

Appendix G

Central Area:

Boston Proper and Circumferential Mobility Problems and Proposed Solutions



BACKGROUND

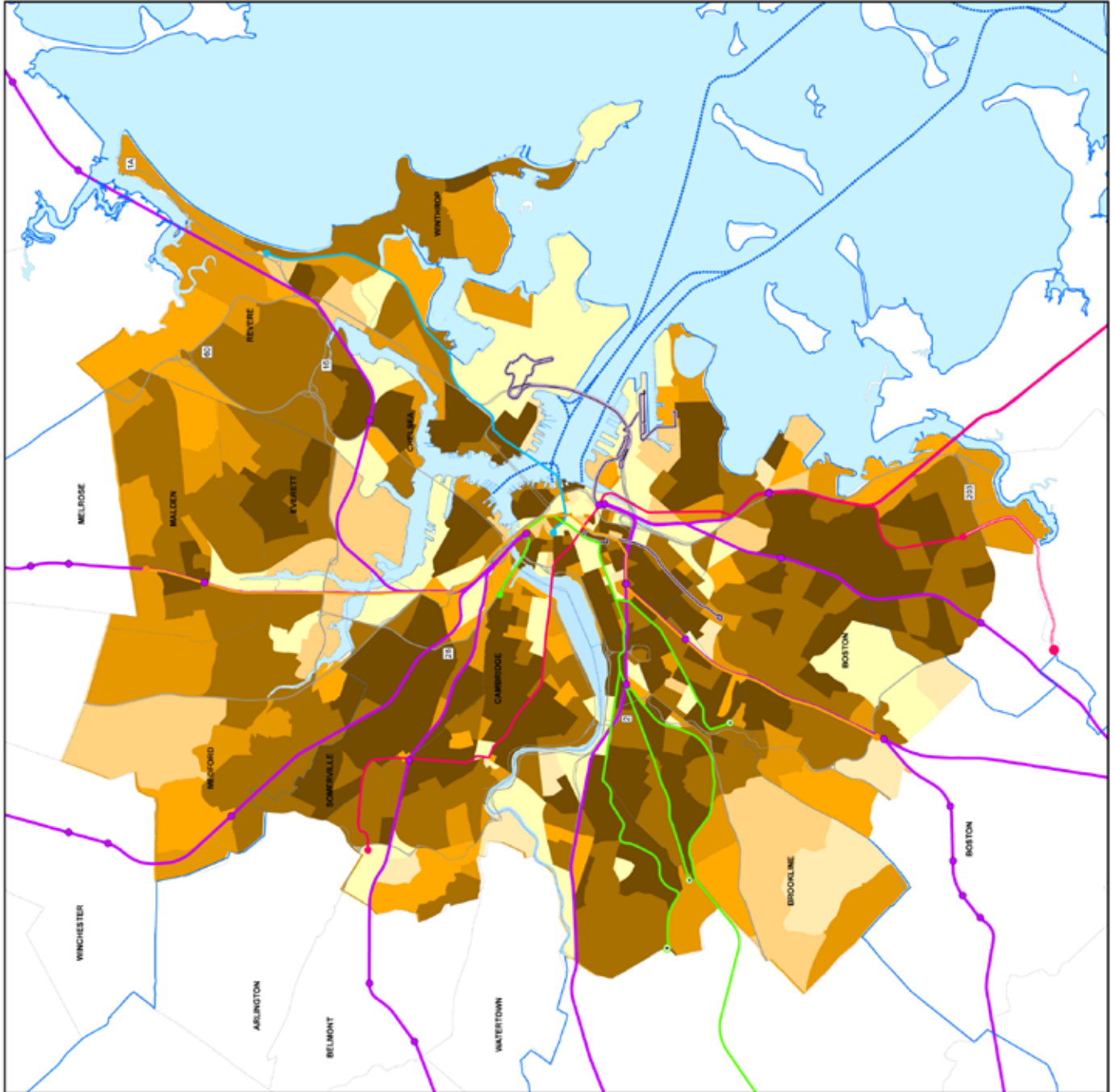
EXISTING CONDITIONS

The Central Area consists of most of Boston (excluding Hyde Park, Roslindale, West Roxbury, and Mattapan) and nine communities surrounding the city: Brookline, Cambridge, Somerville, Medford, Malden, Everett, Chelsea, Revere, and Winthrop. Most parts of the Central Area are also the close-in components of the six radial corridors. The exception is Boston Proper, which is not included in any radial corridor. Boston Proper is the part of the city that lies northeast of Massachusetts Avenue and is bordered by the Charles River, Boston Harbor, Fort Point Channel, and the Southeast Expressway.

All five rapid transit lines, plus the two commuter rail systems, converge in Boston Proper. The oldest parts of the system, the heaviest ridership, and the most serious congestion in stations and terminals occurs in Boston Proper. Consequently, adequate corridor coverage is not an issue in the way it is in the geographically extensive radial corridors. Instead, capacity, modernization, and connectivity define the challenges the MBTA faces here.

The Central Area encompasses most of the rapid transit system and much of the local bus network. Of the rapid transit system, only the Riverside Branch of the Green Line, the Mattapan High Speed Line, and Braintree Branch of the Red Line extend beyond the Central Area. The commuter rail system has three stations in Boston Proper: North Station, South Station, and Back Bay Station. While most commuter rail lines extend deep into the radial corridors, there are some commuter rail stations beyond Boston Proper that are in the Central Area: Chelsea, Malden Center, West Medford, Porter Square, Yawkey, Ruggles, Forest Hills, Uphams Corner, and JFK/UMass.

