

access BOSTON 2000-2010
BOSTON'S CITYWIDE TRANSPORTATION PLAN



Boston Transportation Fact Book and Neighborhood Profiles



City of Boston
Mayor Thomas M. Menino

Boston Transportation Department
Commissioner Andrea d'Amato

Central Transportation Planning Staff
Boston Metropolitan Planning Organization

**May 2002
First Edition**



May 2002

Dear Fellow Bostonians,

I am pleased to present the Boston Transportation Fact Book and Neighborhood Profiles report.

Boston's reputation as the hub of New England has been historically linked to the growth of its transportation connections. Today, as in the past, transportation is more than moving people and goods. It is about Boston's quality of life. The vitality of the city relies upon residents' access to jobs, community facilities and culture in the city, and the ability of commuters and visitors to choose between various modes of travel.

This publication provides an overview of our transportation facilities and how they are used. The first section summarizes the transit and highway infrastructure serving Boston and the region. We are, however, also a city of distinctive neighborhoods, each with its own transportation story. The second section provides details on these residential enclaves. Local landmarks such as schools, libraries, parks and community centers are located in the context of MBTA stations, parking facilities and the network of arterial and residential streets.

The report is one component of Boston's citywide transportation plan, *Access Boston*. Other components address pedestrian safety, on and off-street parking, bicycling, public transportation and regional connections. This fact book was prepared in partnership with the Boston Metropolitan Planning Organization. I thank all those who contributed to the effort.

I hope you will find the information contained here useful and that it will help you in making Boston continue to flourish during the coming years.

Sincerely,

Thomas M. Menino
Mayor of Boston

*We are a city
of distinctive
neighborhoods,
each with its own
transportation story.*

ACCESS BOSTON 2000-2010

The Transportation Fact Book and Neighborhood Profiles is a component of Boston' citywide transportation plan, *Access Boston*. Companion reports are listed below.

Summary Report

Overview of goals and objectives, key findings, recommendations and implementation and funding strategies.

Boston Transportation Fact Book and Neighborhood Profiles

Citywide and neighborhood demographic, economic and transportation facts and trends that affect planning in Boston.

Parking in Boston

Guidelines to manage off-street parking and review transportation impacts of development projects using a district/neighborhood based approach and approaches to improve management of loading zones, metered parking, neighborhood commercial districts, and resident permit parking program.

Pedestrian Safety Guidelines for Residential Streets

Guidelines to implement operational and design strategies in residential neighborhoods that enhance pedestrian safety, calm traffic and improve quality of life.

Boston Bicycle Plan

Policies, education programs and facility improvements to create a better environment for bicycling in Boston.

Boston's Public Transportation and Regional Connections Plan

Initiatives to improve existing public transportation service and create a priority list of future capital investment and projects. Recommendations for freight movement, commuter corridors, transportation for tourism, intermodal centers, and future capital investment in the highway system that serves Boston.

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Boston Transportation Fact Book and Neighborhood Profiles

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INTRODUCTION

Boston is the capital of Massachusetts and the major center of economic and cultural life for all of New England. It is the hub of a metropolitan region which extends into neighboring states, and the center of the regional transportation system, with highway and rail corridors radiating deep into New England.

Boston is also a city of neighborhoods characterized by the intermixing of distinct residential areas with commercial, and recreational activities. Few North American cities have an urban fabric blended such as Boston's, and the travel patterns and transportation systems of Boston reflect this unique urban character. The purpose of this book is to use maps, statistics, and narrative to show how Boston's urban geography, transportation infrastructure, and travel patterns function together as an expression of the city's vitality.

This report gives a detailed overview of the extensive intermodal transportation network in the Boston area. It contains relevant maps and statistics that describe the scale and use of the network from regional, citywide, and neighborhood-by-neighborhood perspectives.

The intent is to provide information that improves our understanding of how Boston, its people, jobs and neighborhoods are connected to each other and to the region. The charts and maps consolidate information for easy reference to inform decisions taken by citizens and planners about the city's future.

Citywide Facts

The report is divided into two sections. The first, **Citywide Facts**, displays information consolidated for Boston as a whole. Each page consists of a map showing the entire City of Boston and its environs, and a column of commentary and related statistics. The pages are grouped in pairs which illustrate complementary information about a particular transportation topic.

Trip Profiles on pages 2 and 3 show the distribution of trips between Boston and the Metropolitan region, and the distribution of all Boston trips, including those that stay within Boston. Trip patterns are summarized by Boston neighborhood, and key mode share summaries are also presented.

The **Transportation Trends** pages examine Boston's growth with respect to population, jobs and auto ownership, and the corresponding increase in trip generation.

The two pages on the **Roadway Network** show the roadway infrastructure and discuss the responsible jurisdictions and the responsibilities of the Boston Transportation Department. Some of the major traffic corridors are also depicted and discussed.

Pages 8 and 9 give an overview of the **Public Transportation Network** and the Massachusetts Bay Transportation Authority (MBTA). Subway, commuter rail, and high density bus lines are shown and both Boston and systemwide ridership are summarized. The most heavily used services are listed, and transit accessibility and some level of service measurements are presented.

Parking, is critical to understanding Boston's transportation patterns. Pages 10 and 11 explore parking issues in terms of availability, various supply restrictions, and the challenges presented by a high level of household auto ownership.

Bicycles in Boston, on page 12, depicts the growing system of off-road bicycle paths in Boston and surrounding communities.

Neighborhood Profiles

Boston is a city of distinctive neighborhoods, each with its own transportation story. The second part of this report features **Neighborhood Transportation Profiles** for each of Boston's neighborhoods. The two pages devoted to every neighborhood have maps and text that describe the unique facilities and mode choices available to residents and visitors in each distinct part of the city. Important area landmarks like schools, libraries and community centers are located on the maps.

Charts, consistent throughout each neighborhood, highlight roadway volumes, transit use, mode share, and parking availability for each district. Trip distribution from each area is also described. Page 13 has a key map and a thorough introduction to this section.

BOSTON TRANSPORTATION FACTS

There are approximately 2,735,000 journeys each day ending in Boston, the majority of which also begin in Boston.

Each day, 927,000 people travel into Boston from the rest of the region. Of these, 70% have destinations outside the Core Neighborhoods.

47% of the 283,000 trips destined for the Core Neighborhoods and beginning outside Boston are by public transportation.

Three out of every ten trips in Boston are pedestrian trips.

57% of Boston's population, and 79% of its jobs lie within an approximately 10 minute walk of a rapid transit or commuter rail station.

68% of all MBTA rapid transit boardings occur in Boston.

The 5 busiest MBTA bus routes carry 17% of all MBTA bus passengers.

Since 1990, Boston's population has grown about 3%. Auto registrations grew 36% over the same period.

In a recent national survey, parking costs in Boston, at up to \$28/day, were second only to New York City.

BTD issued 1,746,744 parking violations in FY2001.

65,830 Resident Parking permits were issued by BTD in the year 2000, a 47% increase from 1990.

There are 38,000 bicycle trips daily in Boston. 20% of these are work trips.

Trips from the Region

Understanding Boston transportation begins with the numbers and locations of trips made to, from, and within Boston. The geographic distribution of daily trips to and from Boston is summarized in the adjoining graphic. The size of each disk represents the number of trips beginning in each metropolitan subarea destined for Boston. Each disk indicates the portion of trips going to one of the “Core” neighborhoods and the portion going to some other part of Boston.

The trips shown here represent trips by all modes, for all purposes, over the entire day. Taken altogether, there are approximately 927,000 of these “daily trips” which enter the City of Boston each day. It is assumed that an equivalent 927,000 daily trips begin in Boston and end in the metropolitan region.

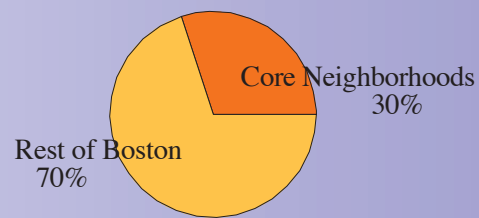
The size of the legend disk below represents these 927,000 daily trips. It is noteworthy that 70% of trips to Boston are destined for one of the neighborhoods outside the Core. This is because trips by Boston residents to locations outside Boston become a trip “to” Boston when the resident returns home. Also, there are a number of major employment centers in the non-Core neighborhoods.

Mode Shares for Trips Between Boston and the Metropolitan Region	Walk or		
	Auto	Transit	Bike
Trips to or from the Core Neighborhoods	52%	47%	1%
Trips to or from the Rest of Boston	87%	12%	1%
All trips between metro region and Boston	77%	22%	1%

