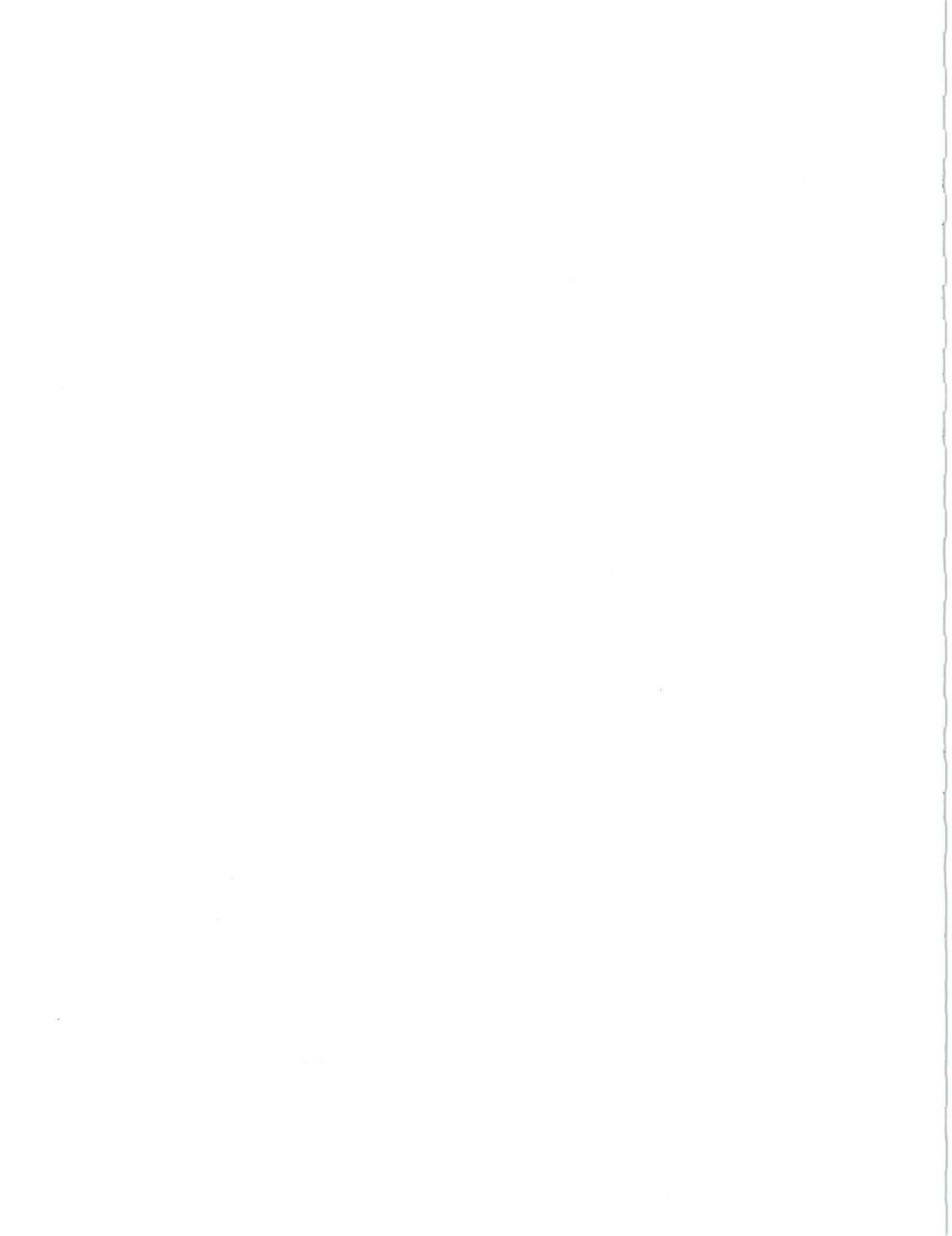




BOSTON REGION FREIGHT STUDY

A Report of the
Boston Region
Metropolitan
Planning Organization



Boston Region Freight Study

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Executive Summary

INTRODUCTION

The purpose of this study is to assemble a primer on freight in the MPO region. The main components of this primer are:

- An inventory of the freight transportation infrastructure and operations in the Boston Region Metropolitan Planning Organization area
- Descriptions of the existing and projected movements of freight in the area
- Lists of freight transportation issues perceived by stakeholders and possibly within the purview of the MPO

This executive summary, after giving some general background on the subject of freight transportation, highlights the study's inventories of infrastructure and operations and of perceived issues. An overview of movements of freight may be found in chapter 2.

BACKGROUND

The ability to efficiently move goods within the region requires suitable infrastructure, operations, and policies. Impediments to movement in any of those spheres can increase the cost of and timeframe for delivery of goods and thus impact the economy.

For the most part, the movement of freight is carried out by the private sector, using both public and private infrastructure. The two major determinants of how any given goods are shipped are transportation cost and travel time. Reliability of on-time arrival is also a factor.

Each freight mode offers advantages and disadvantages in terms of cost, speed, and reliability. Air is the fastest and most reliable and is generally used for the lowest-weight, highest-value, and most time-sensitive cargo. Trucks can move freight quickly and reliably and can carry cargo ranging widely in weight and value. Rail intermodal can be competitive with trucks over the longer distances in terms of both time and money. Rail carload and water transportation are slower and generally used for the highest-weight, lowest-value, and least time-sensitive cargo.

Nationally, the average freight trip lengths by mode are:

Air: 1,070 miles	Water: 511 miles
Rail: 617 miles	Truck: 247 miles

MPO-AREA FREIGHT TRANSPORTATION INFRASTRUCTURE AND OPERATIONS

Freight customers in the MPO area are served by all four freight modes. Generally, goods are distributed in the MPO area over a multimodal network.

Truck

Of the freight transported in Massachusetts, trucks move 94%, and indeed most freight entering the MPO area arrives by truck. Most of this freight travels on the interstate highway system and other roadways directly to its final destination.

Much of the truck freight entering the MPO area comes from the Ports of New York and New Jersey. An alternate mode of freight delivery from the New York/New Jersey area is directly out of those ports by rail to Worcester and Beacon Park Yards in Allston, where it is transferred to truck and distributed in the MPO area.

In addition, a large amount of freight that is delivered to the MPO area enters the United States via the Ports of Los Angeles and Long Beach. After it is unloaded from container ships, it comes east by truck or rail.

Water

Waterborne freight is shipped directly into the Ports of Boston, Salem, and Gloucester, off-loaded, and delivered throughout the MPO region, mainly by truck. If its destination is outside the region, it may either be delivered via truck or be transferred to CSX rail at Beacon Park Yards in Allston or at Worcester. Maritime freight is also trucked to Ayer, Massachusetts, to be transferred for movement by rail on Pan Am. At the present time, there are no operating rail lines providing direct service to the Ports of Boston, Salem, or Gloucester. Rail connections are six miles away for Boston and one mile away for both Salem and Gloucester.

Rail

By rail, freight travels to the MPO area by either the CSX or Pan Am Railways (formerly Guilford Rail System) rail line and is then delivered to its final destination by truck. As mentioned, much freight from the Port of New York/New Jersey travels by rail to Worcester and Beacon Park Yards. In the MPO region, bridge heights prevent the movement of double-stack railcars. Some goods arriving at Logan International Airport and Hanscom Field in Bedford are transferred by truck to CSX or Pan Am Railways for delivery outside the region. Freight movement by rail in the region and linking to other regions is also provided by Bay Colony Railroad in southeastern Massachusetts and Fore River Transportation in Quincy on fixed or dedicated routes.