MAP G-1
Central Area
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 - 20,000
- 20,001 - 175,061

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

- Commuter Boat**
- Commuter boat route

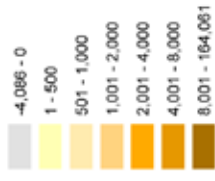
- Commuter Rail**
- Commuter rail line



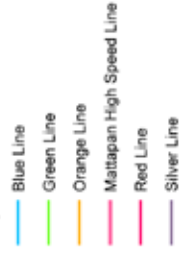
MAP G-2 Central Area of the MBTA Service Area

Projected Change in Population Density from 2000 to 2030

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



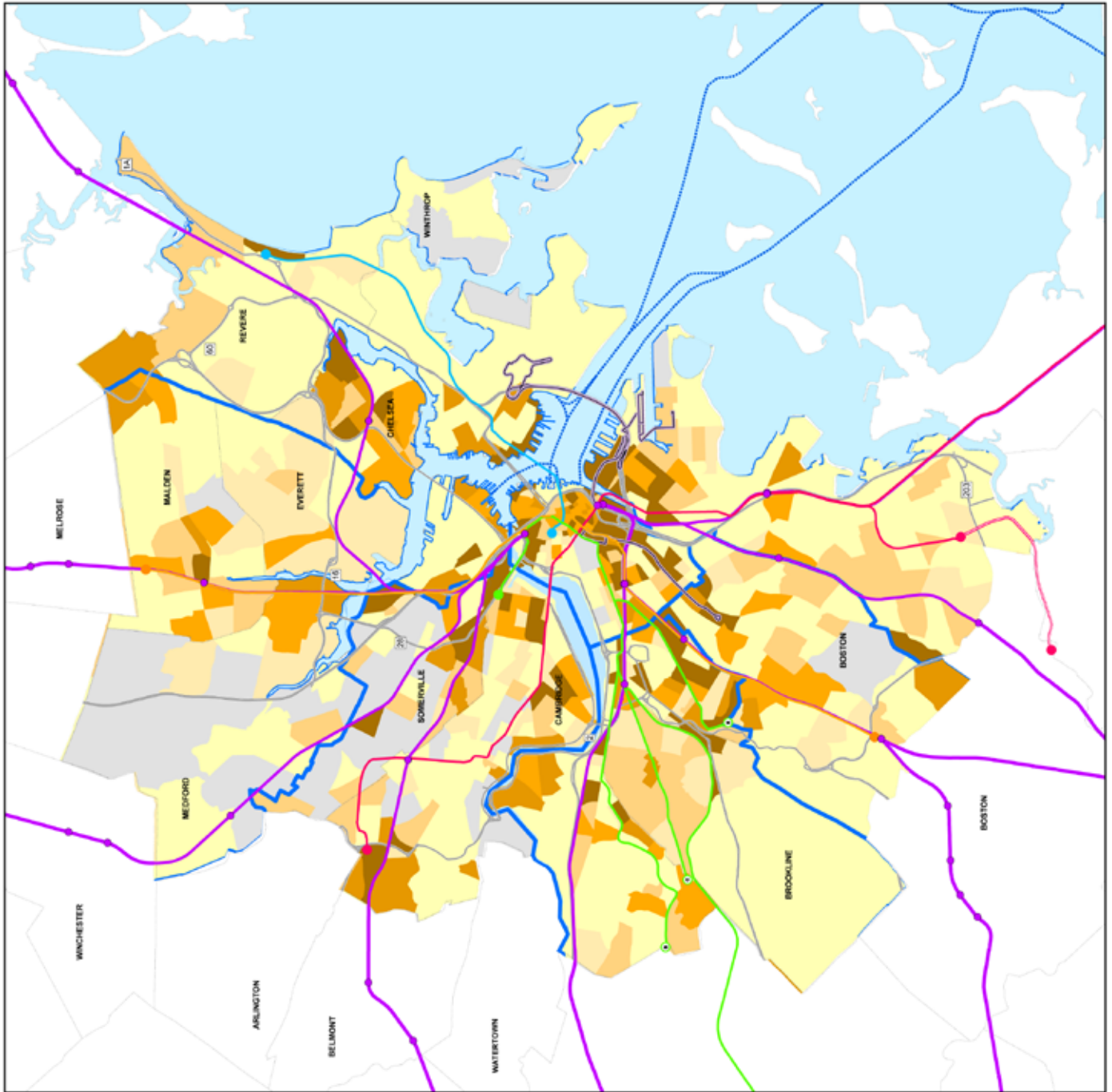
Rapid Transit



Commuter Boat



Commuter Rail



Because of the relatively high availability of transit services in the Central Area, the transit share of trips is substantially higher than in the outlying parts of the MBTA service area. The rapid transit and bus services across the Central Area, and commuter rail ridership at stations in Boston Proper, are responsible for this high transit share. The Central Area commuter rail stations outside of Boston Proper do not generate ridership nearly as significant as the other MBTA markets do. These stations are, however, considered promising sites for future transit-oriented development, and as such are discussed thoroughly in the analyses of radial corridors.

As the mode share estimates indicate, the radial nature of the MBTA system works well for commuters who live in the Central Area and work in Boston Proper. However, as the region has grown, particularly in suburban areas, demand has increased for travel to and between areas outside of Boston Proper. Proposals to better serve circumferential travel corridors are presented in this section.