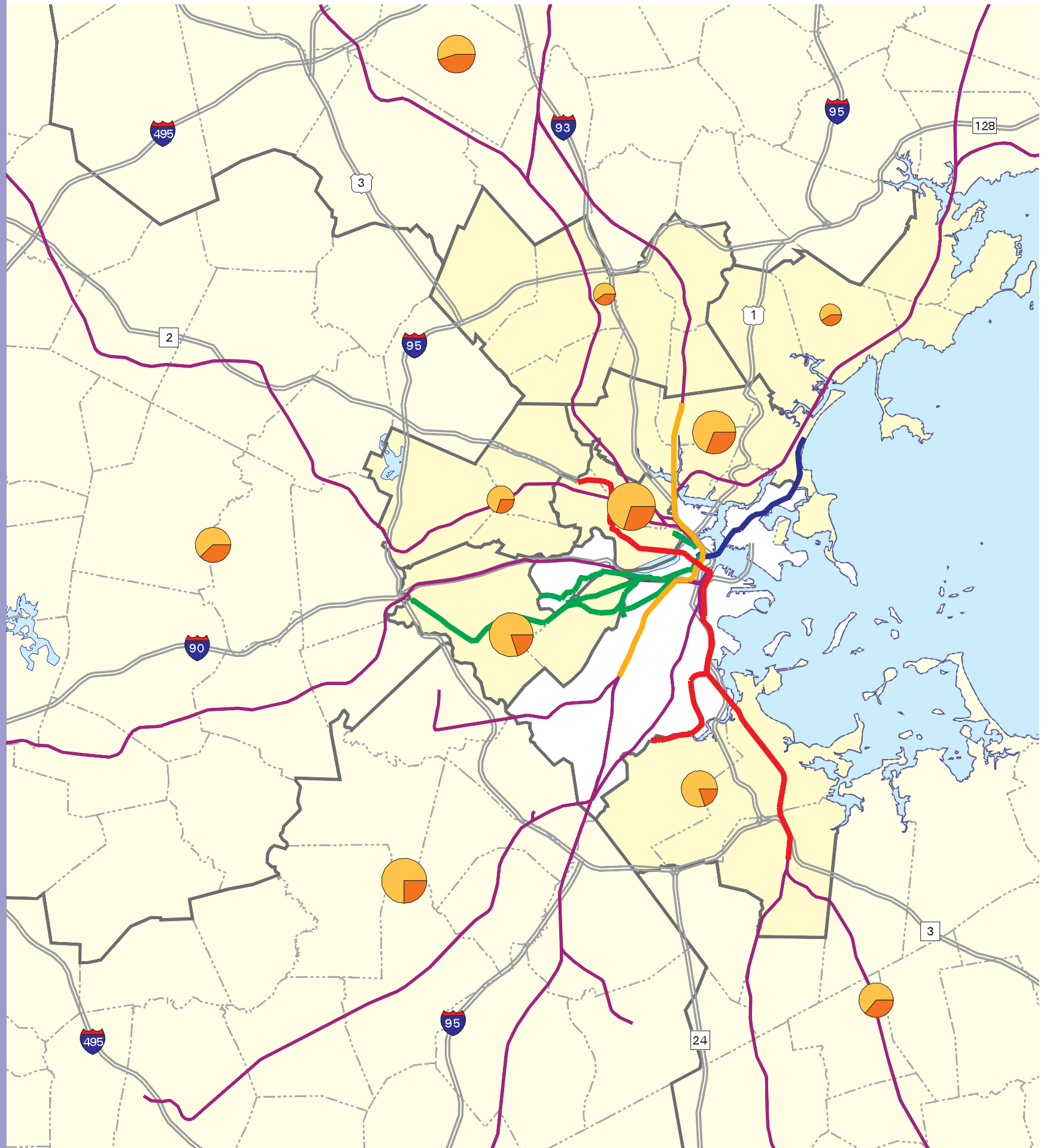
The above table illustrates how the concentration of transit services in Boston’s Core Neighborhoods allows vibrant urban activity with only about half of the trips from the metropolitan region using auto. Few cities in the U.S. are as fortunate as Boston in this regard. For the other Boston neighborhoods, auto use is more important since transit services are less concentrated.

LEGEND

Geographical Distribution of Daily Trips Between Boston and Other Eastern Massachusetts Communities (All Purposes)



Size of disk represents all trips to Boston beginning in another eastern Massachusetts community. (approximately 927,000)



Trips from Boston

2,735,000 trips are estimated to begin in Boston each day. The legend disk represents total daily trips, and their geographical distribution is shown in the accompanying graphic. The largest portion of these trips end within the neighborhood in which they start. The close proximity of residential, business, and cultural resources in Boston's neighborhoods allows the walk mode (includes bicycle) to be used for a large share of trips within neighborhoods and into the Core Neighborhoods. It is not without reason that Boston is called "America's walking city."

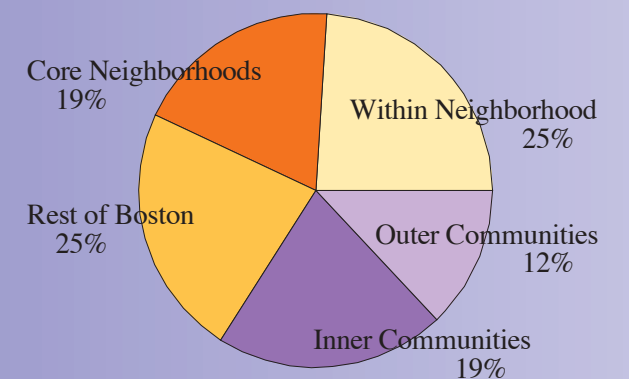
Mode Shares for Boston Trips	<u>Auto</u>	<u>Transit</u>	<u>Walk</u>
Trips entirely within a neighborhood	23%	3%	74%
Trips to or from the Core Neighborhoods	27%	40%	33%
Trips to or from the Rest of Boston	63%	29%	7%
Trips to or from the Inner Communities	72%	26%	2%
Trips to or from the Outer Communities	83%	17%	0%
All trips beginning or ending in Boston	51%	19%	30%

A set of dense "Core" neighborhoods has been defined for this study: Downtown, North End/West End, Chinatown/Theater District, and Back Bay/Beacon Hill. Almost half of the trips starting in the Core Neighborhoods also end within the Core (shown as red "Core" trips.) Trips entering or leaving the Core divide evenly between trips to the Rest of Boston, trips to inner metropolitan communities (the seven close-in disks on the preceding page), and the Outer Communities (the remaining four disks).

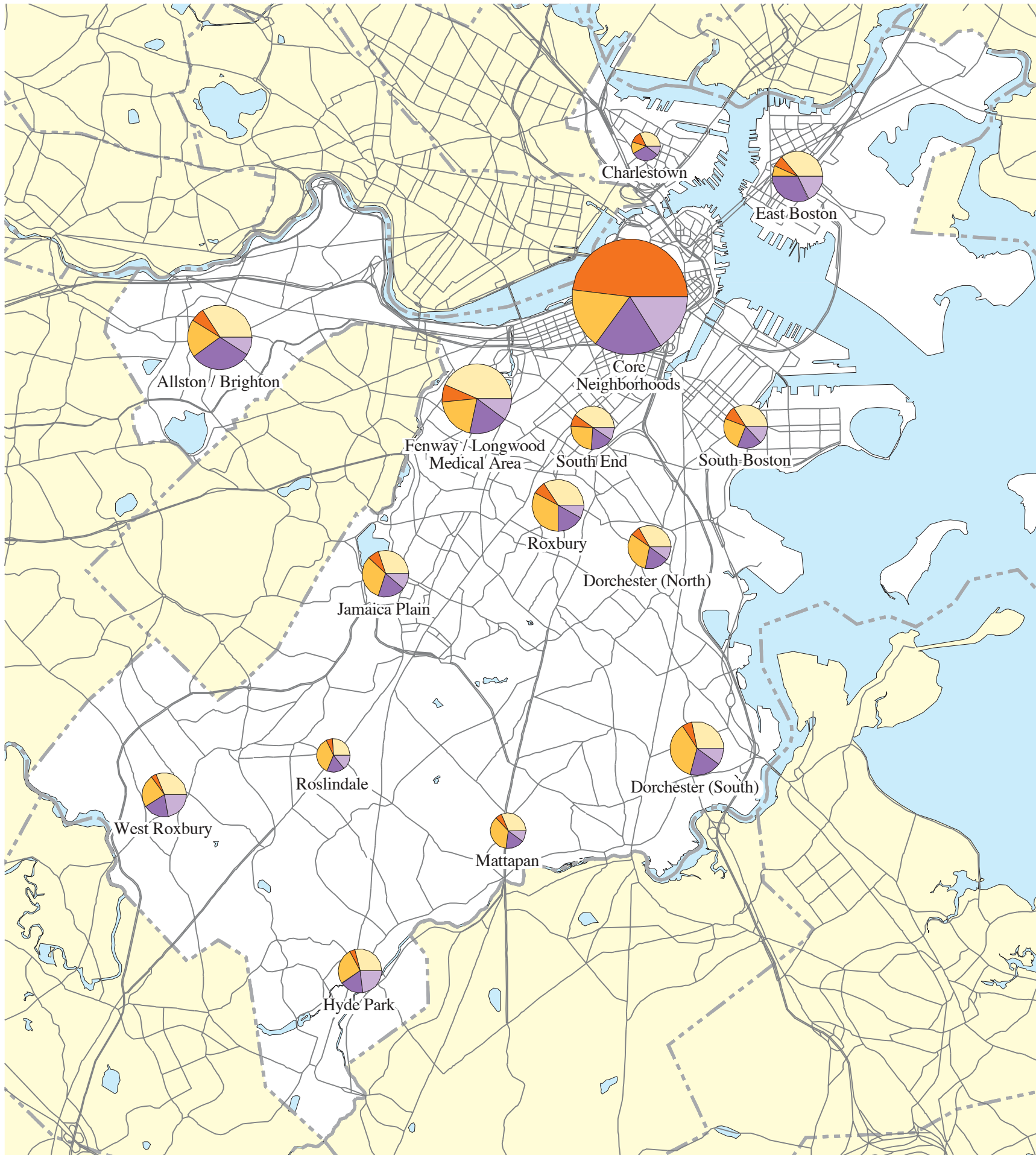
In the non-core neighborhoods, trips to the Core (red slices) are only a small portion of trips. Taken altogether, however, they make up a significant portion of the trips to the Core (the orange slice from Rest-of-Boston). This concentration of trips into the Core from outlying neighborhoods and communities allows Boston's high capacity transit lines to operate efficiently and achieve a high transit mode share. For non-core destinations, auto is a more important mode.

LEGEND

Geographical Distribution of All Daily Boston Trips



Size of disk represents all trips beginning in Boston each day. (approximately 2,735,000)



Trip Generation Trends

After a period of decline in the middle of the 20th century, Boston's population has been growing since 1980. As the city's transformation continues, people are moving back into the city to be nearer to the culture, activities and attractions that Boston has to offer. The number of jobs in Boston continues to increase as well. Boston is one of only three cities (with San Francisco and Washington DC) that actually has more jobs than residents. This pattern is reinforced as traditional Boston employment centers grow and new ones emerge.