Air

Freight shipped into the MPO area by air arrives at either Logan International Airport or Hanscom Field in Bedford. It is then transferred to truck either to be shipped to its final destination or to be again transferred to the CSX or Pan Am rail line. Currently, there are no operating rail lines providing service directly to Logan or Hanscom.

ISSUES PERCEIVED BY STAKEHOLDERS AND POSSIBLY IN THE MPO'S PURVIEW¹

The following descriptions of issues perceived by stakeholders are based on interviews with individuals affiliated with owners and operators of freight transportation facilities and services and with users of freight transportation. The following are the views of the individuals interviewed.

Truck Freight

- **Roadway congestion:** Traffic congestion is a major concern; it increases shipping time and makes deliveries unpredictable, diminishing productivity and profitability.
- **Safety:** Arterial roadway, lane-departure, and rollover crashes are of concern. The trucking industry is promoting improvements to roadway design, safety improvements, and dedicated truck lanes.
- **Bridge weight capacity:** Closed and weight-restricted bridges sometimes require long detours, resulting in increased shipping costs and reduced efficiency.
- **Truck parking:** More off-road truck-parking facilities are needed that allow truckers to pull off the road to check their vehicles and/or sleep.
- **Tandem trailer storage:** There is only one location along the Massachusetts Turnpike (Interstate 90) where tandem trailers can be stored during the times they are not allowed to operate. It is located on the turnpike at Exit 6 near Springfield, Massachusetts. A similar location closer to the MPO region would be beneficial to truck freight operations.
- **Dedicated truck lanes on interstate highways:** The creation of these lanes would reduce auto/truck crashes, improve safety and travel time, and reduce congestion.
- **Improved access to intermodal and roll-on/roll-off shipping facilities:** Better roadway access to port and rail facilities would reduce both shipping time and costs.

¹ Issues perceived by stakeholders but outside the MPO's purview are presented in chapter 8.

Waterborne Freight

- “The last mile”: Massachusetts’s seaports, like most other older seaports, have difficulty moving freight between their facility and major highways. Interposed are districts of local or residential streets.
- Lack of rail service to most port facilities: Freight trains are not currently directly accessing the Port of Boston at Conley Terminal, Moran Terminal, or Charlestown. Direct service to the ports should be provided.
- Overweight-truck routes: There is a need for more overweight-truck routes in the Port of Boston area.
- Dredging: The channel into the Port of Boston is currently dredged to a depth of 40 feet but needs to be at least 45 feet deep in order to accommodate ships of deeper draft, such as those currently servicing the Ports of New York and New Jersey. Massport is pursuing a permit for this dredging.

Rail Freight

- Double-stack: Expanded double-stack capability should be pursued; it is necessary in order for the Port of Boston to be competitive in the future with the “super ports.”
- Weight-restricted bridges: A number of rail bridges in the region cannot carry the full 286,000 pounds per train carload. This should be remedied. Also, on a segment of rail line between the Grand Junction and Allston, the ties need upgrading.
- Improving grade crossing safety: Though grade crossing collisions have declined, they are still a concern.

Air Freight

Of the issues related to the air freight industry raised by the stakeholders interviewed, none are believed to be within the MPO’s purview.

Non-Mode-Specific

- Four-mode freight centers: The region should have more intermodal freight centers that are accessible to all modes of freight.
- Broader-scoped freight planning: Joint freight planning among contiguous MPOs is desirable.

1 Introduction

The purpose of this study is to assemble a primer on freight in the MPO region. The main components of this primer are:

- An inventory of the freight transportation infrastructure and operations in the Boston Region Metropolitan Planning Organization area
- Descriptions of the existing and projected movements of freight in the area
- Lists of freight transportation issues perceived by stakeholders and possibly within the purview of the MPO

The descriptions of issues perceived by stakeholders are based on interviews with individuals affiliated with owners and operators of freight transportation facilities and services and with users of freight transportation. The individuals who were interviewed and their affiliations are listed in Appendix 1.

This report's organization of the material bulleted above and of additional material is outlined later in this introduction.

BACKGROUND

A key component of a vibrant economy for the Boston Region Metropolitan Planning Organization (MPO) area is the ability to efficiently move goods within the region. That ability requires suitable infrastructure, operations, and policies. Impediments to movement in any of those spheres can increase the cost of delivery of goods and impact the economy.

For the most part, the movement of freight is carried out by the private sector, using both public and private infrastructure. The two major determinants of how any given goods are shipped are transportation cost and travel time. Private freight customers make the choice of which mode—truck, rail, water, or air—is best able to deliver their cargo within their required timeframe for a reasonable price. Reliability of on-time arrival is also a factor.

Each freight mode offers advantages and disadvantages in terms of cost, speed, and reliability. Air is the fastest and most reliable and is generally used for the lowest-weight, highest-value, and most time-sensitive cargo; much cargo that is time-sensitive is so because it is perishable. Trucks can move freight quickly and reliably and can carry cargo ranging widely in weight and value. Rail intermodal can be competitive with trucks over the longer distances in terms of both time and money. Rail carload and water transportation are slower and generally used for the highest-weight, lowest-value, and least time-sensitive cargo.

Nationally, the average freight trip lengths by mode are:

Air: 1,070 miles	Water: 511 miles
Rail: 617 miles	Truck: 247 miles

ORGANIZATION OF THIS REPORT

Chapter 2 gives an overview of primary paths of freight movement to and within the MPO region, of key freight infrastructure, and of current and projected quantities of freight transported. It also lists non-mode-specific issues perceived by stakeholders and possibly within the purview of the MPO.

Chapters 3 through 6 address truck, waterborne, rail, and air freight transportation, respectively. They inventory the infrastructure and operations and list issues perceived by stakeholders and potentially within the purview of the MPO. Information on current and anticipated freight movements and types of freight moved is generally presented in the context of the information on infrastructure and operations. However, in the rail chapter it is also summarized in a brief overview section. Other material provided in chapters 3 through 6 is historical background and information on logistics.

Chapter 7 discusses what other MPOs around the country are doing in freight transportation planning. It also describes federal regulations and programs pertinent to such planning.

Chapter 8 presents issues perceived by stakeholders but lying outside the purview of the MPO.

STUDY METHODS

The primary methods used in this study were stakeholder interviews, document searches, Internet research, and literature reviews. The report itself is a summary of information gathered via these interviews and reviews, supplemented with pertinent data derived from the document searches.

2 Overview of the Region's Freight Movement and Key Facilities; Non-Mode-Specific Issues

The MPO area freight story can be summarized by saying that most goods manufactured outside of the MPO region and delivered to the region come by one of the following methods:

- By truck directly from almost anywhere on the continent to their final destination in the MPO region (or elsewhere in Massachusetts)
- From the Port of New York/New Jersey:
 - By truck to their final destination in the MPO region (or elsewhere in Massachusetts) or
 - By single-stack rail to the Port of Worcester or to Beacon Park Yards in Allston; then transferred to truck for transport directly to their final destination in the MPO region (or elsewhere in Massachusetts)
- By ship to the Port of Boston
 - Delivered by truck to their final destination in the MPO region or elsewhere in Massachusetts (the port has relatively easy access to Interstates 90 and 93 via the South Boston Haul Road) or
 - Delivered by truck to Beacon Park Yards in Allston or to the intermodal facility in Ayer, for intermodal, rail, or truck delivery to their final Massachusetts destination
- From the Port of Los Angeles/Long Beach
 - By double-stack rail to Syracuse, New York, for destacking into single-stack rail cars for delivery to the Port of Worcester or to Beacon Park Yards in Allston; then loaded onto trucks for delivery to their final destination
 - By truck for the entire trip from the Port of Los Angeles/Long Beach
- By air to Logan International Airport, delivered by truck to their final destination in the MPO region (or elsewhere in Massachusetts)

Table 1 shows the amount of freight delivered by highway, water, rail, and air to Massachusetts in 1998 and projected to be delivered in 2010 and 2020. Highway, or truck, is by far the dominant mode. Its current share (arrived at by interpolating between the 1998 and 2010 figures) is approximately 94%.