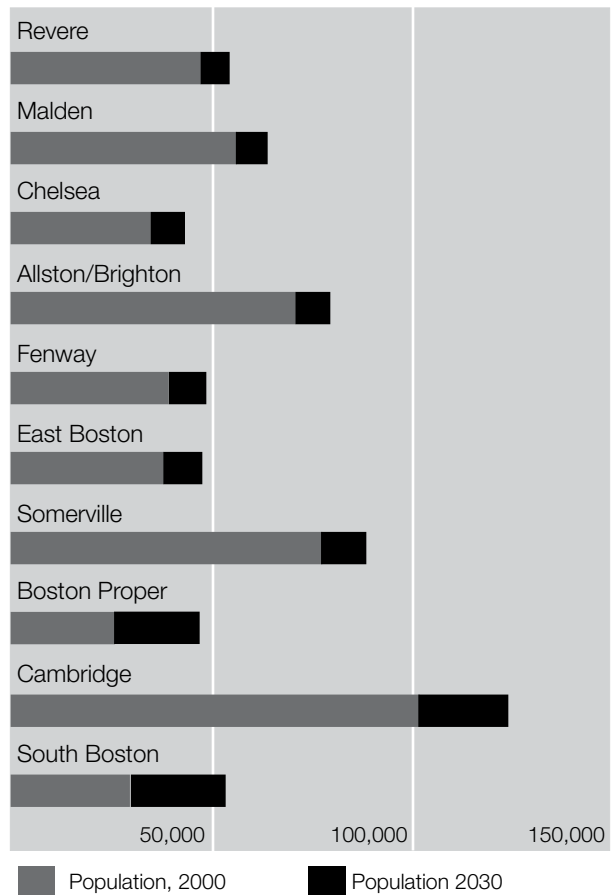
POPULATION

Many of the most densely populated communities and neighborhoods in the MBTA's service area are located in the Central Area (see Map G-1). Although most Central Area communities have zones where population densities are projected to remain relatively stable over the next 25 years, all but Winthrop also have areas where densities are expected increase substantially. The largest increases in population density are projected to occur in zones in Boston Proper, Allston/Brighton, Cambridge, Chelsea, Revere, and Somerville. (See Map G-2.)

According to the U. S. Census, the Central Area's 2000 population was 983,445. By 2030, this number is projected to increase 17% to 1,155,088.¹ Overall, 60% of the Central Area's growth will occur in Boston neighborhoods, with the highest rate of growth in the areas of Bos-

ton that are not currently as densely populated: South Boston is expected to increase by 79% (mostly within the rapidly developing Waterfront area), while population in Boston Proper itself will increase by 85%. Outside of Boston, Cambridge and Somerville will experience the highest rate of population growth, increasing by 22% and 24% respectively. (See Figure G-1.)

FIGURE G-1
Central Area 2000-2030 Population Growth
Top Ten Communities/Neighborhoods
in Order of Increase



Many of the larger housing developments planned, proposed or under development in the Central Area are transit oriented: NorthPoint adjacent to the Green Line Lechmere Station in East Cambridge, Somerville and Boston with 2,500 residential units; Assembly Square, which includes a proposed new Orange Line Station

¹ Metropolitan Area Planning Council (MAPC) population and employment forecasts.

in Somerville and 1,332 housing units; the Blue Line Wonderland Station development in Revere with 902 units; and the Orange Line Forest Hill Station development in Jamaica Plain with 730 units.

EMPLOYMENT

Concentrations of dense employment are found not only in Boston neighborhoods, but are also scattered throughout almost all Central Area communities (see Map G-3). The pockets of highest employment density increases have been projected for Boston, Cambridge, Somerville, and Revere. Stable or moderate changes in employment density are projected for most of Medford and Revere. Employment densities have been projected to decrease in large parts of Brookline, Boston, Cambridge, Malden, and Everett. (See Map G-4.)

Overall, the number of jobs in the Central Area is projected to increase by 15% between 2000 and 2030. More than 90% of this growth is expected to occur in Boston, with most of the other communities experiencing modest growth in absolute terms.² Despite projected citywide employment growth in Boston and Cambridge, parts of both cities are projected to experience employment decline. Minor citywide losses have been projected for Everett and Malden. (See Figure G-2.)

FIGURE G-2
Central Area 2000-2030 Employment Growth
Top Ten Communities/Neighborhoods
in Order of Increase

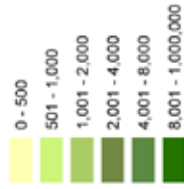


As with housing, the larger envisioned employment developments in the corridor are transit oriented, and include North Point, a partially completed development adjacent to the Green Line's Lechmere Station, whose building will be located in East Cambridge, Somerville, and Boston, with 2.2 million square feet of office space as well as residential units; Fan Pier and Waterside Place, both served by the Silver Line in South Boston, with 1.2 million square feet of office space and .75 million square feet of retail space, respectively; the Hines development at South Station, which is served by the Red Line, Silver Line, and commuter rail, with over 1 million square feet of office space; and Assembly Square, in Somerville, which includes a proposed new Orange Line station and one million square feet of retail space.

² Ibid.

MAP G-3
Central Area
of the MBTA Service Area
Employment Density, 2000

2000 CTPS Employment Database
Employees/Square Mile by TAZ



Rapid Transit

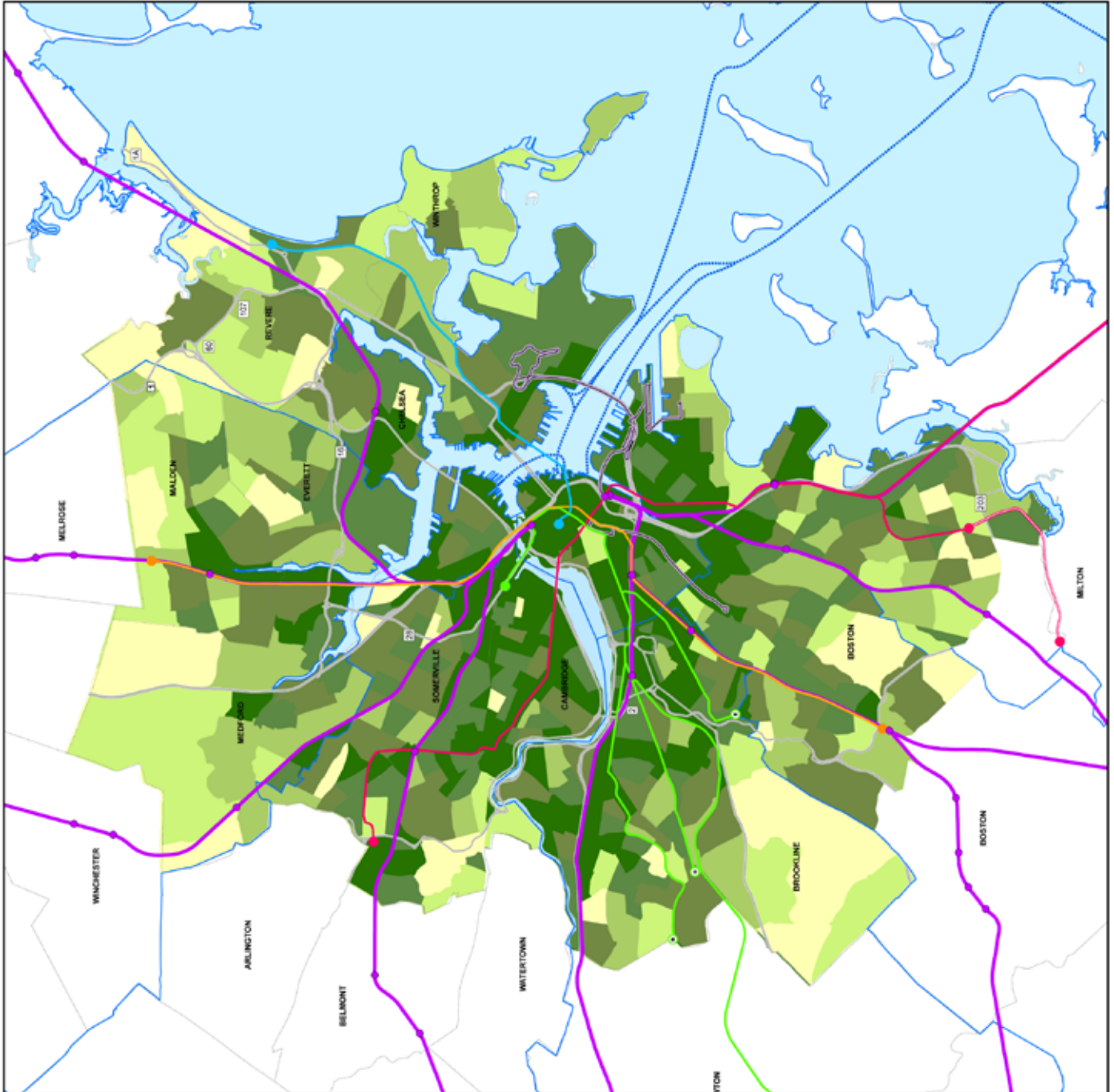
- Blue Line
- Green Line
- Orange Line
- Red Line
- Mattapan High Speed Line
- Silver Line