The combination of new jobs and new residents will continue to place additional demands on Boston's transportation system. Many of Boston's streets already experience congestion, and even the public transportation system is at or near capacity during peak hours. Managing growth, and accommodating its transportation impacts are amongst the greatest challenges Boston faces today.

The adjacent map shows projected increases in trip density based upon projected employment and population growth in Boston. As shown, certain areas of the city are projected to experience significant growth in the next 25 years. The map reflects growth in the number of trips, by all modes, that will be generated by new development. Much of the increase is within areas that are already dense, though significant growth will likely be experienced in some non-core neighborhoods as well, such as the former Boston State Hospital site in Mattapan.

Population Growth by Neighborhood

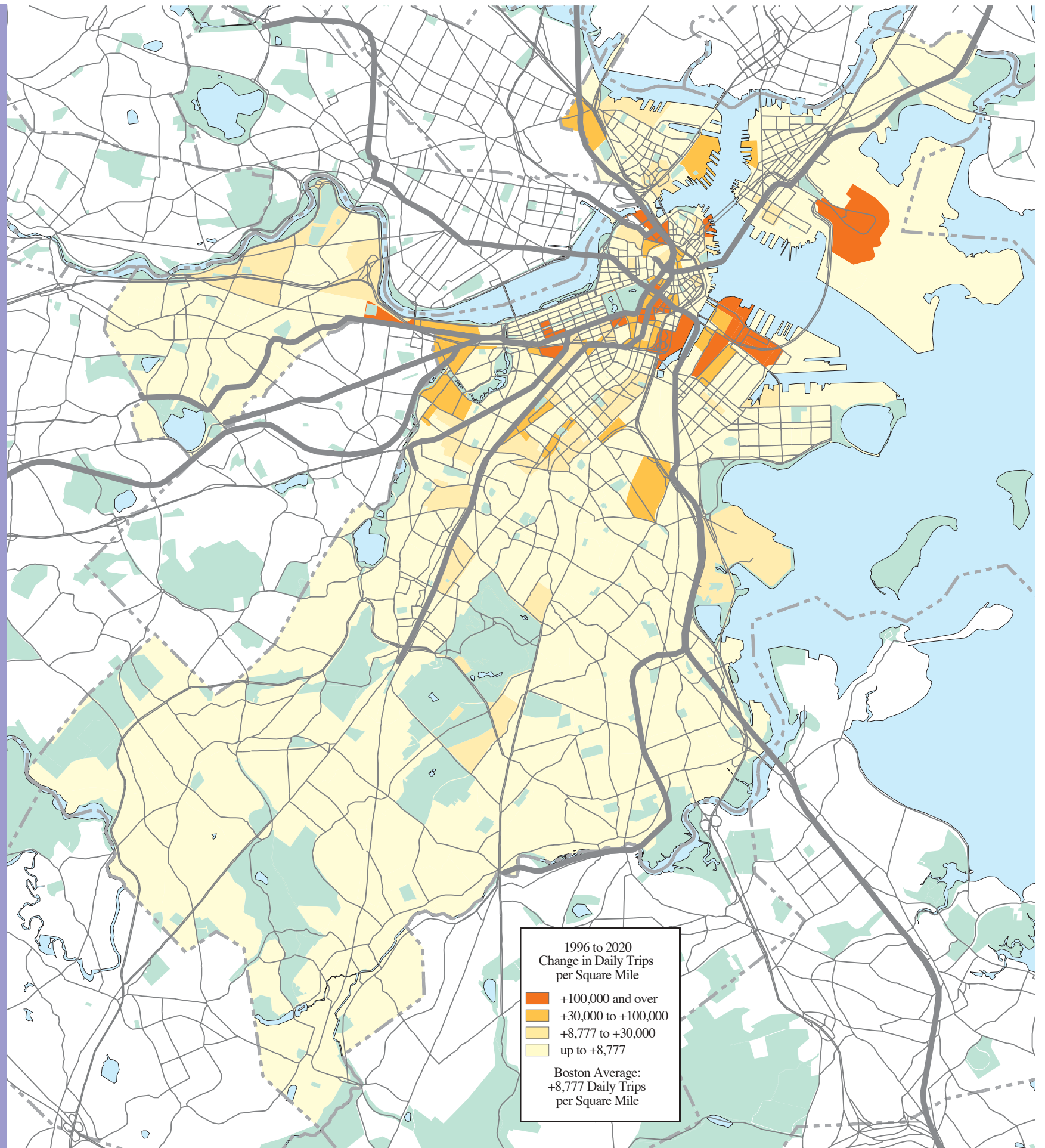
Neighborhood	1980	1990	2000	20 year Change
Allston/Brighton	65,264	70,284	69,648	6.7%
Back Bay/Beacon Hill	27,624	24,882	24,587	(11.0%)
Charlestown	13,364	14,781	15,195	13.7%
Chinatown/Theater District	6,341	6,230	8,554	34.9%
Dorchester (North)	24,523	26,587	29,469	20.2%
Dorchester (South)	58,607	60,277	62,918	7.4%
Downtown	1,531	2,301	2,755	79.9%
East Boston	32,178	32,893	38,357	19.2%
Fenway/LMA	33,131	35,060	35,773	8.0%
Hyde Park	32,526	32,644	34,420	5.8%
Jamaica Plain/Mission Hill	38,780	40,963	39,264	1.2%
Mattapan	32,826	34,680	35,648	8.6%
North End/West End	14,733	13,552	14,257	(3.2%)
Roslindale	24,124	24,627	26,062	8.0%
Roxbury	59,196	58,797	57,658	(2.6%)
South Boston	31,311	27,433	29,938	(4.4%)
South End	29,345	31,024	30,223	3.0%
West Roxbury	37,590	35,389	34,415	(8.4%)
Total	562,994	572,404	589,141	4.6%

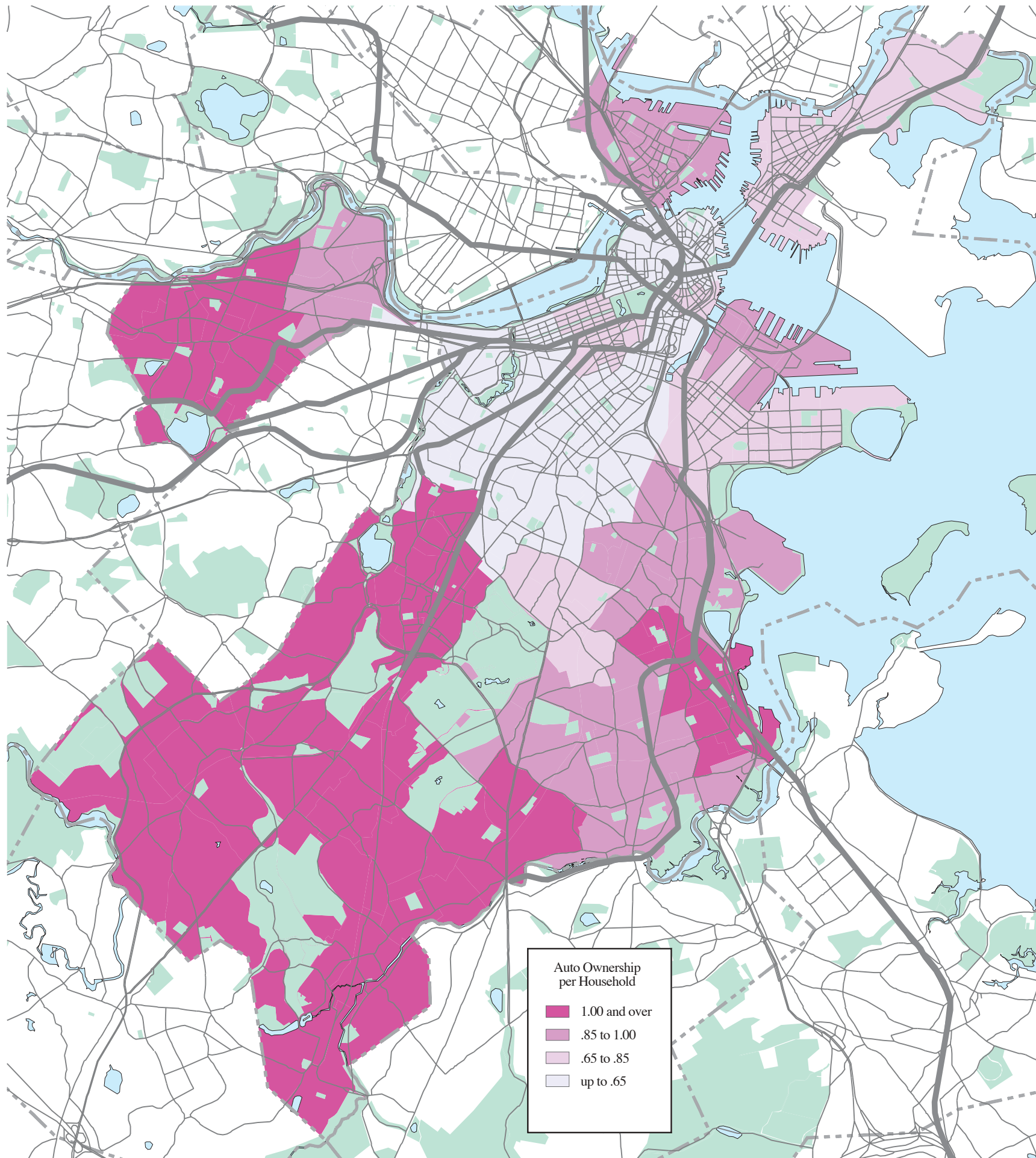
Source: U.S. Census

Top 30 Employment Areas by Sub-neighborhood (* = outside Core)