Figure 1 shows the routes and locations of the major highways and rail lines that connect the intermodal rail and water freight facilities and airports serving the Boston Region

**TABLE 1
Massachusetts Freight Movement**

Mode	Tons (millions)			Value in Dollars (billions)		
	1998	2010	2020	1998	2010	2020
Air	<1	<1	1	28	66	114
Highway	162	222	268	122	222	355
Rail	14	20	25	8	12	19
Water	14	21	24	2	4	7
Other	8	11	14	1	3	5
State Total	199	274	332	161	307	499
By Destination Market						
Domestic	179	245	293	138	255	403
International	20	30	39	23	53	96

Source: Federal Highway Administration

MPO area. Table 2 lists the commonwealth's busiest intermodal freight facilities and indicates the modes accommodated by them.

NON-MODE-SPECIFIC ISSUES PERCEIVED BY STAKEHOLDERS AND POTENTIALLY IN THE MPO'S PURVIEW

Descriptions of issues perceived by stakeholders were compiled based on interviews with individuals affiliated with owners and operators of freight transportation facilities and services and with users of freight transportation. Perceived issues that are related to truck, water, rail, and air freight transportation and may be of interest to the MPO are presented in the following four chapters, respectively, which address those modes. The non-mode-specific issues perceived by stakeholders and possibly of interest to the MPO are presented below. The following are descriptions of the views of the individuals interviewed (all interviewees for this study are listed in Appendix 1).

Four-Mode Freight Centers

The region should have more intermodal freight centers that are accessible to all four modes of freight. An example of this would be created by providing rail access to the Port of Boston: doing this would make the new intermodal freight centers being constructed in the South Boston Marine Industrial Park practically accessible by water, rail, and truck, with air being connected by a short ride through the Ted Williams Tunnel.

Broader-Scoped Freight Planning

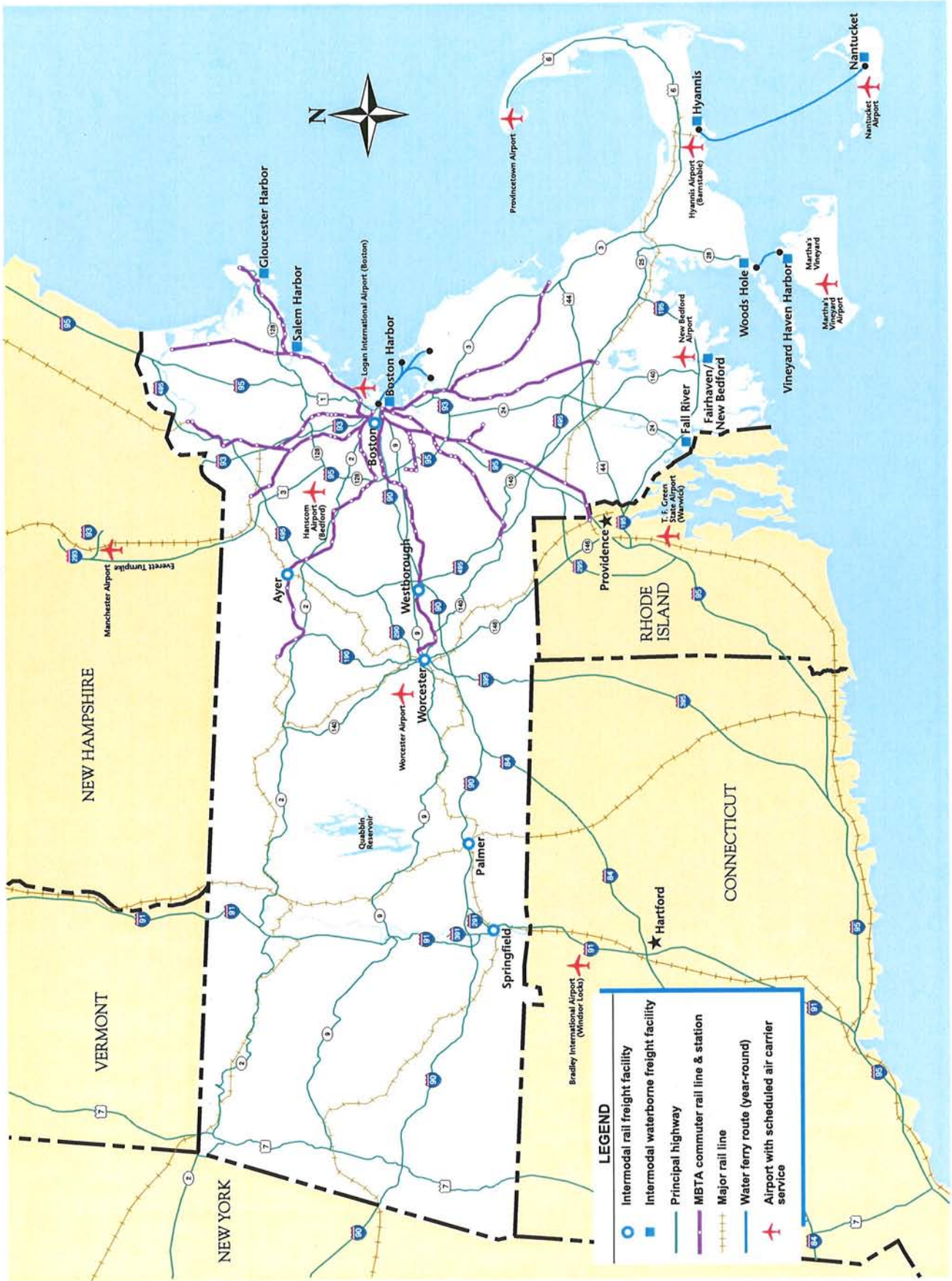
Joint freight planning among contiguous MPOs is desirable.

TABLE 2
Massachusetts Intermodal Freight Facilities

Facility	Modes Accommodated
Massport Conley Terminal	Water / Truck
Boston Autoport	Water / Rail / Truck
New Bedford / Fairhaven Harbor	Water / Truck
Fall River Harbor	Water / Rail / Truck
Salem Harbor	Water / Rail / Truck
Route 1A / Chelsea Creek Petroleum Terminals	Water / Truck
Weymouth Fore River	Water / Truck
Woods Hole MV&N Steamship Terminal	Water / Truck
Hyannis MV&N Steamship Terminal	Water / Truck
Vineyard Haven MV&N Steamship Terminal	Water / Truck
Nantucket MV&N Steamship Terminal	Water / Truck
Worcester Municipal Airport	Air / Truck
New Bedford Municipal Airport	Air / Truck
Barnstable Municipal Airport	Air / Truck
Nantucket Memorial Airport	Air / Truck
Logan International Airport	Air / Truck
Westover Metropolitan Airport	Air / Truck
Barnes Municipal Airport	Air / Truck
Hanscom Field	Air / Truck
Martha's Vineyard Airport	Air / Truck
Worcester P&W Railroad Wiser Avenue Yard	Rail / Truck
Ayer B&M Railroad Auto Yard	Rail / Truck
West Springfield CSX Yard	Rail / Truck
Devens Intermodal Rail Terminal	Rail / Truck
Beacon Park CSX Railroad Yard	Rail / Truck
Worcester P&W Railroad Southbridge Street Yard	Rail / Truck
Worcester TVT CSX Yard	Rail / Truck
Westborough CSX Auto Yard	Rail / Truck
Palmer Intermodal Terminal	Rail / Truck

Source: Massachusetts Office of Transportation Planning

FIGURE 1
Massachusetts Intermodal Freight Facilities



3 Truck Freight

After providing background information on truck freight, this chapter inventories the infrastructure and facilities serving the transport of freight over roadways and records the truck freight issues perceived by stakeholders and possibly within the purview of the MPO.