Commuter Boat

- Commuter boat route

Commuter Rail

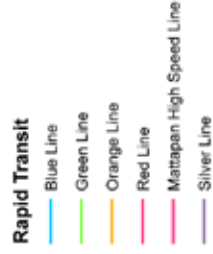
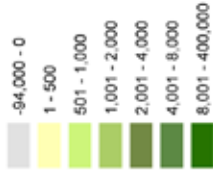
- Commuter rail line



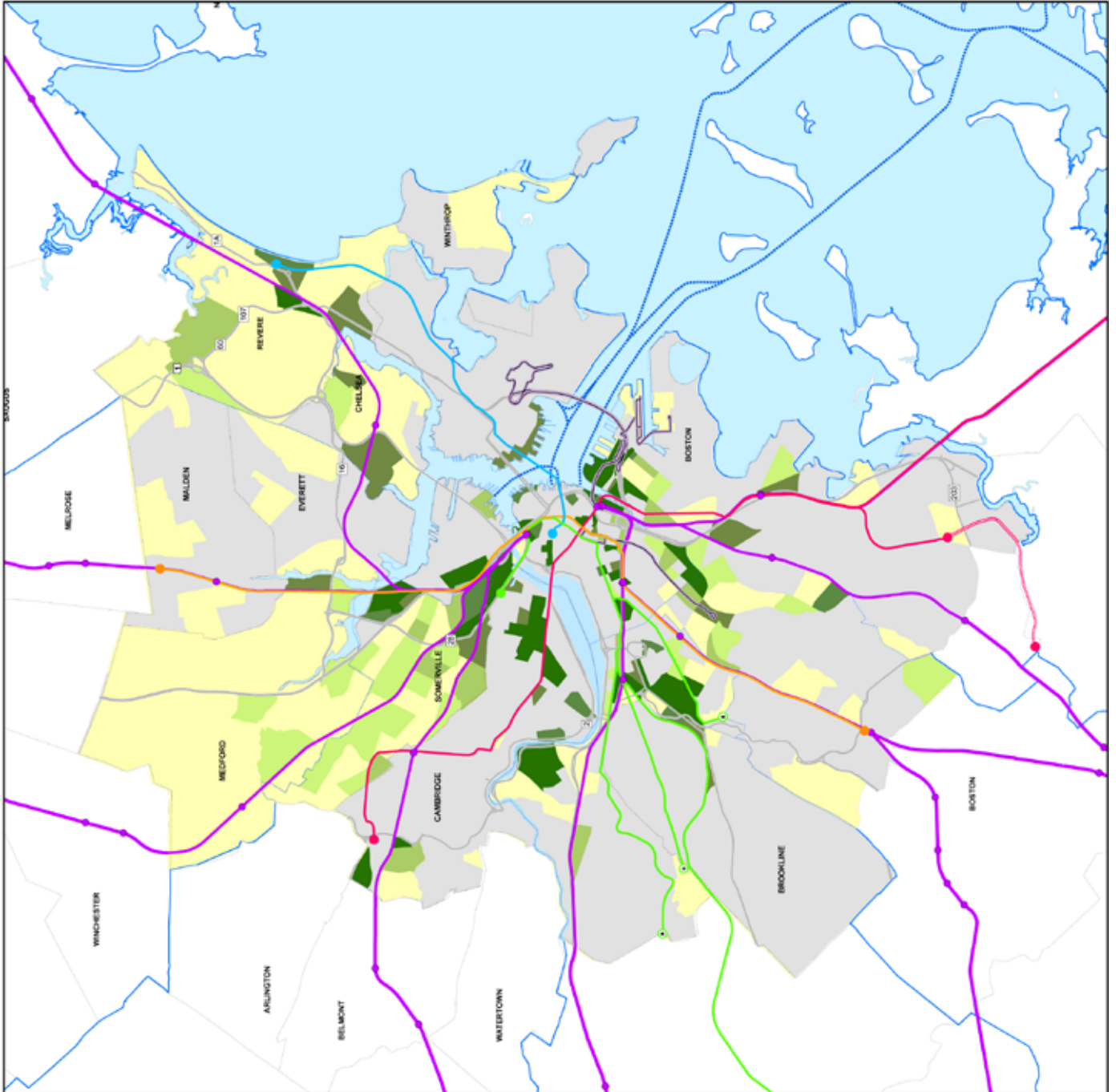
MAP G-4
Central Area
of the MBTA Service Area