Financial District	74,600	Boston Medical Center*	9,500
Government Center	27,700	BU/Kenmore Square*	9,400
Longwood Medical Area*	27,200	Leather District	9,100
Downtown Crossing	19,600	Prudential	9,100
Boylston/Newbury	19,400	Lower Market Street*	8,100
Copley Square	18,100	Dorchester Ave./Railyard*	7,300
Theater District	17,900	New Seaport Neighborhood*	7,000
Logan Airport*	16,400	Broadway* [South Boston]	6,600
Mass General Hospital	16,200	Allston Landing*	6,100
Faneuil Hall/Waterfront	13,300	Harbor Point/Savin Hill*	6,050
Statehouse Offices	11,900	North End	5,800
North Station/Bulfinch	11,300	Allston Village*	5,500
East Fenway*	11,100	St. Elizabeth's Area*	5,400
South Station	9,900	South Huntington*	5,200
Fort Point Channel*	9,800	West Fenway*	4,800

Source: 1996 CTPS site-level employment database





Auto Ownership Trends

Boston's renewed popularity as a place to live and work has spurred development, raised income and enhanced the all-around vitality of Boston's core and neighborhoods. This additional activity has brought with it new consequences, whose impacts are being felt throughout the city. Many of those coming back to the city are bringing their cars, and consequently, auto ownership in Boston has grown significantly over the last decade. In fact, the city has seen a staggering increase in auto registrations, as they are up 36% since 1990, with the most significant increases occurring after 1994. Data from city records is shown below:

Year	Boston Auto registrations	index (1990=100)
1990	261,000	100
1991	249,000	95
1992	247,000	95
1993	248,000	95
1994	247,000	95
1995	255,000	98
1996	267,000	102
1997	278,000	107
1998	295,000	113
1999	329,000	126
2000	342,000	131
2001	356,000	136

During this period, Boston has seen a resurgence in residential and commercial development, and a transformation of its housing stock. New residents, many enjoying higher income levels, have been moving into the city. Older residential units, including homes formerly occupied by one family, have been converted to multi-unit condominiums with each adding cars to the neighborhood streets. However, Boston still has many areas with low vehicle ownership per household, especially compared to state and national averages.

Percent of Households with Autos

West Roxbury	96%	East Boston	64%
Roslindale	85%	Roxbury	60%
Hyde Park	80%	South Boston	57%
Mattapan	79%	South End	49%
Dorchester (South)	72%	Back Bay/Beacon Hill	43%
Dorchester (North)	69%	Downtown	43%
Allston/Brighton	68%	North End/West End	42%
Charlestown	68%	Chinatown/Theater District	41%
Jamaica Plain/Mission Hill	67%	Fenway/Longwood Medical	27%
Boston Average	62%	Massachusetts Average	86%
Source: 1990 Census*		National Average	88%

As shown above and in the adjacent map, average auto ownership per household varies widely by neighborhood. Ownership levels are highest in the more suburban, auto-dependent neighborhoods such as West Roxbury and Hyde Park. Meanwhile, other neighborhoods outside the Core have lower auto ownership levels, typically due to comparably lower income levels. In the core areas of Boston, auto ownership tends to be lowest, due to generally good accessibility and the expense of maintaining a car in these areas.

However, as evidenced by the citywide growth in auto registrations, the characteristics of car ownership on Boston are changing rapidly. Since 1990, Boston's population has grown 3%, while auto registrations have grown 36%. Growth in auto ownership is occurring throughout the city, but is most particularly felt in the densest and most rapidly changing areas. Areas with already dense housing have been particularly plagued by this trend, as they often had significant congestion and parking problems before this explosion of auto ownership. The South End, Charlestown and Fenway neighborhoods in particular have been under enormous pressure as demographic changes have brought substantial increase in auto ownership in these areas.

*Comparable 2000 Census data will be available in mid 2002.

Roadway Infrastructure

Boston is one of America's oldest cities. Many streets laid out by the Puritans in the 1630s are still in use today throughout Boston and its historic neighborhoods. Several of the oddly angled streets in the downtown follow old wharves that were filled in as land values rose in the 19th Century. Some straight thoroughfares like Blue Hill Avenue were built by investors as for-profit turnpikes. Together, these traveled ways bear witness to Boston's rich history.

Today, the challenge of moving traffic in Boston is greater than ever. The streets, highways, bridges, tunnels, interstates, parkways and alleys that make up Boston's roadway infrastructure are owned by a number of state, local, and regional entities. In addition to the city of Boston, the Massachusetts Highway Department, Massachusetts Turnpike Authority, Metropolitan District Commission, and Massachusetts Port Authority, all control key portions of Boston's major roads and limited access highways. Furthermore, a large number of streets, alleys and traveled ways are privately owned. The accompanying graphic shows roadways owned by the city of Boston and those owned by the various state and regional agencies.

The Boston Transportation Department (BTD) has primary responsibility for the maintenance of traffic and parking on the city's public roadways. BTD's mission is:

To promote public safety, manage the city's transportation network and enhance the quality of life for residents of our city's neighborhoods. Accomplishment of our mission is ensured through the use of planning, coordinated engineering, enforcement and education. The Boston Transportation Department strives to improve circulation in and around the city, enhance public transportation services, gain efficiencies in the management of parking resources, adjudicate and collect fines, collaborate with relevant agencies and encourage the use of alternate transportation modes.

Boston by the Numbers

In accordance with state laws, BTD sets the use, direction, speed, lane allocation and curbside use of every city-owned street. In order to accomplish this BTD maintains:

- 785 miles of roadway (centerline)
- 3,708 public streets
- 784 signalized intersections
- 300,000 Public safety, informational, and regulatory signs
- 60 School zone flashers

In a typical year BTD installs or applies to the city's roads:

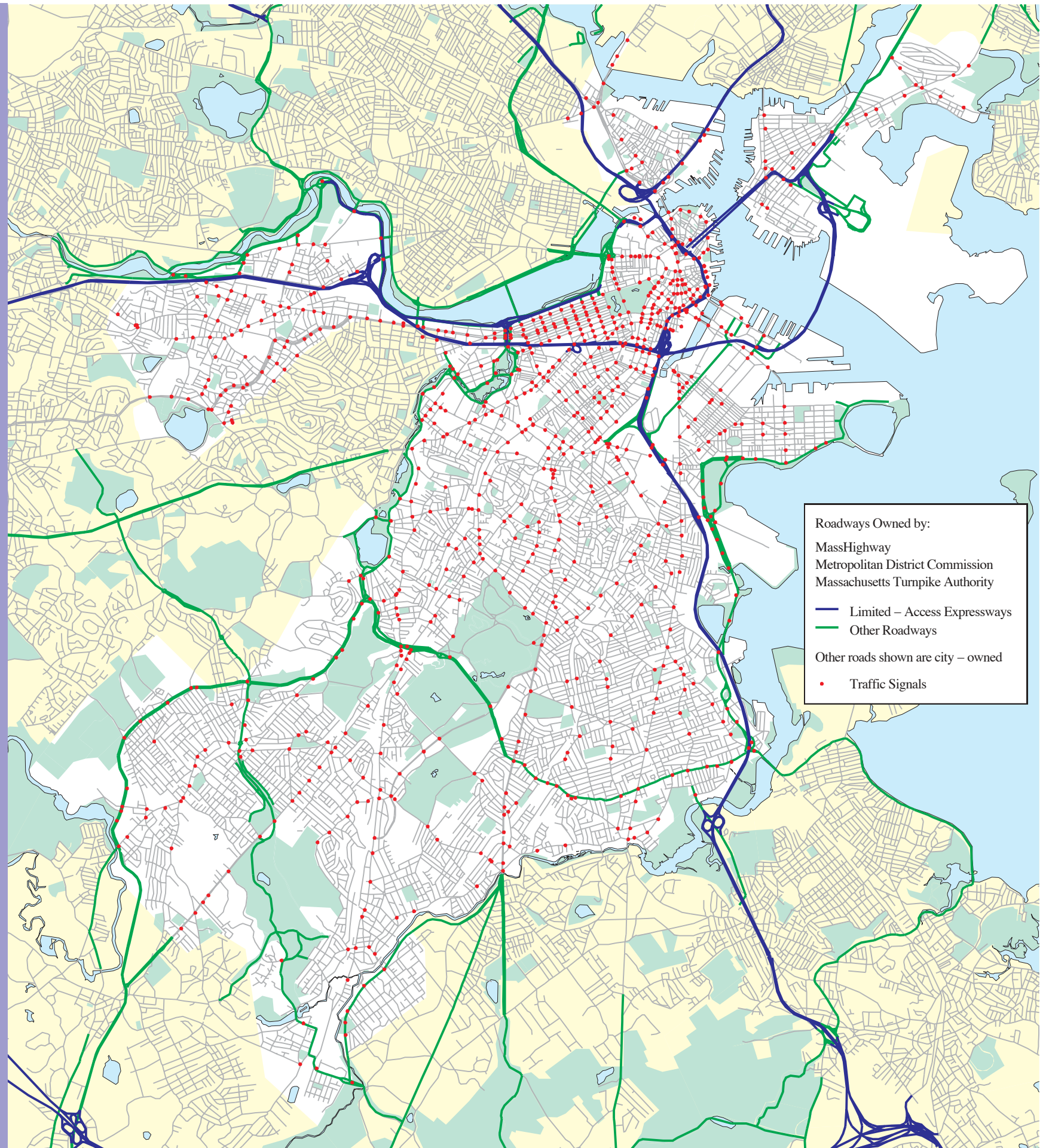
- 3,650 Public safety signs
- 1,250 Street name signs
- 220,000 Linear feet of pavement markings