BACKGROUND

Volumes of Truck Freight

A major portion of the United States economy depends on freight transported by truck. This holds true for the MPO region's economy as well. Trucks make the final delivery of goods to our car dealerships and our corner stores, our home improvement warehouses and our hair salons . . . even to our own doorsteps.

Of all the freight transported in Massachusetts, 93.7% is now carried by truck. Nationally, that percentage is 78%. In 2004, there was over ten billion tons of freight moved by truck in the United States. That number is expected to increase to 13 billion tons by the year 2009. Figure 2 shows the volumes, in tons, of domestic truck-freight traffic in the corridors of travel in the U.S. (In this report, each chapter's *full-page* figures and tables are at the end of the chapter.)

History

The first truck was built in the United States in 1899. Not long after that, the first truck was licensed in Massachusetts. The ongoing improvements in both roads and trucks during the early part of the 20th century gradually freed freight shippers from having to site their facilities near railroads or water. Beginning in the 1950s, the interstate highway system was created, connecting cities with the entire economies of their regions. Manufacturing facilities and residential areas moved farther and farther away from the cities, using the cheap, developable land that had been made accessible by the improved highway network. However, this, in turn, helped to create suburban sprawl, contributing to the congestion that now exists on much of that network.

The long-haul trucker took away a tremendous portion of the business of hauling goods and materials from the railroads, coastal steamers, and river barges. Although the railroads and various marine vessels were able to continue to haul freight to some remaining customers, the truck soon became the only way to serve the newly created suburban customers and the dominant freight mode overall.

Trucking Associations and Businesses

Listed below are some of the major trucking associations to which MPO region trucking firms belong. It is through these organizations that trucking concerns lobby local, state, and federal government concerning highway improvements and other amenities and issues.

- Massachusetts Motor Transportation Association (MMTA)
- Regional Truck Council (RTC)
- American Transportation Research Institute (formerly the American Trucking Research Institute) (ATRI)
- American Trucking Foundation (ATF)
- American Trucking Association (ATA)

There are approximately 260 for-hire trucking companies operating in Massachusetts (compared with, for example, 2,000 trucking companies operating in New Jersey). Approximately 24,000 people are employed in the truck freight transportation industry in the state. With today's competition, congested highways, tough new federal hours-of-service (HOS) rules—made even more stringent in October 2005 (for more details see the truck section of chapter 8)—and employers' use of global positioning systems to keep track of their trucks and truckers, fewer new truck drivers are entering the profession.

Vehicles and Capacities

Trucking companies operate on both a truckload and a less-than-truckload (LTL) basis. A truckload is typically greater than five tons in weight and moved a long distance, typically out of state. LTL trucks carry lesser amounts over shorter distances. The two fundamental types of trucking operations are long-haul, which often use "18-wheelers" with sleeper cabs attached to the back of their tractors, and "local," which may use anything from a tractor-trailer down to a pickup truck. The categories of trucks are depicted in Figure 3, which presents all of the Federal Highway Administration (FHWA) Scheme F Vehicle Classifications.

INFRASTRUCTURE/FACILITIES INVENTORY

Roadways for Truck Freight in the MPO Region and Massachusetts

In the MPO region, there are approximately 23,000 lane-miles of highway. This includes approximately 1,000 miles of interstate highway, 6,000 miles of arterial roads, 2,000 miles of collector roads, and 14,000 miles of local roads.

The major truck routes that go into, out of, and around the MPO region are:

- Interstate 95 – a north-south roadway providing connections to New Hampshire, Maine, and southern states from Rhode Island to Florida; joins with the Route 128 beltway (see below) to bypass Boston

- Interstate 93 – a north–south roadway providing direct access to many regional destinations, including Interstate 95 and Interstate 90
- Interstate 90 (the Massachusetts Turnpike) – an east–west toll road running between the New York State line and Logan International Airport
- Interstate 495 – a beltway bypassing Boston, running through the southern, western, and northern fringes of the region
- Massachusetts State Route 128 – another beltway with a routing similar to that of Interstate 495, but running closer to Boston
- Route 24 – a connection between Route 128 and the southern Massachusetts cities of Fall River and New Bedford

The Ted Williams Tunnel has greatly improved highway connections for the Boston Seaport area. It has reduced the travel time from Logan Airport to the Boston Seaport area to 4½ minutes; previously the time, using the Tobin Bridge, was 45 minutes. The Ted Williams Tunnel, because of its greater vertical clearances, is the only local tunnel that can handle larger tractor-trailer rigs.

Other major state routes in the MPO region are Route 3, Route 3A, Route 1, Route 1A, Route 9, and Route 2. Figure 4 shows all of the major highways in the MPO region, Figure 5 all those in Massachusetts. The functional classification of roadways in the state, down to urban principal arterials and rural minor arterials, is shown in Figure 6.

The ownership, by number of miles, of public roadways in Massachusetts is given in Table 3.

TABLE 3
Public Roadway Ownership and Maintenance Responsibilities

Governmental Entity	Centerline Miles	% of Total
City and town accepted	28,332	88.4%
MassHighway	2,843	8.9%
State Park	275	0.9%
Dept. of Conservation and Recreation	263	0.8%
Mass. Turnpike Authority	143	0.4%
Federal agencies	110	0.3%
Other agencies	70	0.2%
Statewide total	32,036	100%

Source: Massachusetts Highway Department

Massachusetts roadways that are part of the National Highway System (NHS) are shown in Figure 7. The NHS, developed by the U.S. Department of Transportation in conjunction with states, local officials, and MPOs, consists of approximately 160,000 miles of roadway important to the nation's economy, mobility, and defense. The NHS includes interstates; other principal arterials; the Strategic Highway Network (STRAHNET), which comprises the highways providing national defense and emergency response access; the Major Strategic Highway Connectors, which are STRAHNET highways providing access between major military installations; and connectors between intermodal facilities.

The South Boston Bypass Road/Massport Haul Road is a designated truck route that carries heavy industrial truck traffic from local highways to the South Boston Marine Industrial Port and Conley Terminal. This route is a vital connection for industrial uses along the South Boston waterfront. It is the primary connection for freight traffic coming into and out of the Port of Boston.²

Overweight-Truck Permits and Routes

Permits

A tractor-trailer (18-wheel) truck is legally allowed to carry up to 80,000 pounds of freight over state highways without a permit. The permits issued in Massachusetts are as follows:

- Reducible Load – For trailer dump trucks, tanker trailers, and other bulk tractor-trailers carrying from 80,001 to 99,000 pounds; good for one year on all roads
- Irreducible Load – For the transport of heavy construction equipment, such as backhoes and bulldozers; weight 99,001 to 130,000 pounds; good for one time only, and only on specific routes
- Super Load – For loads over 130,000 pounds; also good for one time only, and only on specified routes; requires a very involved process to obtain

Applicable federal and state laws covering the above are contained in the Code of Federal Regulations (CFR), Title 23, Part 658.17; Massachusetts General Law (MGL) Chapter 85, Sections 30 and 30A; MGL Chapter 90, Sections 19 and 19A; and Code of Massachusetts Regulations (CMR) 720, Sections 7.00 and 7.14.