Projected Change in Employment Density from 2000 to 2030

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



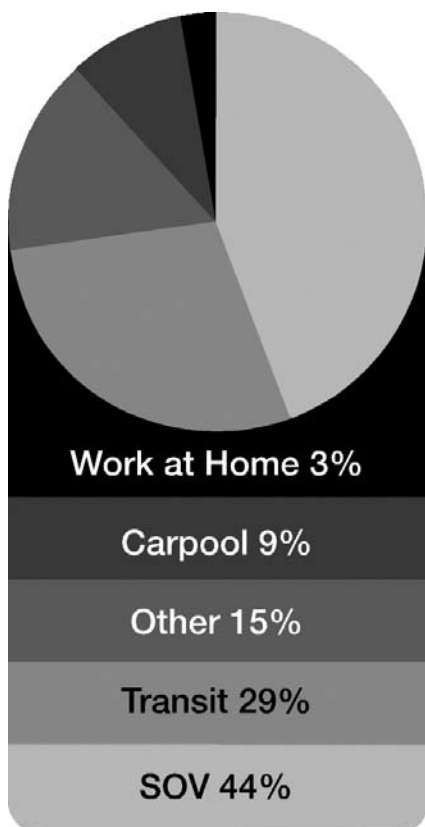
March 2008



JOURNEY TO WORK

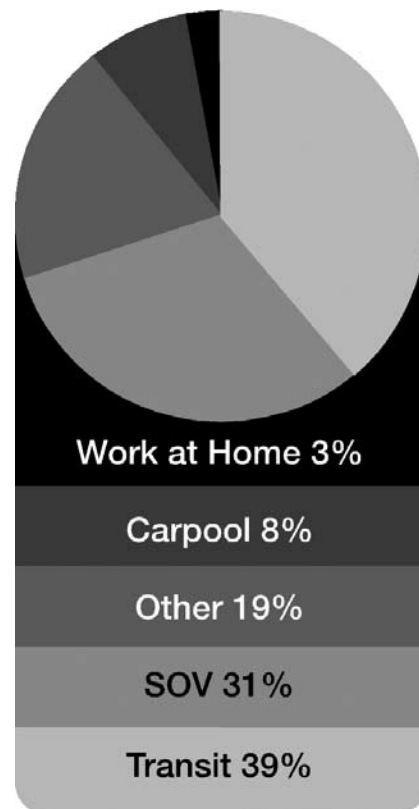
Nationally, work trips comprise a small proportion—15 %—of all trips.³ Because most commuting occurs during peak travel times, work trips determine the capacity needs, as well as the performance, of highway and transit systems. Forty-four percent of all work trips that originated in the Central Area were made in single-occupancy vehicles (SOVs) in 2000, and 29% were made by transit. (See Figure G-3.)

FIGURE G-3
2000 Travel Modes to Work by Central Area Residents



A majority of area residents' work trips, 62%, have destinations in Boston and Cambridge. Because of the concentration of MBTA service in the Central Area, almost 40% of these trips are made on transit, while only around one-third are by SOVs. (See Figure G-4.)

FIGURE G-4
2000 Travel Modes to Work to Boston and Cambridge by Central Area Residents



TRAVEL PROJECTIONS

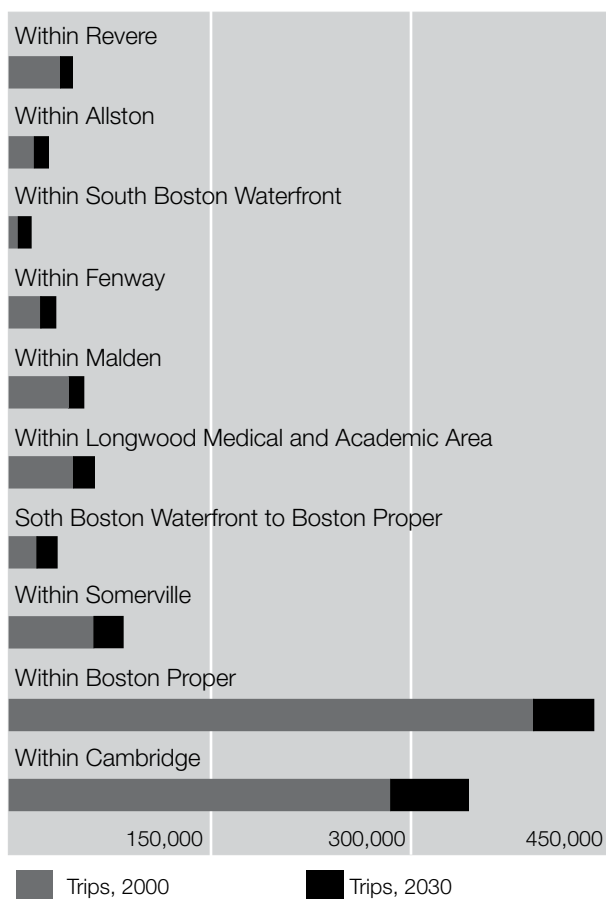
The CTPS Regional Travel Demand Model provides estimates of current travel volumes and projections of future travel volumes for all major modes: auto, transit, and walk/bike. A useful way of tracking travel growth patterns is to look at the change in travel between pairs of municipalities, and to include trips beginning and ending in the same municipality. By 2030, it is projected that there will be 57 travel pairs in the Central Area with predicted increases of at least 1,000 two-way trips per day. The projected travel volume increase for these 57 pairs is 367,772 trips per day (approximately 21%).

Of the 57 pairs with projected travel volume increases of over 1,000, 20 are in trips entirely within one municipality or one Boston neighborhood, and 24 are between directly adjoining municipali-

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

ties or Boston neighborhoods. The largest increases in the Central Area are trips made entirely within Cambridge (58,013), within Boston Proper (44,323), within Somerville (21,803), between Boston Proper and the South Boston Waterfront (15,870), within the Longwood Medical and Academic Area (15,541), within Malden (11,845), within the Fenway neighborhood (10,597), within the South Boston Waterfront (10,065), and within Allston (9,964). (See Figure G-5.)