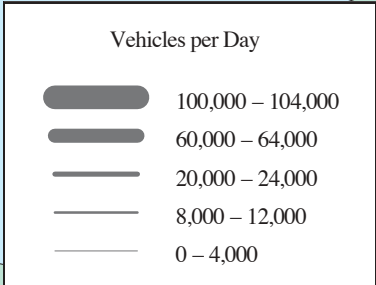
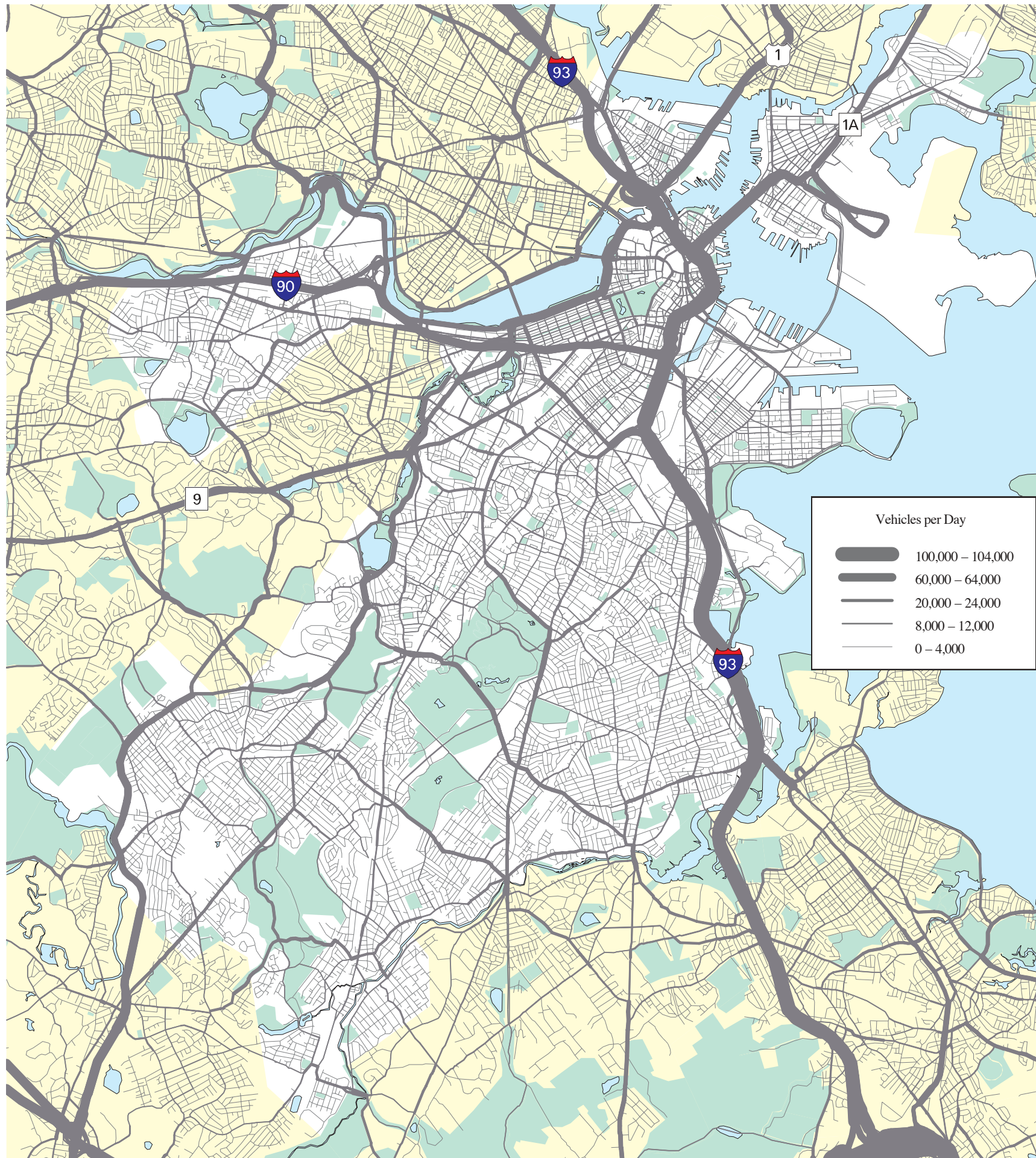
Traffic Control Center

Currently undergoing a \$3.2 million upgrade, Boston's Traffic Control Center is the nerve center from which BTD engineers can monitor and control traffic throughout the Boston. BTD manages most of the city's signal operations through its Traffic Control Center using a combination of sophisticated traffic software, video monitoring, real time information and years of practical experience. Signal timings change based on time of day, weather or in response to traffic or other incidents.

The Traffic Control Center exercises control of the road network using:

- 378 Signals under direct control
- 683 System loop detectors
- 29 Video monitoring cameras





Roadway Volumes

Six of Boston's historic neighborhoods had been separate cities before annexation between 1867 and 1912. The roads that connected the historic town centers to Boston and to each other are still major thoroughfares. Newer roads and highways were built on extensive landfill in the 19th and 20th Centuries. These newer roads and a regional parkway system now carry the bulk of the traffic into and within Boston.

The accompanying graphic shows average weekday traffic volumes (AWDT) on roadways in and near Boston. The interstates and limited access highways carry the bulk of traffic into and through the city. However, there are also major flows of traffic on surface roadways between and through Boston's neighborhoods. Major radial corridors include VFW Parkway to Jamaicaaway to Huntington Avenue, and Blue Hill Avenue to Seaver Street to Columbus Avenue. Major crosstown routes include Massachusetts Avenue, Morton Street, and Cummins Highway. AWDT for these and other major Boston roadways is summarized below. Volumes are for both directions combined at a representative point in the neighborhood.

AWDT	Roadway	Neighborhood
61,000	Rutherford Avenue	Charlestown
43,000	VFW Parkway	West Roxbury
42,000	Gilmore Bridge	Charlestown
42,000	Boylston Street	Fenway/Longwood Medical Area
41,000	Jamaicaway	Jamaica Plain/Mission Hill
39,000	Columbus Avenue	Roxbury
39,000	Morrissey Boulevard	Dorchester (North)
35,000	Cambridge Street	Allston/Brighton
34,000	Morton Street	Mattapan
34,000	Dorchester Avenue	South Boston
33,000	Tremont Street	Roxbury
32,000	Melnea Cass Boulevard	Roxbury
32,000	Massachusetts Avenue	South End
30,000	Seaver Street	Roxbury
29,000	Massachusetts Avenue	Back Bay/Beacon Hill
28,000	Congress Street	Downtown
27,000	Old Colony Avenue	South Boston
27,000	Cummins Highway	Mattapan
26,000	North Beacon Street	Allston/Brighton
26,000	Morrissey Boulevard	Dorchester (South)
25,000	Washington Street	West Roxbury
25,000	Cummins Highway	Hyde Park
24,000	Huntington Avenue	Jamaica Plain/Mission Hill
24,000	Blue Hill Avenue	Mattapan
23,000	Gallivan Boulevard	Dorchester (South)
23,000	Brookline Avenue	Fenway/Longwood Medical Area
23,000	Commonwealth Avenue	Allston/Brighton
23,000	North Washington Street	North End/West End
23,000	Surface Artery	Chinatown/Theater District
21,000	Brighton Avenue	Allston/Brighton
20,000	Kneeland Street	Chinatown/Theater District
20,000	Dorchester Avenue	Dorchester (North)
18,000	Cummins Highway	Roslindale
18,000	Chelsea Street Bridge	East Boston

Regional population, employment, auto ownership, and average trip length have grown in recent decades, impacting expressway volumes.

	1977	1987	1992	1999
Southeast Expressway	152,000	189,000	196,000	208,000
Central Artery	155,000	184,000	181,000	197,000
I-93 North	91,000	121,000	115,000	130,000
Tobin Bridge	66,000	93,000	71,000	77,000
Sumner/Callahan Tunnels	75,000	97,000	100,000	82,000
Ted Williams Tunnel	n/a	n/a	n/a	32,000
Massachusetts Turnpike	76,000	109,000	115,000	121,000
Storrow Drive	91,000	103,000	106,000	106,000

Source: CTPS and MassHighway

Transit Infrastructure

Boston has the nation's oldest subway system, and the Massachusetts Bay Transportation Authority (MBTA) has the 4th highest ridership in the nation. The MBTA system includes four rapid transit lines, three streetcar lines, 13 commuter rail lines, 167 bus and trackless trolley routes, and ferry and paratransit services. Centered on Boston, MBTA service extends into Rhode Island, and reaches to New Hampshire and the cities of Worcester and Fitchburg in central Massachusetts. The 175 cities and towns in the MBTA District have a combined population of 2,608,638. The statistics on this and the next page are from CTPS and the MBTA.

Rapid Transit

With frequent, high capacity service during all periods of operation, the rapid transit lines are the backbone of the transit system. There are a total of 124 stops including streetcar stops, 77 of which are in Boston.

Line	Boardings at Rapid Transit stations		percent Boston
	all stations	Boston stations	
Red Line	233,000	109,000	47%
Green Line	208,000	158,000	76%
Orange Line	166,000	139,000	84%
Blue Line	62,000	47,000	77%
Total	669,000	453,000	68%

The mostly heavily used stations are in the central core. These stations are either served by more than one rapid transit line or serve as transfer points with the commuter rail system and high-speed Acela service.

Outside entries daily

Station	Transit lines	Connecting with
25,500 Downtown Crossing	Red/Orange	
20,800 South Station	Red	Commuter rail, Acela
17,400 Back Bay	Orange	Commuter rail, Acela
17,000 State	Blue/Orange	
17,000 Park Street	Red/Green	
16,100 Government Center	Blue/Green	
13,200 North Station	Orange/Green	Commuter rail

The most heavily used rapid transit stations in the non-core neighborhoods are often those served by a complex of local bus lines. Many of these neighborhood intermodal centers are also located within neighborhood business districts.