In the MPO region, overweight international seaborne shipping containers require special handling, as they may not be opened and inspected at the Port of Boston, because of their

²South Boston has long been an industrial employment center. In the 20th century, industry there shifted from iron, glass, brick, wagon, and soap manufacturing to elevator and beer manufacturing. It shifted its shipping modes from railroads and steamships to seaborne containers that relied increasingly on vehicular transportation to move it out of the seaport. Truck routes were designated in South Boston to keep these industrial uses viable. The South Boston Bypass Road is one example of these truck routes.

U.S. Customs seal. Their shipper must provide special trucks and obtain a special permit from MassHighway in order to move them to their final destination.

Routes

Two overweight-truck routes allowing weights up to 99,000 pounds are designated in the Boston area. They were designated primarily for the benefit of the seafood business: going to Gloucester (Route 1A to Route 128) and to New Bedford (Interstate 93 to Route 24). From the Port of Boston area, truckers access them via a route running from Drydock Avenue to the Fargo Street Extension to E Street to Summer Street.

Bridges

There are over 1,500 bridges in the MPO region. Jurisdiction over these bridges and the other bridges in Massachusetts is shown in Table 4, with a breakdown of their physical condition given in Table 5.

**TABLE 4
Highway Bridge Jurisdiction
(2004)**

Governmental Entity	Number of Bridges	Percent of Total
MassHighway	2883	58%
Cities & Towns	1554	31%
Mass. Turnpike Authority	345	7%
Dept. of Conservation & Recreation	109	2%
Massachusetts Bay Transportation Authority	74	1%
Other Agencies	24	<1%
Statewide Total	4989	100%

Source: Massachusetts Highway Department

MassHighway’s statewide Bridge Management System classifies each bridge into one of three categories:

1. Meets standards
2. Functionally obsolete: Fails to meet current traffic demands or highway standards, such as condition, width, or volume
3. Structurally deficient: Load-carrying capacity has been reduced and reconstruction is or may be necessary

TABLE 5
Highway Bridge Condition Ratings

Governmental Entity	Total Bridges	Meeting Standards	Functionally Obsolete	Structurally Deficient
MassHighway	2883	67%	23%	10%
Cities & Towns	1554	61%	23%	16%
Mass. Turnpike Authority	345	66%	29%	5%
Dept. of Conservation & Recreation	109	42%	40%	18%
Massachusetts Bay Transportation Authority	<i>[Information</i>	<i>to</i>	<i>be</i>	<i>added]</i>
Other Agencies	24	25%	58%	17%
Statewide Total	4989	63%	25%	12%

Source: Massachusetts Highway Department

Typically, if a bridge is designated either as “functionally obsolete” or as “structurally deficient” due to significant deterioration of the bridge deck, supports, or other major components, it must be “posted.” Posted bridges have signs at both ends informing drivers of vehicle weight restrictions, broken out by number of axles. Some posted bridges can be repaired or rehabilitated to meet such standards; others must undergo costly replacement. Very old bridges that cannot be made to carry heavy vehicles may nevertheless be kept for aesthetic reasons or as a community or cultural resource. Currently, there are over 600 structurally deficient bridges in the commonwealth, with over 160 of these in the MPO area.

Posted bridges can have a significant impact on freight traffic and other users. Heavy trucks, emergency vans, school buses, and other heavy vehicles are forced to seek alternate routes. Redirected trips lengthen travel time, use more fuel, and reduce the efficiency of the local economy. Figure 8 is a map of the posted bridges in the MPO region. Appendix 2 contains a list of the 687 bridges that are posted in Massachusetts. Appendix 3 lists the bridges in the Boston region that are scheduled to be reconstructed over the next five years.

ISSUES PERCEIVED BY TRUCK-FREIGHT STAKEHOLDERS AND POSSIBLY IN THE MPO’S PURVIEW

The following descriptions of issues perceived by stakeholders and possibly in the MPO’s purview are based on interviews with individuals affiliated with owners and

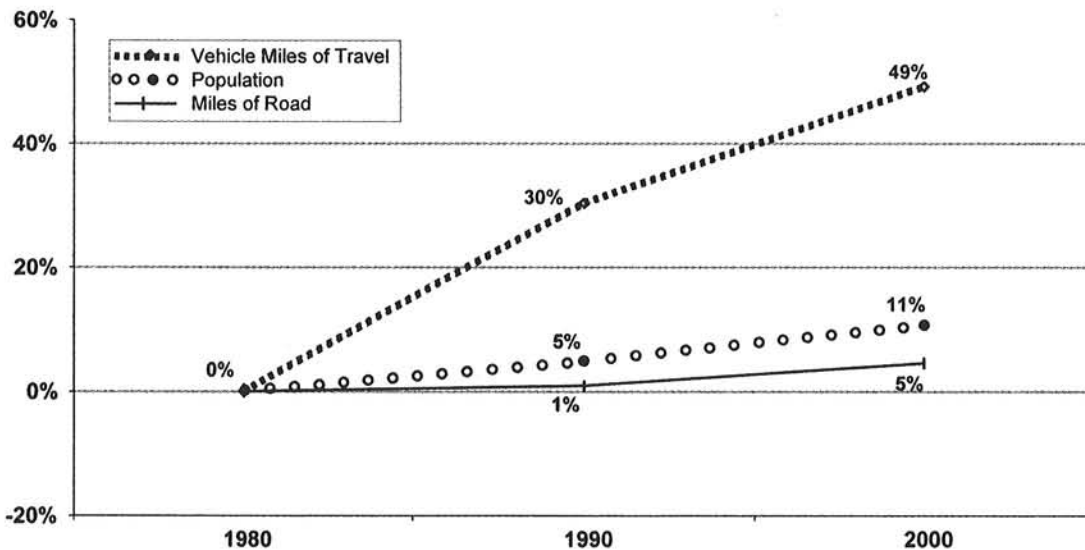
operators of freight transportation facilities and services and with users of freight transportation. Issues perceived by stakeholders but outside the MPO's purview are listed in chapter 8. The following are descriptions of the views of the individuals interviewed (all interviewees for this study are listed in Appendix 1). Some related data are also provided in some cases.

Congestion

Traffic congestion has a major impact on the trucking industry. Especially when it is combined with trucking hours-of-service restrictions, it can seriously diminish productivity and a firm's bottom line. For these reasons, dedicated truck lanes and/or allowing trucks to travel in the high-speed or far-left-hand lanes of highways would be desirable.

Currently, trucks are only allowed in the right-hand or middle lanes. Data on how congestion has grown over time are given in Figures 9 and 10; Figure 11 shows estimated volume-to-capacity ratios on major roads in Massachusetts.

FIGURE 9
Population, VMT, & Roadway Mileage Growth from 1980 to 2000



Source: Massachusetts Highway Department

Safety

Lane-departure crashes, rollover crashes, and safety in general are of concern. Roadway-design improvements, dedicated truck lanes, and other safety improvements are desired. Any reduction in the number of crashes has a corresponding effect on congestion.

The top 60 crash locations for arterial roadways, which include major truck routes in the Boston region, are listed in Table 6.

Figure 12 plots the locations of lane-departure crashes in the MPO region. The Federal Highway Administration (FHWA) defines lane-departure crashes as those in which a vehicle unintentionally departs from its lane and crashes with another vehicle, rolls over, or hits a fixed object. In 2003, these crashes accounted for approximately 60% of the serious injuries and deaths and 40% of all crashes nationwide.