FIGURE G-5
Central Area Trip Increases 2000-2030
Top Ten Communities/Neighborhoods
in Order of Increase



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.

Boston Proper encompasses the densely populated neighborhoods of the North End, West End, South End, Back Bay, Beacon Hill, and Chinatown. Parts of Boston Proper are classified as minority areas or as both low-income and minority areas for Title VI.

Fifty-five bus routes run through this corridor, 30 of which are classified as minority and 17 as both minority and low-income.

The Silver Line Washington Street BRT line operates in this area. All nine Silver Line stops in Boston Proper are classified as minority, and five of these are classified as both minority and low-income.

All rapid transit lines operate in this area. Thirteen of the rapid transit stations in Boston Proper are classified as minority, and six of these are classified as low-income as well.

Additionally, both termini and one additional station for the region's commuter rail lines are located in Boston Proper. EJ discussions for the Central Area municipalities that lie outside of Boston Proper are included in the applicable radial corridor appendices.

BOSTON PROPER 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:

Currently, travel by MBTA between the Back Bay, Roxbury, Fenway, Brookline, and Newton to Logan Airport, the Boston Convention and Exhibition Center, and the rapidly developing South Boston Waterfront is a "three-seat ride." This negatively impacts the convention-dependent hospitality industry, as well as severely inconveniencing air travelers, workers, and residents.

Proposed Solution:

Implement the Silver Line Phase III project.

Problem 2:

Transit travel to the business districts in Cambridge—especially near Kendall and Harvard Squares—is currently difficult for East Boston and North Shore residents. In addition, Cambridge residents do not have direct rapid transit access to the northern part of the financial district near State and Aquarium Stations on the Blue Line.

Proposed Solutions:

- Build a pedestrian tunnel between State Street and Downtown Crossing Stations.
- Red Line–Blue Line rail connector.

Problem 3:

Very densely populated areas of Roxbury and Dorchester are currently served by MBTA bus Routes 23 and 28. These heavily used routes terminate at Ruggles Station on the Orange Line, where large numbers of riders transfer in order to travel to Boston Proper. The neighborhoods served are not within a reasonable walking distance (one-fourth of a mile) of conventional rapid transit services, the routes are long and unreliable, and Route 23 has difficulty meeting demand since it uses 40-foot buses in mixed traffic.

Proposed Solution:

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:

The lack of a direct connection between North and South Stations makes many types of trips cumbersome using transit. North-side commuter rail users need better direct access to the Back Bay (and the Ruggles area and Longwood Medical and Academic Area). Commuters on the south-side lines currently must transfer to travel via rapid transit from South Station to Government Center and areas further north in Boston.

Proposed Solution:

Build the North-South Rail Link.

Problem 5:

Track capacity at South Station limits service expansion.

Proposed Solution:

Add tracks as a component of the redevelopment of the U.S. Postal Service South Station Annex.

ADA ACCESSIBILITY NEEDS TO BE IMPROVED

Problem:

Although the MBTA has made strides toward providing ADA accessibility to all of its services, some gaps still remain. On the Green and Blue Lines, Government Center Station, and on the Green Line, Science Park and Boylston Stations, have not yet been made accessible.

Proposed Solution:

All of these stations are high priority for near-term accessibility improvements.

INFRASTRUCTURE ENHANCEMENTS ARE NEEDED

Problem:

To improve service capacity and flexibility, more Green Line trains need to be able to reverse direction at Park Street.

Proposed Solution:

Park Street crossover tracks on Green Line.

A STATE OF GOOD REPAIR NEEDS TO BE ACHIEVED

Problem:

The signal system in the Green Line Central Subway dates from the 1920s.

Proposed Solution:

Replace the Green Line central subway signal system.

CIRCUMFERENTIAL MOBILITY PROBLEMS AND PROPOSED SOLUTIONS

The Boston Region Central Area is home to many major trip generators, including medical, educational, and cultural institutions, densely populated residential areas, and high-density employment and retail. Circumferential travel in the area using the rapid transit system is constrained by the hub-and-spoke nature of the existing network. To make a trip between the spokes using rapid transit, a rider must travel through the congested central subway system, and travel back out to reach the final destination.

As the mode share estimates indicate, the radial nature of the MBTA system works well for commuters who live in the Central Area and work in Boston Proper. However, as the region has grown, particularly in suburban areas, demand has increased for travel to and between areas outside of Boston Proper. Three potential circumferential corridors have been defined that connect existing activity centers:

- The Central Area Circumferential Corridor, which connects activity centers within the Central Area.
- The Inner-Suburban Circumferential Corridor, which connects activity centers within and just outside of the Central Area.
- The Outer-Suburban Circumferential Corridor, which connects activity centers outside the Central Area, but generally within Route 128.

The MBTA operates some circumferential bus connections between rapid transit spokes. However, buses must compete with cars on increasingly congested urban streets, reducing the appeal of these services. Also, more frequent, rapid, and through-routed connections would greatly enhance circumferential mobility.

CIRCUMFERENTIAL SERVICE NEEDS TO BE IMPROVED

Problem:

Historically, the primary trip attractions in Boston Proper developed along an axis that included Government Center, the Financial District, and Downtown Crossing. Over time, this axis expanded west toward the Back Bay. The Prudential and Copley Place developments, as well as the relocation of the Orange Line to the Southwest Corridor, firmly defined this still-unfolding “high spine” development pattern for Boston.

At the same time, the educational activity centers to the northwest along the Red Line in Cambridge, as well as the medical and education complexes in the Longwood Medical and Academic Area southwest of the Back Bay continued to develop. West of Boston Proper is the transforming industrial area of Allston Landing. Harvard’s envisioned expansion at Allston Landing will make the institutional presence between Harvard Square and the Longwood area almost continuous, creating a well-defined inner circumferential corridor.