Station (line)	Outside entries	Station (line)	Outside entries
Forest Hills (Orange)	13,400	Ashmont (Red)	7,200
Maverick (Blue)	8,800	JFK/UMass (Red)	6,300
Sullivan Square (Orange)	8,650	Massachusetts Ave. (Orange)	5,300
Ruggles (Orange)	8,500	Jackson Square (Orange)	4,800
Kenmore (Green)	7,600	Fields Corner (Red)	4,700

Commuter Rail

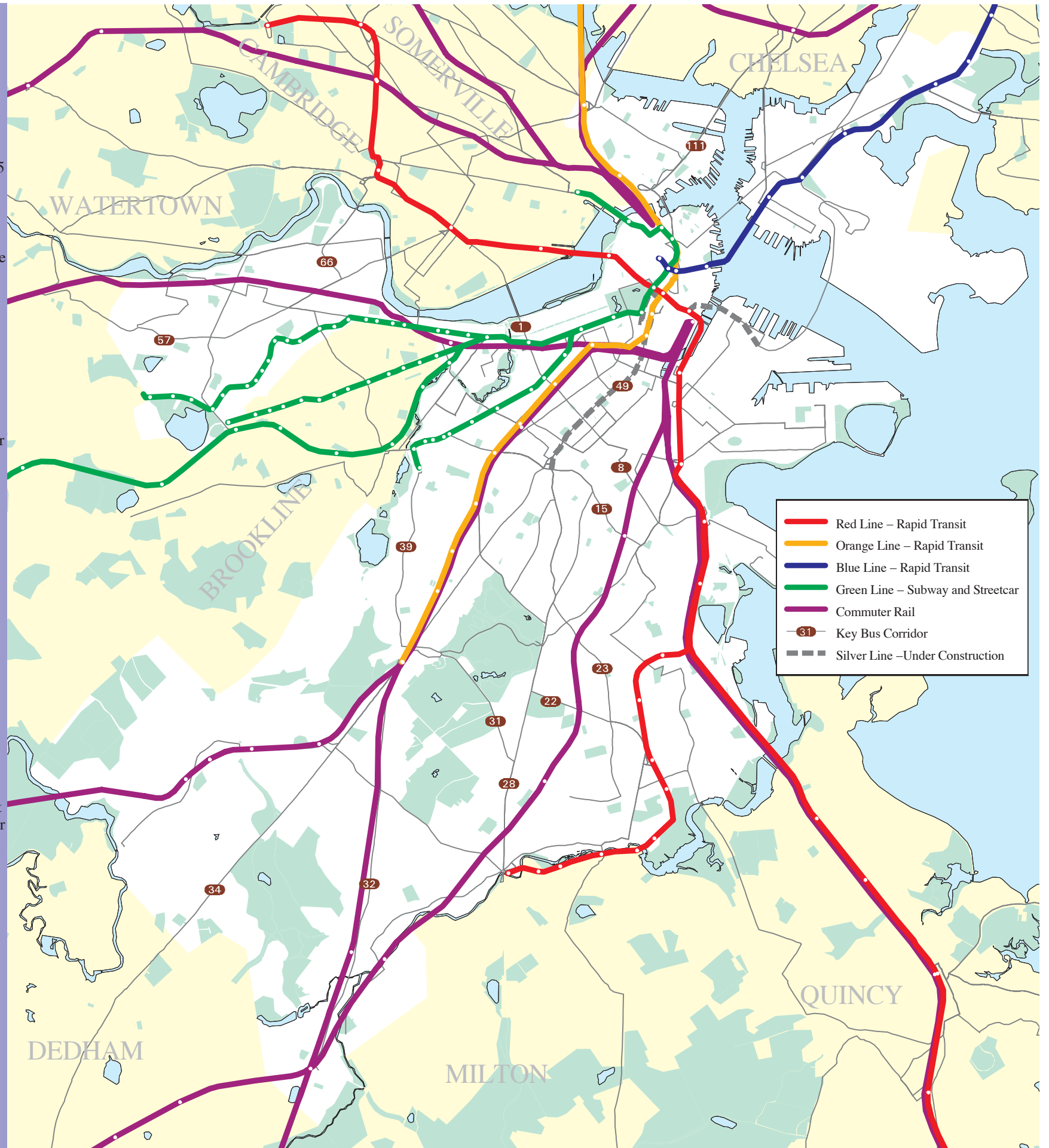
Commuter Rail is an important mode of access to Boston's core from the Metropolitan region. Service and ridership have increased in recent decades as the region's population has grown and dispersed. Commuter rail also serves Boston's neighborhoods, with over 6,000 boardings a day at 13 stations located outside the Core. Most of these trips are to the Core, but some are "reverse commutes" to suburban destinations.

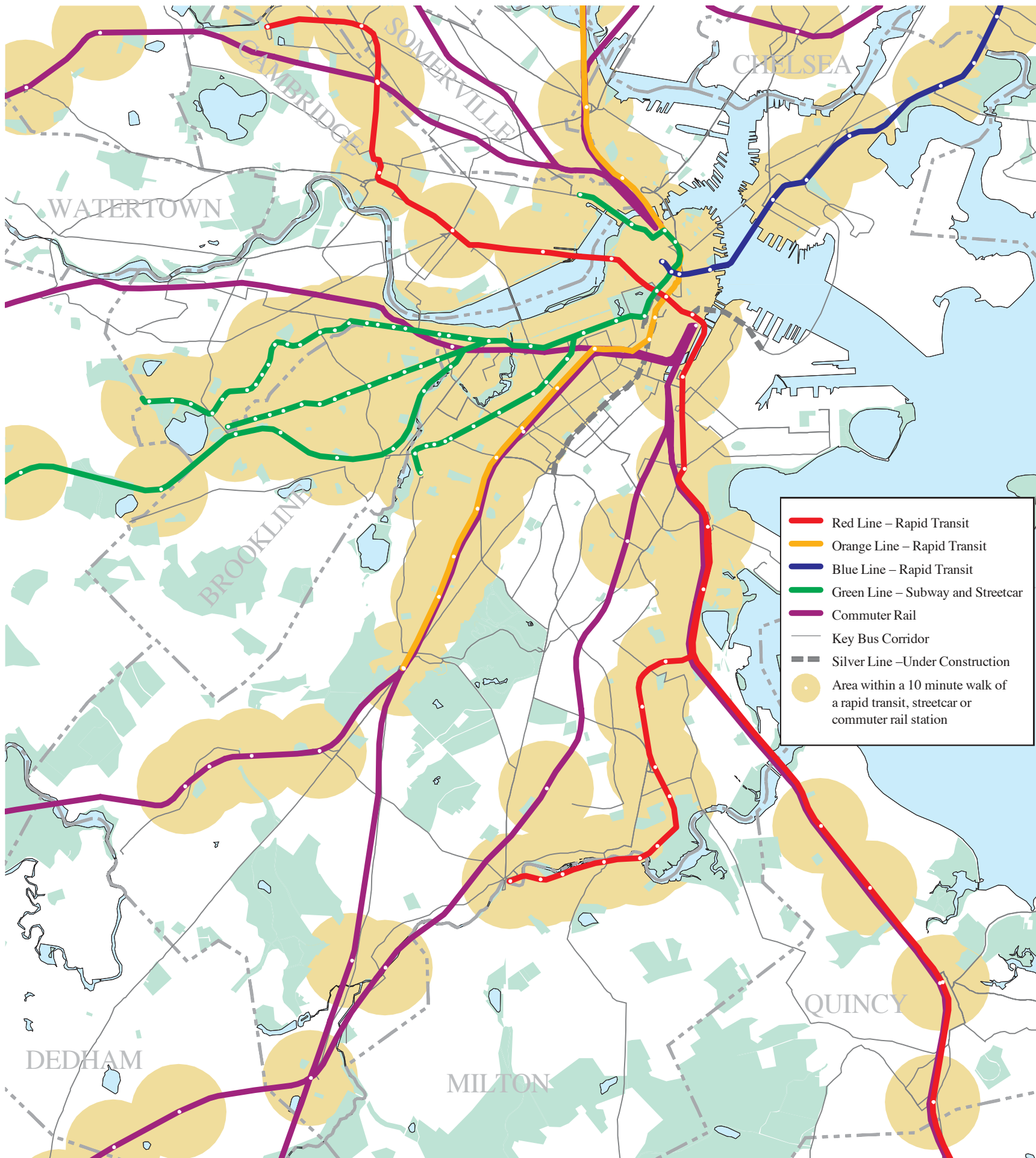
Boardings Trip origins

25,500	Northside commuter lines
38,000	Southside commuter lines (non-Boston stations)
6,000	Boston non-core stations
69,500	North, South, and Back Bay Stations
139,000	Total boardings to or from Boston

Bus Service

The third major component of the transit system is bus service. The MBTA operates 167 bus routes serving 377,000 riders a day, with service offerings most extensive during weekday peak periods. The accompanying graphic, however, shows only bus routes with service throughout the day, into the evening, and all weekend. Route numbers of the most heavily used lines are also shown. The hours of transit service are a critical factor for people who are transit dependent either by choice or by necessity.





Transit Accessibility

Boston is well served by public transit, and the Downtown is the hub of the regional transportation system. Expansion of Boston's transit infrastructure has both provided for and spurred the growth, development and density that make Boston's environment unique.

Access to and use of the transit system varies by neighborhood. The circled areas on the adjacent map represent parts of Boston about a **10 minute** walk from a transit station. Approximately 57% of Boston's population and 79% of its employment lie within these areas. The table below shows transit mode shares by neighborhood, ranked by transit use to the Core.