The Federal Motor Carrier Safety Administration (FMCSA), as part of its “Large Truck Crash Causation Study” and its overall goal of reducing the number of large truck crashes, is working with the trucking industry to evaluate Lane Departure Warning Systems (LDWS) for commercial motor vehicles. These systems involve both an on-board component and sensors mounted in the roadway (see Figure 13). Undertaking the installation of an LDWS might be a possible component of both safety and congestion-reduction programs.

A high percentage of the lane-departure crashes in the MPO region are truck rollovers occurring at the Interstate 93/Interstate 95 interchange in Woburn and the Interstate 495/Interstate 290/Route 85 interchange in Marlborough. These two interchanges are included in the MPO’s 2004–2025 Regional Transportation Plan for reconstruction and safety improvements in the future.

Bridge Weight Capacity

Closed and weight-restricted bridges cost truckers time and money due to increased fuel consumption, longer delivery times, and other inefficiencies. An example of the problems a closed or weight-restricted bridge causes is the bridge located on Massachusetts State Route 99 in Everett. On this bridge, the reduction in allowable weight from 80,000 pounds, the normal, upper weight limit (no permit required) for tractor-trailer trucks, down to 8,000 pounds requires a detour of 1 to 1½ hours. This can represent a large extra cost for a trucking company. In an example cited, one particular company would incur an extra cost of \$13,000 per month (data and calculation method are detailed in Endnote 1).

Truck Parking

The lack of parking facilities for trucks in Massachusetts and the MPO area is a major impediment. More truck parking facilities are needed to allow truckers to pull off the road and check their vehicles for safety, to sleep (in order to comply with hours-of-service regulations), or for other reasons. It is difficult to site these facilities because many people do not want trucks parking near their residences, for a number of reasons, including noise and exhaust from idling trucks. The Massachusetts Motor Transportation Association has proposed using empty commuter rail parking lots during off-peak hours.

Another problem is that there is only one location along the Massachusetts Turnpike (Exit 6 near Springfield) where tandem trailers (double trailers pulled by one truck) can

TABLE 6
Top 60 Crash Locations on Boston Region MPO Area Arterial Roadways, 1999-2001

Rank	City/Town	Roadway		Intersecting Street		Crashes	
		Rte. No.	Street Name	Rte. No.	Street Name	Total No.	Weighted Score
1	Somerville	28	Fellsway		Mystic Avenue	544	1413
2	Medford	16	Mystic Valley Parkway	28	Fellsway	372	936
3	Boston	203	Gallivan Boulevard	3A	Neponset Avenue	343	851
4	Natick	9	Worcester Street		Speen Street	328	612
5	Natick	27	North Main Street	9	Worcester Street	313	593
6	Newton		Centre Street		Washington Street	302	643
7	Wellesley	16	Washington Street	9	Worcester Street	279	563
8	Boston	28	Embankment Road		Charles Circle	258	530
9	Revere	107	Broadway	60	Albert J Brown Circle	239	652
10	Boston		William T Morrissey Boulevard		Freeport Street	236	576
11	Somerville	28	McGrath Highway		Washington Street	222	590
12	Boston		Charlesgate West		Storrow Drive	207	499
13	Concord	2	Reformatory Circle	2A	Lincoln Turnpike	202	350
14	Everett	99	Broadway	99	Sweetser Circle	200	472
15	Boston		Airport Road		Service Road To North Cargo	173	377
16	Natick		Flutie Pass		Speen Street	169	273
17	Cambridge		Garden Street	2A	Massachusetts Avenue	161	337
18	Peabody	114	Andover Street		Prospect Street	159	315
19	Framingham	30	Edgell Road	9	Worcester Road	158	366
20	Natick		Oak Street	9	Worcester Street	153	269
21	Bedford	3	Route 3		Burlington Road	149	365
22	Weymouth	18	Main Street		Middle Street	146	314
23	Reading	28	Main Street		South Street	145	333
24	Boston		Brookline Avenue		Riverway	143	391
25	Cambridge	2A	Massachusetts Avenue	3	Memorial Drive	141	353
26	Boston		Airport Road	1A	East Boston Expressway	139	311
27	Waltham		Lexington Street		Trapelo Road	138	210
28	Newton		Chestnut Street	9	Boylston Street	136	316
29	Quincy		Honorable Thomas S Burgin Parkway		Washington Street	134	330
30	Marlborough	20	East Main Street		Curtis Avenue	134	258
31	Boston		Kosciuszko Circle		William T Morrissey Boulevard	132	328
32	Boston		Cambridge Street		Soldiers Field Road	129	254
33	Framingham	30	Cochituate Road	9	Worcester Road	127	339
34	Framingham	126	Concord Street	135	Waverley Street	127	243

TABLE 6
Top 60 Crash Locations on Boston Region MPO Area Arterial Roadways, 1999-2001

35	Boston		Atlantic Avenue			New Northern Avenue	126	290
36	Boston		North Harvard Street			Soldiers Field Road	126	274
37	Watertown	20	Main Street		16	Mount Auburn Street	126	270
38	Natick	9	Worcester Street			Dean Road	125	277
39	Natick		Speen Street		135	West Central Street	124	245
40	Framingham		Concord Street			Worcester Road	123	291
41	Weymouth		Middle Street		53	Washington Street	123	247
42	Pembroke		Church Street			Route 3	121	273
43	Weymouth	18	Main Street			Pleasant Street	118	250
44	Rockland		Hingham Street			Pilgrims Highway	117	301
45	Somerville		Broadway		28	Mc Grath Highway	116	328
46	Newton		Hammond Pond Parkway		9	Boylston Street	116	288
47	Boston	2	Commonwealth Avenue			Beacon Street	116	241
48	Stoughton		Central Street		138	Washington Street	114	246
49	Wellesley	9	Worcester Street			Weston Road	114	198
50	Quincy		Honorable Thomas S Burgin Parkway			Centre Street	113	285
51	Weymouth	18	Main Street			Winter Street	113	249
52	Cambridge	3	Memorial Drive			River Street	112	236
53	Everett	16	Revere Beach Parkway		16	Santilli Circle	109	301
54	Everett	16	Revere Beach Parkway			Everett Avenue	106	302
55	Braintree		South Shore Plaza			Granite Street	105	249
56	Quincy		Sea Street		3A	Southern Artery	105	193
57	Boston	20	North Beacon Street			Soldiers Field Road	103	271
58	Boston		Birmingham Parkway			Western Avenue	100	260
59	Boston		Storrow Drive		28	David G Mugar Way	99	215
60	Boston	28	Blue Hill Avenue			Columbia Road	98	286

be dropped off. Tandem trailers are not allowed east of Exit 4 on the turnpike.

Dedicated Truck Lanes

The feasibility of creating dedicated truck lanes on the Massachusetts Turnpike and other state roads should be explored. The American Road and Transportation Builders Association supports toll-financed truck-only lanes.