The Urban Ring project has identified the following activity centers within the Central Area that would benefit from improved circumferential transit connections. These are listed in Table G-1.

**TABLE G-1
Urban Ring Activity Centers**

ACTIVITY CENTER	CORRIDOR
Logan Airport, East Boston	Northeast
Bellingham Square, Chelsea	Northeast
Wellington Station, Medford	North
Sullivan Station, Charlestown	North
Lechmere/NorthPoint, Cambridge	Northwest
Kendall Station, Cambridge	Northwest
Harvard Station, Cambridge	Northwest
Allston Landing	West
BU/Kenmore	West
Yawkey Station/Fenwood Center	West
Fenway Station	West
Longwood Medical & Academic Area	West
Ruggles Station	Southwest
Dudley Station	Southwest
Uphams Corner	Southeast
JFK/UMass Station	Southeast

Existing circumferential services that directly connect these activity centers include:

Northeast Corridor: There are no direct transit connections between the two activity centers in the Northeast Corridor: Logan Airport and Bellingham Square.

Northeast and North Corridors: Bus Route 112 connects Bellingham Square in Chelsea via Everett Square, both in the Northeast Corridor, with Wellington Station in the North Corridor.

North Corridor: In the North Corridor, the Orange Line connects Wellington Station with Sullivan Station, both of which are in the North Corridor.

North and Northwest Corridors: Bus Route 86 connects Sullivan Station in the North Corridor with Harvard Square in the Northwest Corridor, and with Allston Landing in the West Corridor. Bus Route CT2 connects Sullivan Station with Kendall Station in the Northwest Corridor.

North, Northwest, and West Corridors: Bus Route 86 connects Sullivan Station in the North

Corridor and Harvard Square in the Northwest Corridor with Allston Landing in the West Corridor.

Northwest Corridor: In the Northwest Corridor, Route 69 connects Lechmere Station and Harvard Square. The Red Line connects Kendall and Harvard Squares.

Northwest and Southwest Corridors: Route 1 provides a connection between Harvard Square in the Northwest Corridor and Dudley Square in the Southwest Corridor.

West Corridor: In the West Corridor, Route 8 connects Kenmore Square with the Longwood Medical and Academic Area (LMA). Route 47 and the CT2 connect BU, Fenway, and the LMA.

West and Southwest Corridors: Routes 8, 19, and CT3 connect Kenmore Square and the LMA in the West Corridor with Ruggles and Dudley Stations in the Southwest Corridor.

West, Southwest, and Southeast Corridors: Route 8 also connects Kenmore Square and the LMA in the West Corridor with Ruggles and Dudley Stations in the Southwest Corridor, and with JFK/UMass Stations in the Southeast Corridor.

Southwest Corridor: In the Southwest Corridor, Routes 8, 15, 19, 23, 28, 44, 45, and 47 connect Ruggles and Dudley Stations.

Southwest and Southeast Corridors: Route 15 connects Ruggles and Dudley Stations in the Southwest Corridor with Uphams Corner in the Southeast Corridor, and Route 41 connects Dudley Square with Uphams Corner and JFK/UMass Stations in the Southeast Corridor.

Southeast Corridors: In the Southeast Corridor, Route 41 connects Uphams Corner with JFK/UMass Station.

Proposed Solutions:

- Implement the Urban Ring project (numerous elements) and additional bus storage and maintenance capacity to accommodate a larger vehicle fleet.
- Implement elements of BRT on Routes 22 and 66.

- Add an intermodal station in Allston/Brighton area.
- Expand capacity at Ruggles and JFK/UMass Stations to accommodate stops by all commuter rail trains.
- Implement the Silver Line Phase III project.

INNER-SUBURBAN CIRCUMFERENTIAL SERVICE NEEDS TO BE IMPROVED

Problem:

Arlington, Belmont, Watertown, and the Boston neighborhoods of Roslindale, Hyde Park, and Mattapan lie just outside the Central Area. These communities have well-developed activity centers and town centers, and most have good radial transit access to the urban core. However, the further out the spokes of the rapid transit and commuter rail systems radiate, the further apart they become, leaving large geographic areas between them. In addition, as the distance from Boston Proper increases, bus routes become feeding services for the radial rail systems, and transit services form less of an interconnected web. These factors combine to make circumferential mobility via transit more challenging between the communities that surround Boston.

Activity centers have been identified in the inner-suburban circumferential corridor, both within and just outside the Central Area. All six radial corridors have a major inner-suburban activity center. (See Table G-2.)

**TABLE G-2
Inner-Suburban Activity Centers**

INNER-SUBURBAN HUB	CORRIDOR
Wonderland Station (Revere)	Northeast
Revere Center	Northeast
Everett Square	North
Wellington	North
Medford Square	North
West Medford	North
Linden Square	North
Malden Center	North
Oak Grove	North
Arlington Center	Northwest
Belmont Center	Northwest
Waverly Square	Northwest
Watertown Square	Northwest
Davis Square	Northwest
Porter Square	Northwest
Harvard Square	Northwest
Arlington Heights	Northwest
Alewife Station	Northwest
Brighton Center	West
Cleveland Circle/Reservoir Station	West
Forest Hills	Southwest
Roslindale Square	Southwest
Hyde Park/Cleary Square	Southwest
Mattapan	Southeast
Ashmont	Southeast

Existing circumferential services that directly connect these activity centers include:

Northeast Corridor: The two hubs in the Northeast Corridor, Revere Center and Wonderland, are connected by MBTA bus Routes 116 and 117 during peak and off-peak periods, and also by Route 110 during off-peak periods.

Northeast and North Corridors: Route 411 connects Wonderland in the Northeast Corridor with Linden Square and Malden Center Station in North Corridor.

North Corridor: West Medford and Medford Square are connected by MBTA bus Routes

94 and 95. Bus Route 101 connects Medford Square with Malden Center. Malden Center and Oak Grove (at the Malden-Melrose line) are connected by bus Routes 132, 136, and 137, which parallel the Orange Line at this point. Malden Center is connected with Linden Square (near the Malden-Revere line) by MBTA bus Route 108, and with Everett Square by Routes 97 and 104.

