rack was in an inconvenient location (e.g., far from the platform)
- The rack was not sheltered from the weather
- The rack was in a secluded location that was difficult to find or might encourage theft
- The rack was damaged or difficult to use

The following specific improvements are recommended for stations at which existing bike racks were not used:<sup>7</sup>

**TABLE F-2  
Southeast Corridor  
Bicycle Parking Improvements**

LINE	STATION	BICYCLE PARKING ENHANCEMENT RECOMMENDATION
<b>Red Line</b>	North Quincy	Provide shelter for existing racks.
	Quincy Center	Provide shelter for existing racks.
	Wollaston	Install sheltered racks.
<b>Middleborough/Lakeville Line</b>	Campello	Relocate existing racks to under the shelter.

**CONNECTIONS WITH OTHER RTAs**

Problem: The Southeast Corridor is served by two Regional Transit Authorities (RTAs) that provide bus connections to MBTA services. However, current schedules do not provide many opportunities for convenient transfers between RTA and MBTA services in this corridor.

The Brockton Area Transit Authority (BAT) operates a network of bus routes, mostly within the City of Brockton, where it provides connections to the three commuter rail stations on the Middleborough/Lakeville line: Brockton, Campello, and Montello. All 12 of BAT's routes originate at the BAT Intermodal Transportation Centre on Commercial Street in downtown Brockton, opposite Brockton Station. At Brockton Station, three of the four inbound AM peak-period trains have connections of less than 10 minutes from most of the BAT routes. However, connections from outbound PM peak-period trains are not as close or as reliable. Of the other two commuter rail stations in Brockton, Campello is an intermediate stop on one BAT route, and Montello is an intermediate stop on two BAT routes.

6 Fijalkowski, Jared, and Yaitanes, Justin, 2005–2006 Inventory of Bicycle Parking Spaces and Number of Parked Bicycles at MBTA Stations, Central Transportation Planning Staff, October 2, 2007, Table 6.

7 Ibid.



One BAT route provides a connection to the Red Line at Ashmont Station. As with commuter rail, connections in the AM are more reliable than those in the PM, and the total trip time from Brockton Station to South Station is over an hour. Another BAT route provides a potential connection on two trips during the AM peak period, and two in the PM peak period, with MBTA bus Route 230 at Lisa Drive and Howard Street in Brockton, on the border of Holbrook. Route 230 runs between Montello Station and the Quincy Center Red Line station with an intermediate stop at the Braintree Red Line terminal.

The Greater Attleboro Taunton Regional Transit Authority (GATRA) operates a network of five bus routes that serve Kingston and Plymouth and provide connections to the Kingston and Plymouth commuter rail stations on the Plymouth/Kingston line. All of the GATRA routes originate in Plymouth Center and operate on one- or two-hour headways. Two of the routes stop at Kingston Station and at Cordage Park, where Plymouth Station is located. One route provides connections to two inbound AM peak-period trains at Kingston Station, and the other provides a link to the first outbound PM peak-period train.

GATRA also operates a downtown Middleborough area shuttle. The Middleborough/Lakeville commuter rail station is not on the basic bus route, but is served by a side-diversion on two northbound trips and three southbound trips. The shuttle schedule, however, does not coordinate well enough with train arrival and departure times to provide reasonable connections for commuting.

#### ***Proposed Solution:***

Although the Southeast Corridor is served by BAT and GATRA, current schedules provide few close connections between RTA and MBTA services. In general, RTA bus routes do not function well as commuter rail feeders, as they serve different functions and populations. Most RTA routes provide local service on even headways, while commuter rail provides long-distance com-

muter service and operates on uneven headways due to a number of equipment and operational constraints. In addition, because RTA routes have frequent stops and many do not provide direct service to stations, using them to access stations is much slower than driving.

Adjusting the RTA services to meet the commuter rail schedules would inconvenience customers making local trips. Changing the commuter rail schedules to coordinate with RTA services would require significant capital and operating costs without significantly improving service for most commuter rail riders. The best solution, therefore, would be to create RTA feeder services to commuter rail.

The MBTA should work with GATRA and with BAT to select one or more stations on the Plymouth/Kingston Line and one or more stations on the Middleborough/Lakeville Line, respectively, and to determine the number and alignment of routes that would be required to provide adequate feeder services.

The 2003 PMT evaluated and recommended two commuter rail feeder routes to two stations on the Plymouth/Kingston Line that do not currently have bus connections: one from Hanover via Rockland to Abington station, and the other from South Duxbury via Pembroke to Hanson Station.