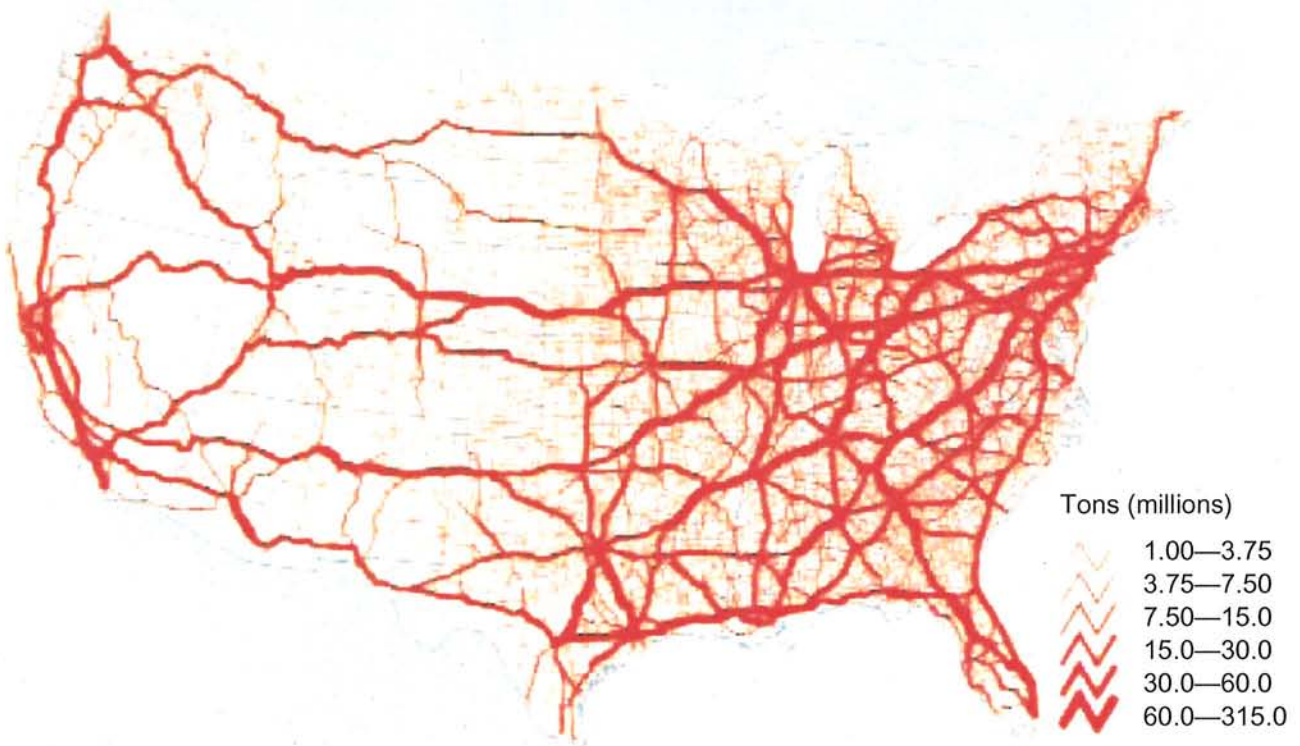
Improved Access to Intermodal Facilities; Roll-on/Roll-off Shipping

There is a need for improved access to intermodal facilities, especially in the older, more densely developed areas where residential roadways must sometimes be used and/or where there is no direct rail access. Improved access would reduce shipping time, which, in turn would reduce costs.

It would be advantageous, particularly to independent truckers, for roll-on/roll-off shipping to be available in the MPO region.

In roll-on/roll-off shipping, goods carried via barge are in a trailer or container that is on a chassis with wheels and tires. The truck driver hooks his cab or tractor onto the chassis and drives it on or off the barge. The Port of Fall River (outside the MPO region) has roll-on/roll-off shipping.

FIGURE 2
U.S. Domestic Truck Freight Traffic
Year 2000



Source: Reebie Associates TRANSEARCH and U.S. DOT Freight Analysis Framework Project

FIGURE 3
FHWA Scheme F Vehicle Classification

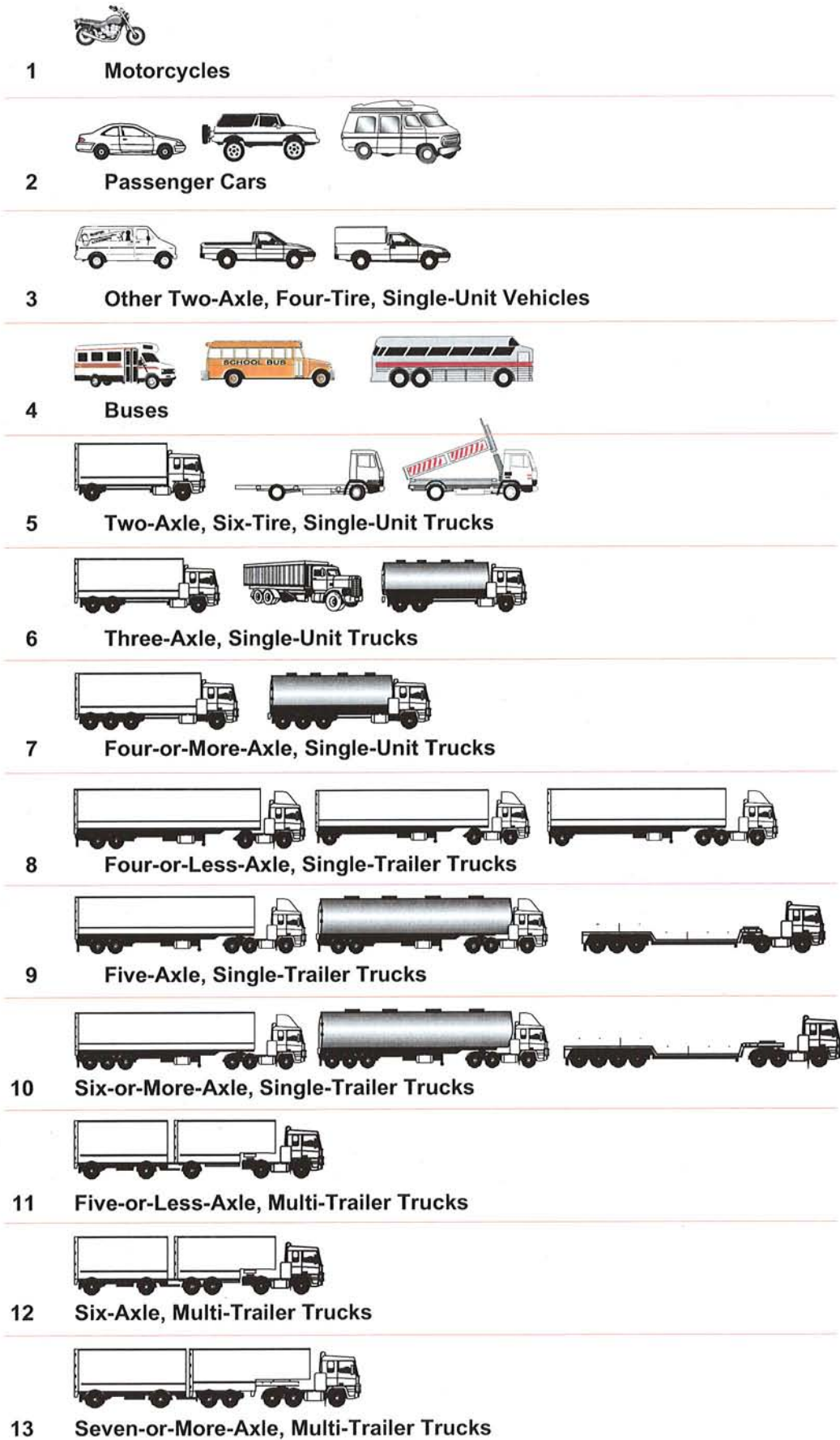


FIGURE 4
Boston Region MPO Area: Municipalities and Regional Transportation Corridors