North and Northwest Corridors: The MBTA does not provide any direct connections between identified hubs in the north and Northwest Corridors.

Northwest Corridor: In the Northwest Corridor, the Red Line connects Harvard Square, Porter Square, Davis Square, and Alewife Station. Arlington Center is connected with Alewife Station by Routes 67, 79, and 350, with Davis Square by Route 87, and with Harvard Square by Route 77. Arlington Heights is connected with Arlington Center by Routes 77 and 79, with Alewife by Routes 62, 76, 79, with Arlmont Village by Route 78 during peak periods, and with Harvard Square by Routes 77 and 78. Belmont Center is connected with Harvard Square by MBTA bus Routes 74 and 75. Waverley Square is connected with Harvard Square by trackless trolley Route 73. Belmont Square and Waverley Square are both connected with Porter Square by the Fitchburg commuter rail line.

Northwest and West Corridors: The MBTA does not provide any direct connections between identified hubs in the Northwest and West Corridors.

West Corridor: In the West Corridor, Route 86 connects Reservoir Station with Brighton Center, the only two hubs identified in the West Corridor.

West and Southwest Corridors: Route 51 connects Reservoir Station in the West Corridor with hubs in the Southwest Corridor, including Roslindale Square and Forest Hills Station.

Southwest Corridor: In the Southwest Corridor, Hyde Park/Cleary Square is connected with Roslindale Square by MBTA bus Route 50, and with Forest Hills by Route 50 and Route 32. MBTA bus Routes 30, 34, 34E, 35, 36, 37, 40, 50, and 51 all connect Roslindale Square with Forest Hills Station via the same alignment, mak-

ing this one of the most frequently served bus corridors in the MBTA system. The Needham commuter rail line also connects these two hubs, but carries few local riders between them.

Southwest and Southeast Corridor: The MBTA does not provide any direct connections between identified hubs in the Southwest and Southeast Corridors.

Southeast Corridor: In the Southeast Corridor, Mattapan Square and Ashmont Station are connected by the Mattapan High Speed Trolley Line and by MBTA bus Route 27.

Proposed Solution:

Implement additional inner-suburban circumferential services to connect all or most of the identified hubs, in conjunction with the creation of comfortable facilities where efficient bus-to-bus transfers can take place and where information can be obtained about the system.

OUTER-SUBURBAN CIRCUMFERENTIAL SERVICE NEEDS TO BE IMPROVED

Problem:

Over the past few decades, suburban communities in the MBTA service area along the Route 128 beltway have grown considerably, both in terms of residential expansion and commercial and office development. Many of these suburban communities not only have well developed town or city centers that serve as significant activity hubs, but also have major shopping centers, office parks, and even high-rise office buildings that now form "linear centers" along Route 128. As a result of this development, substantial intra-suburban travel demands have developed in a nominally circumferential sense. Transit connections between emerging centers in these outer-suburban areas are relatively scarce.

The activity centers in the outer-suburban circumferential corridor have been identified. All six radial corridors have a major outer-suburban activity center. (See Table G-3.)

**TABLE G-3
Outer-Suburban Activity Centers**

OUTER-SUBURBAN HUB	CORRIDOR
Central Square (Lynn)	Northeast
Square One Mall (Saugus)	Northeast
Salem Center	Northeast
North Shore Mall (Peabody)	Northeast
Franklin Square (Melrose)	North
Winchester Center	North
Wakefield Square	North
Woburn Square	North
Burlington Mall	North
Lexington Center	Northwest
Waltham Center	Northwest
Watertown Square	Northwest
Newton Corner	West
Newton Centre	West
Dedham Mall	Southwest
East Milton Square	Southeast
Quincy Center	Southeast
Weymouth Landing	Southeast

Existing circumferential services that directly connect these activity centers include:

Northeast Corridor: The Square One Mall is connected with Central Square by MBTA bus Route 429. Central Square is connected with Salem Center by the Newburyport/Rockport commuter rail line and by MBTA bus Routes 455 and 456. The North Shore Mall is connected with Salem Center by MBTA bus Route 465 and with Central Square, in Lynn, by MBTA bus Routes 435 and 436.

Northeast and North Corridors: The MBTA does not provide any direct connections between identified hubs in the Northeast and North Corridors.

North Corridor: The Burlington Mall and Woburn Square are connected by MBTA bus Route 354; Woburn Square with Winchester Center are connected by Route 134; and Wakefield Square is connected with Franklin Square by MBTA bus Routes 136 and 137.

North and Northwest Corridors: The town of Lexington's Lexpress minibus service, which is partly funded by the MBTA, has one route that connects the Burlington Mall in the North Corridor with Lexington Center in the Northwest Corridor.

Northwest Corridor: Watertown Square and Waltham Center are connected by MBTA bus Routes 70 and 70A.

Northwest and West Corridors: Routes 553 and 554 connect Waltham Center in the Northwest Corridor with Newton Corner in the West Corridor. Route 52 connects Watertown Square in the Northwest Corridor with Newton Corner and Newton Centre in the West Corridor (and ultimately with the Dedham Mall in the Southwest Corridor).

West Corridor: In this corridor, the only two identified activity centers or hubs, Newton Corner and Newton Centre, are connected by MBTA bus Route 52.

West and Southwest Corridors: Route 52, originating at Watertown Square in the Northwest Corridor, connects Newton Corner and Newton Centre in the West Corridor with the Dedham Mall in the Southwest Corridor.

Southwest Corridor: Only one hub, Dedham Mall, has been defined within the Southwest Corridor, so no intra-corridor connections are defined here.

Southwest and Southeast Corridors: The MBTA does not provide any direct connections between identified hubs in the Southwest and Southeast Corridors.

Southeast Corridor: Quincy Center is connected with East Milton Square by Routes 217 and 245, and with Weymouth Landing by Route 225 and the Greenbush commuter rail line.

Proposed Solution:

Implement additional outer suburban circumferential services to connect all or most of the identified hubs, in conjunction with the creation of comfortable facilities where efficient bus-to-bus transfers can take place and where information can be obtained about the system.