## **INFRASTRUCTURE ENHANCEMENTS ARE NEEDED**

### **Problem:**

In order to continue to maintain and improve service quality as ridership grows and as technologies and materials improve, the MBTA will need to continually invest in infrastructure enhancements.

### **Proposed Solution:**

The following table shows some of the enhancement projects that have been identified as future needs:

**TABLE F-3  
Southeast Corridor  
Infrastructure Enhancement Projects**

<b>RED LINE</b>	
<b>ASSET CATEGORY</b>	<b>PROJECT DESCRIPTION</b>
Communications	Install single-mode fiber-optic cable along the Red Line.
Facilities	Implement Phase II of the Red Line ventilation improvements, which includes additional vent shafts in the tunnel between Broadway and Charles/MGH stations.
Power	Replace all 125-volt DC emergency lighting systems at some stations on the Red Line.
Signals	Consolidate the cable plant and signal houses at the JFK/UMass and North Quincy stations on the Red Line.
<b>COMMUTER RAIL</b>	
<b>ASSET CATEGORY</b>	<b>PROJECT DESCRIPTION</b>
Facilities	Extend cables at the Kingston layover facility on the Plymouth/Kingston Line to allow for proper positioning of trainsets on layover tracks.
Maintenance facilities	Construct additional midday storage for commuter rail trains used in south-side operations.
Power	Install ventilation fans at the Middleborough and Kingston layover facilities.
Signals	Implement Phase II of the South Bay Track & Signal project, including the installation of three additional signal interlockings and minor track work leading into the storage and inspection facility in South Boston. This work will support additional system expansion on the south side.

## **A STATE OF GOOD REPAIR NEEDS TO BE ACHIEVED**

### **Problem:**

A number of system preservation projects must be addressed in the short- to mid-term to bring the system into a state of good repair and to ensure the safety of passengers and reliability of service.

### **Proposed Solution:**

Some of the specific projects needed to bring the system into a state of good repair and maintain it in that condition are included in Table F-4.

**TABLE F-4  
Southeast Corridor  
State-of-Good-Repair Projects**

<b>BUS</b>	
<b>ASSET CATEGORY</b>	<b>PROJECT DESCRIPTION</b>
Maintenance facilities	Upgrade/repair Cabot and Quincy bus garages
<b>MATTAPAN HIGH SPEED LINE</b>	
<b>ASSET CATEGORY</b>	<b>PROJECT DESCRIPTION</b>
Revenue Vehicles	Replace PCC cars
<b>RED LINE</b>	
<b>ASSET CATEGORY</b>	<b>PROJECT DESCRIPTION</b>
Bridges	Rehabilitate two bridges on the Red Line (plus one on the Mattapan High Speed Line) that are rated structurally deficient.
Maintenance facilities	Rehabilitate the Cabot facility on the Red Line: expand the shop, the office, and staff facilities.
Power	Replace DC breakers at the Cabot facility switch houses on the Red Line.
Revenue vehicles	Replace Red Line cars to allow the retirement of the No. 1 fleet, which was purchased in 1969.
Signals	Upgrade the signal system at Ashmont Station and at the junction of the Ashmont and Braintree branches.
Stations	Upgrade Wollaston Station to alleviate flooding and drainage problems
Track/right-of-way	Reconstruct the Red Line track at the Clayton Street curve (in Dorchester) to eliminate speed restrictions (correct for deferred maintenance).
Track/right-of-way	Surface, and tamp the tracks and themit weld the rail to improve the quality of service on the Red Line.
Track/right-of-way	Deactivate Red Line switches that do not meet track standards.
Track/right-of-way	Replace the existing 150-pound-type third rail with new 85-pound-type third rail on the Ashmont Branch of the Red Line. This would combine a lighter type of third rail and improved electrical technology to deliver third-rail power and to improve traction on this section of track.
<b>COMMUTER RAIL</b>	
<b>ASSET CATEGORY</b>	<b>PROJECT DESCRIPTION</b>
Bridges: Fairmount Line	Replace/rehabilitate 10 bridges on the Fairmount Line that are rated structurally deficient.
Facilities: Needham Line	Replace the retaining wall behind the mini-high-level platform at Needham Heights Station on the Needham Line, which has reached the end of its useful life.
<b>BOAT</b>	
<b>ASSET CATEGORY</b>	<b>PROJECT DESCRIPTION</b>
Docks	Repair/replace boat docks at Quincy, Long Wharf, and Hingham Ship Yard.