Transit Mode Share by Neighborhood

Trips to the Core	Other Trips	All Trips	Neighborhood
71%	9%	13%	East Boston
68%	10%	13%	Roslindale
63%	15%	19%	Jamaica Plain / Mission Hill
62%	10%	13%	Allston / Brighton
62%	6%	7%	West Roxbury
61%	5%	7%	Hyde Park
59%	10%	13%	Mattapan
58%	8%	11%	Dorchester (South)
57%	14%	17%	Roxbury
54%	12%	15%	Dorchester (North)
51%	14%	19%	Charlestown
49%	19%	21%	Fenway / Longwood Medical Area
44%	17%	19%	South End
42%	12%	15%	South Boston
8%	39%	23%	Back Bay / Beacon Hill
7%	50%	32%	Chinatown / Theater District
5%	58%	35%	Downtown
5%	38%	20%	North End / West End
		19%	Citywide Average

- Red Line – Rapid Transit
- Orange Line – Rapid Transit
- Blue Line – Rapid Transit
- Green Line – Subway and Streetcar
- Commuter Rail
- Key Bus Corridor
- Silver Line – Under Construction
- Area within a 10 minute walk of a rapid transit, streetcar or commuter rail station

MBTA service is very competitive for trips between core and non-core neighborhoods. Interestingly, for trips starting in a Core neighborhood and ending in the Core, transit has a low share since walk is the dominant mode of travel for these trips. In contrast, for trips starting in a non-core neighborhood destined anywhere but the Core, transit share is relatively low since the auto is often more practical.

The Rapid Transit system is augmented by a growing network of bus routes that provide more extensive service into the neighborhoods. Areas outside the circles on the accompanying map are primarily served by buses. Bus routes serving these areas typically have the highest ridership and the most frequent service in the MBTA system.

For transit-dependent residents, the lack of good transit service to non-core destinations can create serious mobility problems. Also, many transit-dependent users live or work outside the disks, and quality of service is often seen as a major problem.

	Number of routes	Daily boardings	percent
Bus routes entirely within Boston	49	166,000	44%
Routes crossing Boston city limits	57	125,000	33%
Routes entirely outside Boston	61	86,000	23%
Total	167	377,000	100%

Highest Ridership MBTA Bus Routes (via)		Daily boardings
39	Forest Hills-Copley Square (Centre St./South St.)	17,400
1	Dudley-Harvard Square (Massachusetts Ave.)	12,600
23	Ashmont-Ruggles (Washington St./Blue Hill Ave.)	11,700
28	Mattapan-Ruggles (Blue Hill Ave.)	11,700
66	Dudley-Harvard (Brookline/Allston)	10,700
57	Watertown-Kenmore Square (Brighton Ave.)	8,900
22	Ashmont-Ruggles (Talbot Ave./Blue Hill Ave.)	8,300
111	Chelsea-Haymarket (Tobin Bridge)	8,100
32	Wolcott-Forest Hills (Hyde Park Ave.)	7,700
49	Dudley-Downtown (Washington St.)	7,600
15	Kane Square-Ruggles (Dudley St.)	7,000
34	Dedham-Forest Hills (Washington St.)	6,300
8	UMass-Kenmore Square (Massachusetts Ave.)	5,300
31	Mattapan-Forest Hills (Morton St.)	5,200

Parking Availability

Boston is legendary for its parking scarcity, especially in the downtown core. Boston's central business district is dense, crowded, and has some of the most expensive parking in the country. For example, in a recent nationwide survey, Boston was second only to New York in average parking cost, with rates increasing as fast as most other cities in the nation.

Average Parking Cost

City	Daily	Monthly	5 year Increase
New York(midtown)	\$40	\$520	30%
New York(downtown)	\$29	\$400	29%
Boston	\$28	\$375	34%
San Francisco	\$25	\$325	30%
Chicago	\$20	\$300	25%
Seattle	\$20	\$248	60%
Philadelphia	\$14	\$168	14%
Washington D.C.	\$13	\$205	51%
Atlanta	\$13	\$100	n/a
Baltimore	\$11	\$138	41%
Denver	\$10	\$138	n/a
Portland	\$ 9	\$150	n/a
National Average	\$13	\$157	n/a

Source: Collier's Nationwide

Boston's parking supply is constrained by statute, geography, and urban fabric, and has grown much more slowly than parking demand. Consequently, the cost of parking continues to rise, especially in the areas of densest employment and highest visitor interest. The shaded areas of the adjacent map show the average 1999 cost of offstreet parking in Boston's core and adjoining areas. The highest parking rates are in and near the financial district, which has the greatest employment density and numerous visitor attractions. Areas around Boston's premier hospitals also have some of the most expensive parking in Boston.

Parking in Boston's neighborhoods is also limited, though it is considerably less expensive relative to the downtown core. The BTD and the MBTA each own and operate parking facilities in Boston's neighborhoods. BTD facilities are near neighborhood business districts and are free of charge. The MBTA lots are near transit stations, and charge minimal daily fees. The accompanying graphic shows the location of these facilities, as well as the MBTA lots outside of Boston. Note that some MBTA stations have more than one lot.

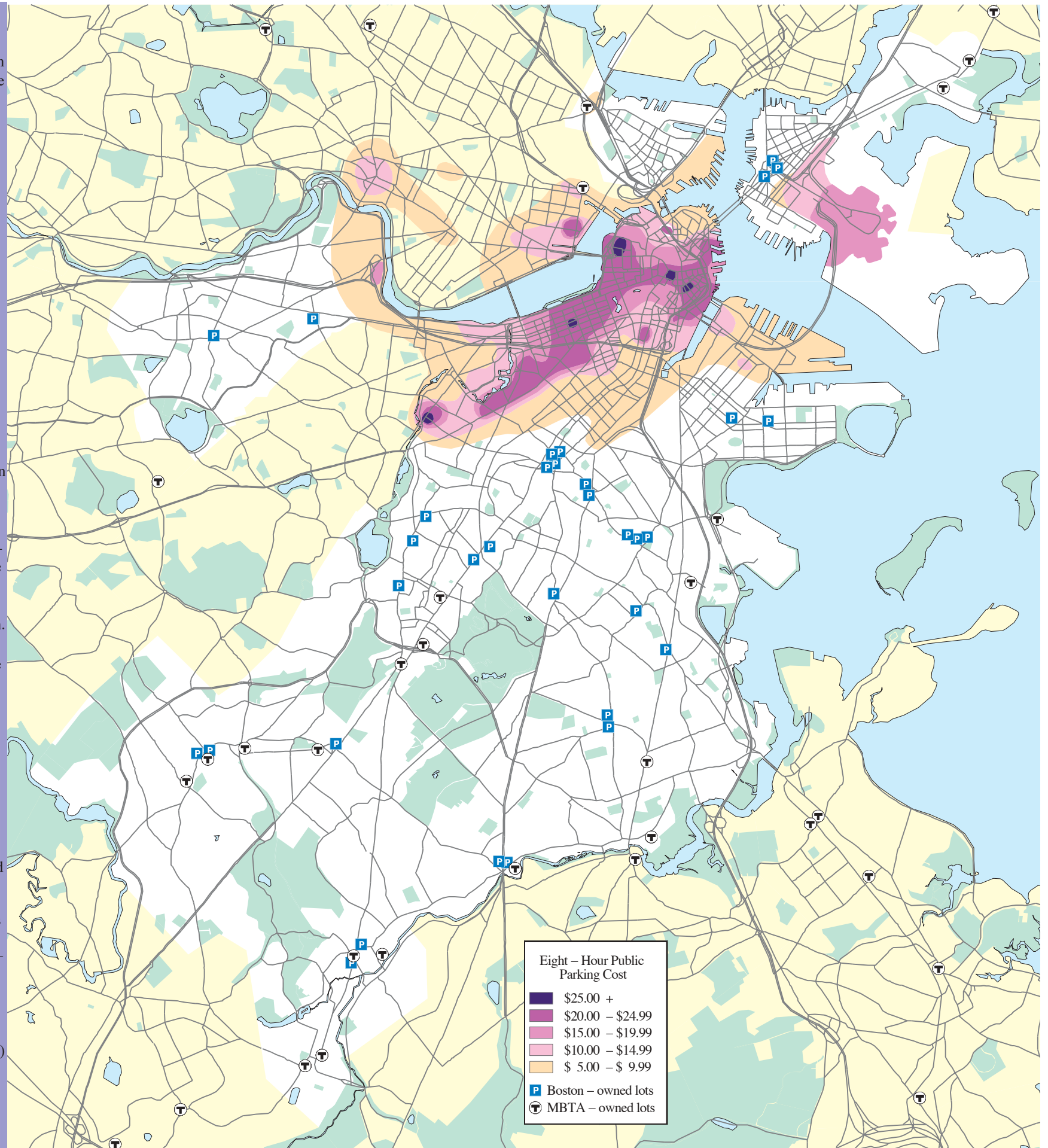
Publicly Owned Parking in Boston Neighborhoods

BTD	34 Lots	1,547 Spaces
MBTA	15 Lots	2,647 Spaces

Parking is also allowed onstreet in most areas, including much of the Core neighborhoods. The Boston Transportation Department is charged with regulating and enforcing curbside use on all City streets. The curbside is valuable, and competition for its use is fierce. Curbside space must accommodate loading, service, bus stops and cab stands, as well as the varying parking needs of residents and visitors. In the busiest districts, parking meters are an important rationing and enforcement tool, allowing maximum curbside use. The Boston Transportation Department uses over 42 different parking regulations to address the differing curbside needs throughout the city.

Parking Regulation by the Numbers

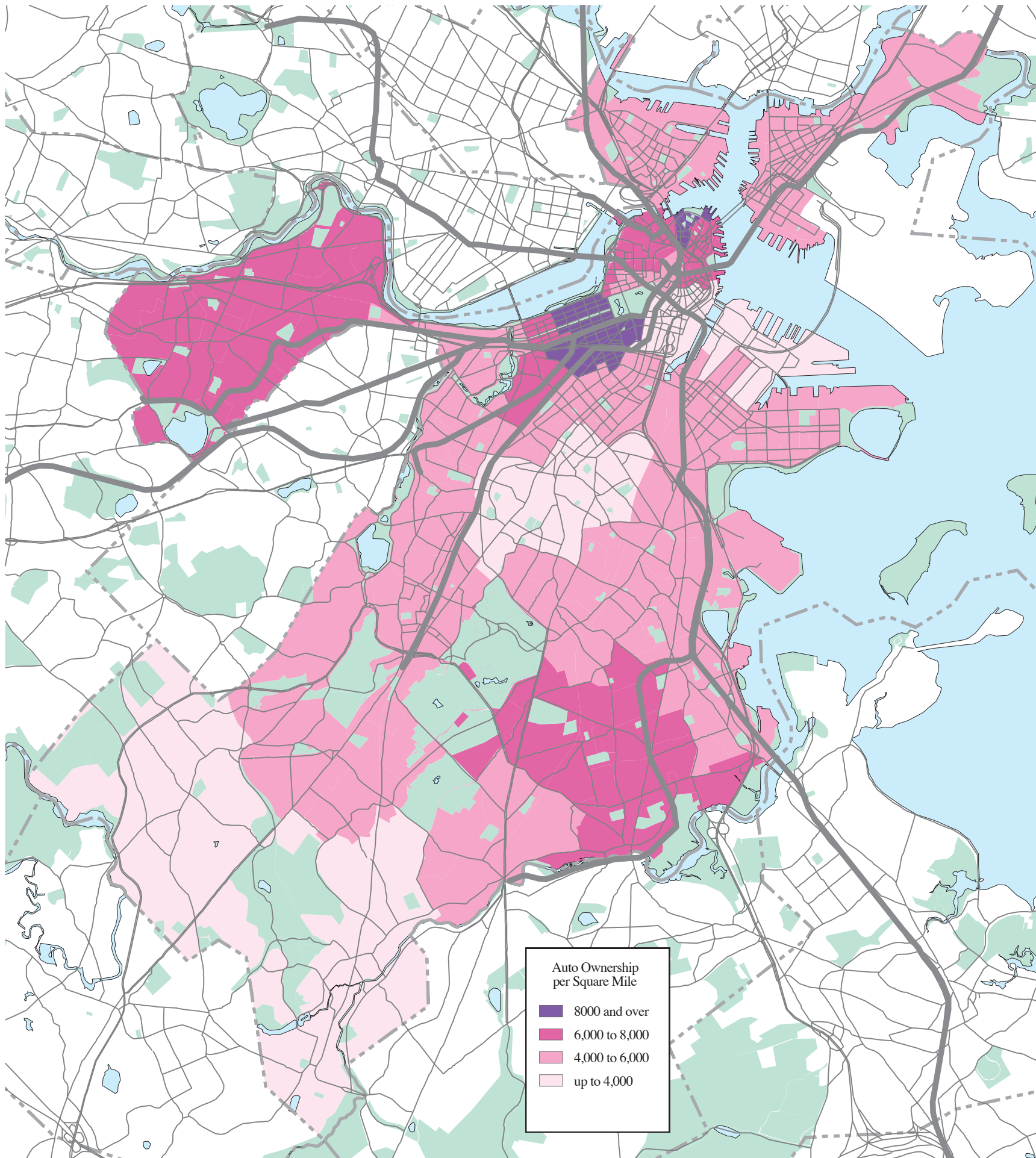
- 5,496 regulation signs installed in FY 2001(replacement and new)
- 6,800 parking meters operated and maintained - av. cost \$1/hour
- \$8,627,984 FY 2001 parking meter revenue
- 111 valet zones
- 18,784 special event/construction permits issued in FY 2001



Eight – Hour Public Parking Cost

- \$25.00 +
- \$20.00 – \$24.99
- \$15.00 – \$19.99
- \$10.00 – \$14.99
- \$ 5.00 – \$ 9.99
- P Boston – owned lots
- T MBTA – owned lots

Parking Demand



Contributing to Boston's livability is the proximity of its residents, business districts and institutions. Given the city's limited geography and roadway accessibility, accommodating parking becomes especially difficult. Boston's growth in residents, employment and visitors has contributed significantly to its parking crunch. Over the last few decades, many steps have been taken by the city to both curb the growth in parking and heavily regulate its use.

Scarce onstreet parking has long been a condition associated with many areas of Boston. The adjacent map combines auto ownership per household with population density to show the density of autos per square mile. When density of autos is shown, certain core areas and other dense residential areas like Allston/Brighton clearly have more cars per square mile than the rest of Boston. Population density here offsets what are typically lower auto ownership rates in these areas, and the overall number of cars in the neighborhood is often more than be accommodated onstreet. As the city has grown, more areas have been experiencing this onstreet parking crunch. With auto registrations in Boston up 36% since 1990, this parking scarcity will undoubtedly continue.

Boston's Resident Permit Parking program developed in reaction to this trend and helps to protect residential areas from parking intrusion by commuters and other non-residents. The program was first instituted by the City in 1978, and grows every year in both resident permit requests and curbside allocation of spaces. The chart below shows the growth and scope of Boston's Resident Permit Parking program.

Resident Permit Parking district	Permits Issued		Percent Change
	1990	2000	
North End	3,387	4,163	23%
Chinatown	601	750	25%
Leather District	67	169	153%
Bay Village	440	537	22%
Back Bay	5,572	7,086	27%
Beacon Hill	3,602	3,933	9%
Charlestown	745	4,235	468%
East Boston	5,342	7,216	35%
Allston/Brighton	8,329	15,631	88%
Fenway/Kenmore	3,869	4,678	21%
South End	7,101	9,678	36%
South Boston	901	1,226	36%
Jamaica Plain	1,765	2,606	48%
Mission Hill	1,588	2,002	26%
Roxbury	n/a	258	n/a
Dorchester	1,546	1,037	-33%
West Roxbury	n/a	397	n/a
Roslindale	n/a	214	n/a
Hyde Park	n/a	14	n/a
TOTAL	44,855	65,830	47%

BTD is responsible for both the regulation and, with the Boston Police Department, enforcement of curbside regulations on all City streets. Enforcement of parking violations is done through ticketing, towing and booting. BTD collects and adjudicates fines for all violations, as well as holds all vehicles towed for violations.

Enforcement by the numbers (enforcement actions for FY2001)

191	Parking Enforcement Officers
53	Tow Truck Drivers and Supervisors
1,746,744	Violations Issued
6,166	Booted vehicles
16,482	Violation Tows
1,905	Abandoned vehicle tows

In the 1970s Boston agreed to freeze general public parking as part of the State Implementation Plan (SIP) to comply with the Federal Clean Air Act. Since then the freeze regulations have been expanded, and are administered by the Boston Air Pollution Control Commission.

Freeze Area Key aspects of current regulations

Boston Proper	Caps general public parking at 35,500 spaces.
East Boston	Caps rental car spaces at 4,012 and Park & Fly at 1,098
South Boston	Caps parking at 1994 levels in three parking districts
Logan Airport	Caps parking at 19,315 spaces (mostly for passengers)

Bicycles in Boston

There are about 38,000 daily trips by bicycle in Boston, 20% of which are work trips (CTPS). This figure does not include recreational trips starting and ending in the same place nor does it include bicycle messenger trips.

The basic bicycle network is the local street system. Under state and city law, bicyclists may use all streets and parkways except divided express highways with on and off ramps. The roads in the City of Boston prohibited to cyclists are I-93, I-90, Storrow Drive, portions of Route 1A, the harbor tunnels, and the Tobin Bridge.

Boston has several bicycle paths prohibited to motor vehicles. The most popular is the Dr. Paul Dudley White Bicycle Path [number 1 on accompanying map] along the Charles River from the Museum of Science to Allston-Brighton and beyond. The path, owned and managed by the Metropolitan District Commission (MDC), makes a 17-mile loop on both sides of the river. On warm weekends the path is crowded with joggers, roller skaters, strollers, dog walkers, besides bicyclists. The Charles River Basin Master Plan calls for improving the path system by providing separate hard paths (for wheeled users) and soft paths (for pedestrians). North Point and Nashua Street Parks [14] will extend the paths towards the harbor.

The Pierre Lallement Bicycle Path [7], runs along the Southwest Corridor route of the Orange Line for three miles from Forest Hills in Jamaica Plain to Massachusetts Avenue in the Back Bay. The corridor continues as a sidewalk area to Dartmouth Street. It is owned by the MBTA and managed by the MDC.

Another set of paths heavily used by commuters follows the famed Emerald Necklace parks. There is an asphalt path on the Brookline side of the Muddy River [2] and a crushed stone path on the Boston side. Further to the south, there is a path beside the Jamaicaaway [3]. This path, managed by the Boston Parks and Recreation Department, continues to Jamaica Pond. The Linking the Corridors project will create separate bicycle and pedestrian paths in the Back Bay Fens [15] that will connect to the Muddy River path to the west and, via Forsyth Street, to the Pierre Lallement Bicycle Path.

Bicyclists use the wide sidewalk along Day Boulevard [10] from Carson Beach to Pleasure Bay. There is a short bicycle path behind the University of Massachusetts [12] along the water. Most of the park roads in the Arnold Arboretum [5] and some in Franklin Park [4] are closed to motor vehicles but open to bicyclists. There is a bicycle path in the Stony Brook Reservation [6].

Two new paths are under construction. The Neponset River Greenway [18], a three mile path along the Neponset River, will open in 2002. The Maverick Street to Porter Street segment (about half a mile) of the East Boston Greenway [17] will also open in 2002. A second half mile (to Neptune Avenue) will open a few years later, as will an extension in the other direction to Piers Park. There is a bicycle path along Melnea Cass Boulevard [8] connecting to Ruggles Station. The proposed South Bay Harbor Trail [16] would reconstruct this path and extend it underneath I-93 to the Fort Point Channel, where it would follow the water to the Boston Harbor at Fan Pier.