FIGURE 5
Major Highways in Massachusetts

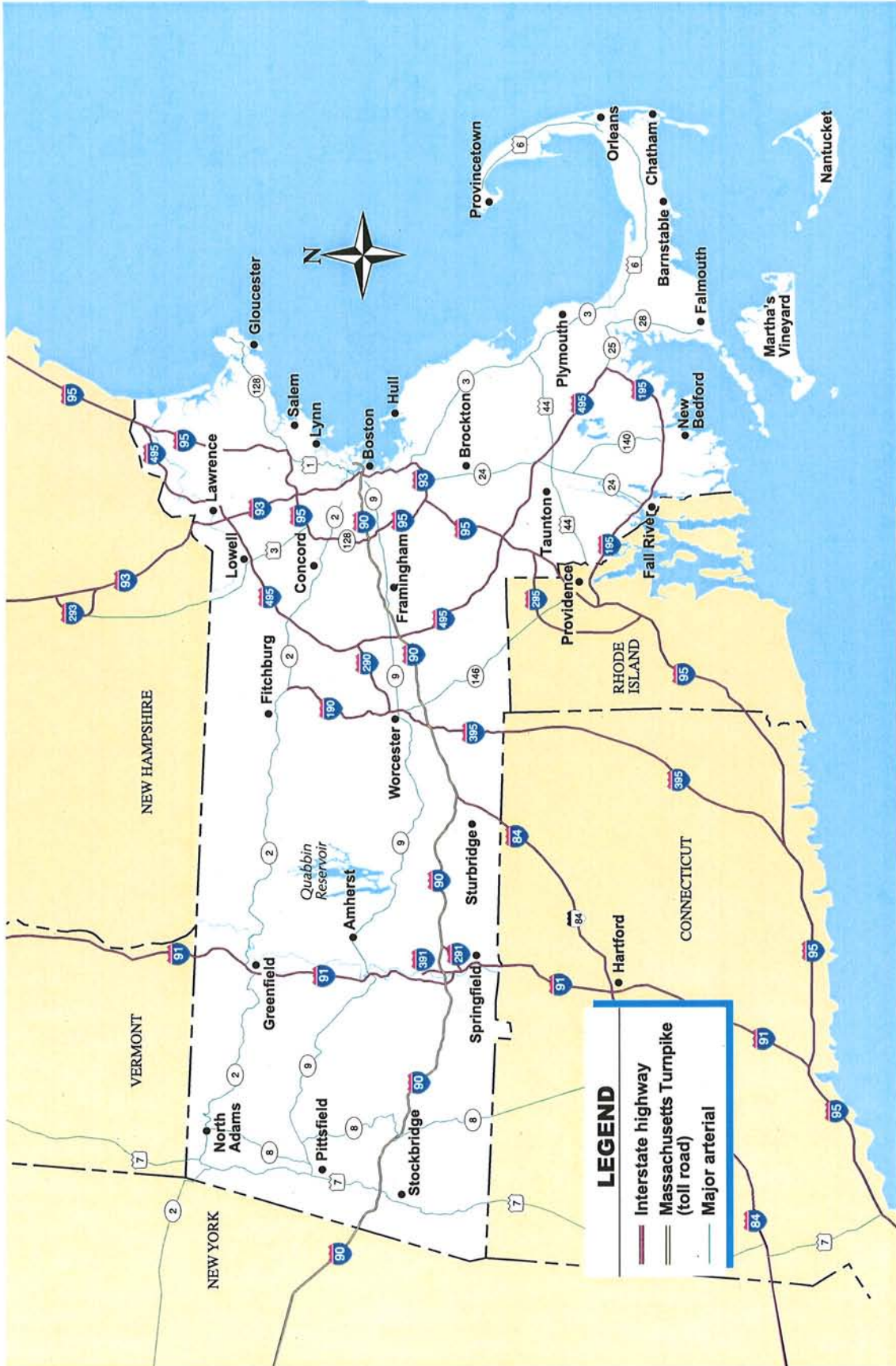


FIGURE 6
Functional Classification of Major Roads in Massachusetts

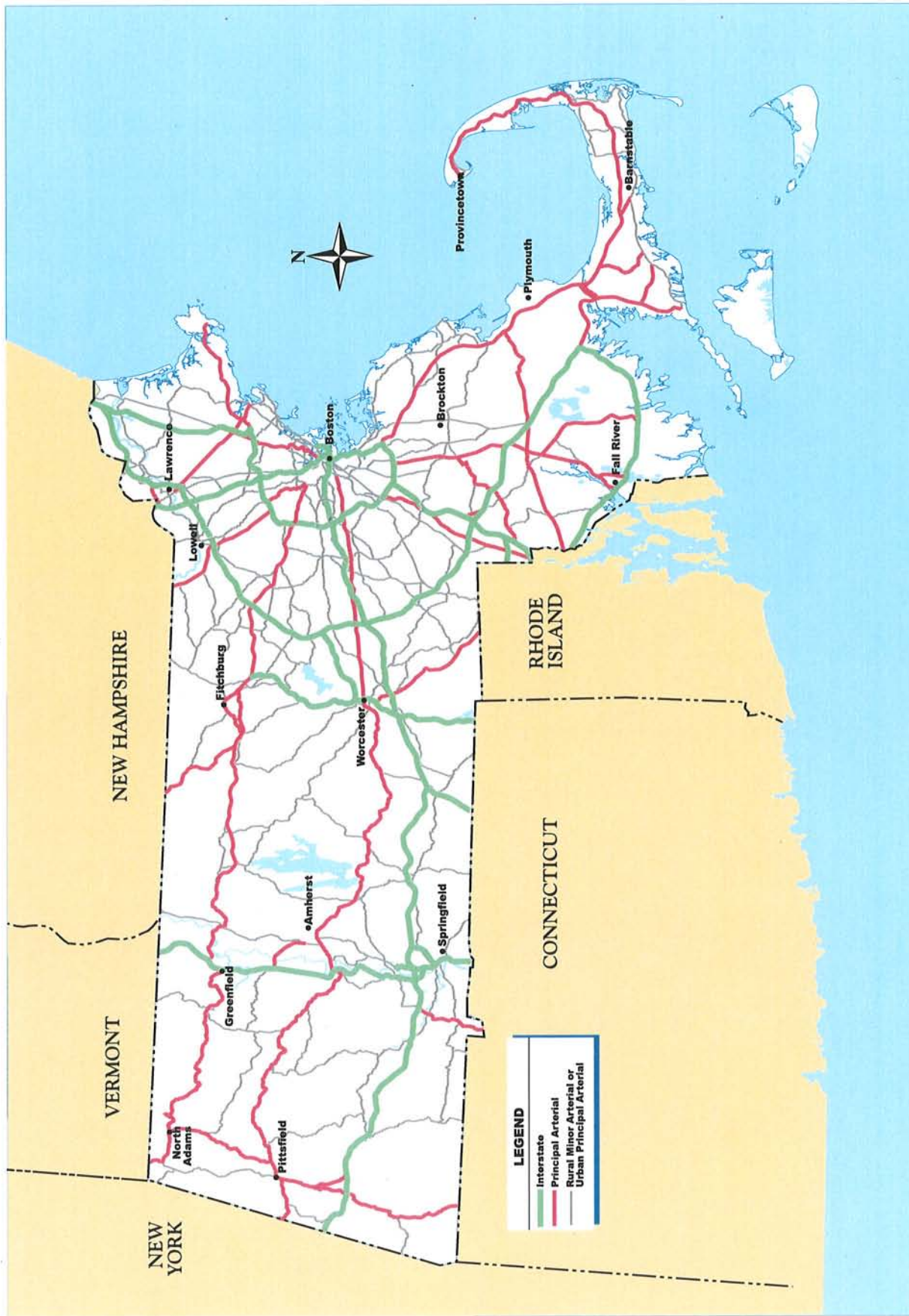


FIGURE 7
National Highway System Routes

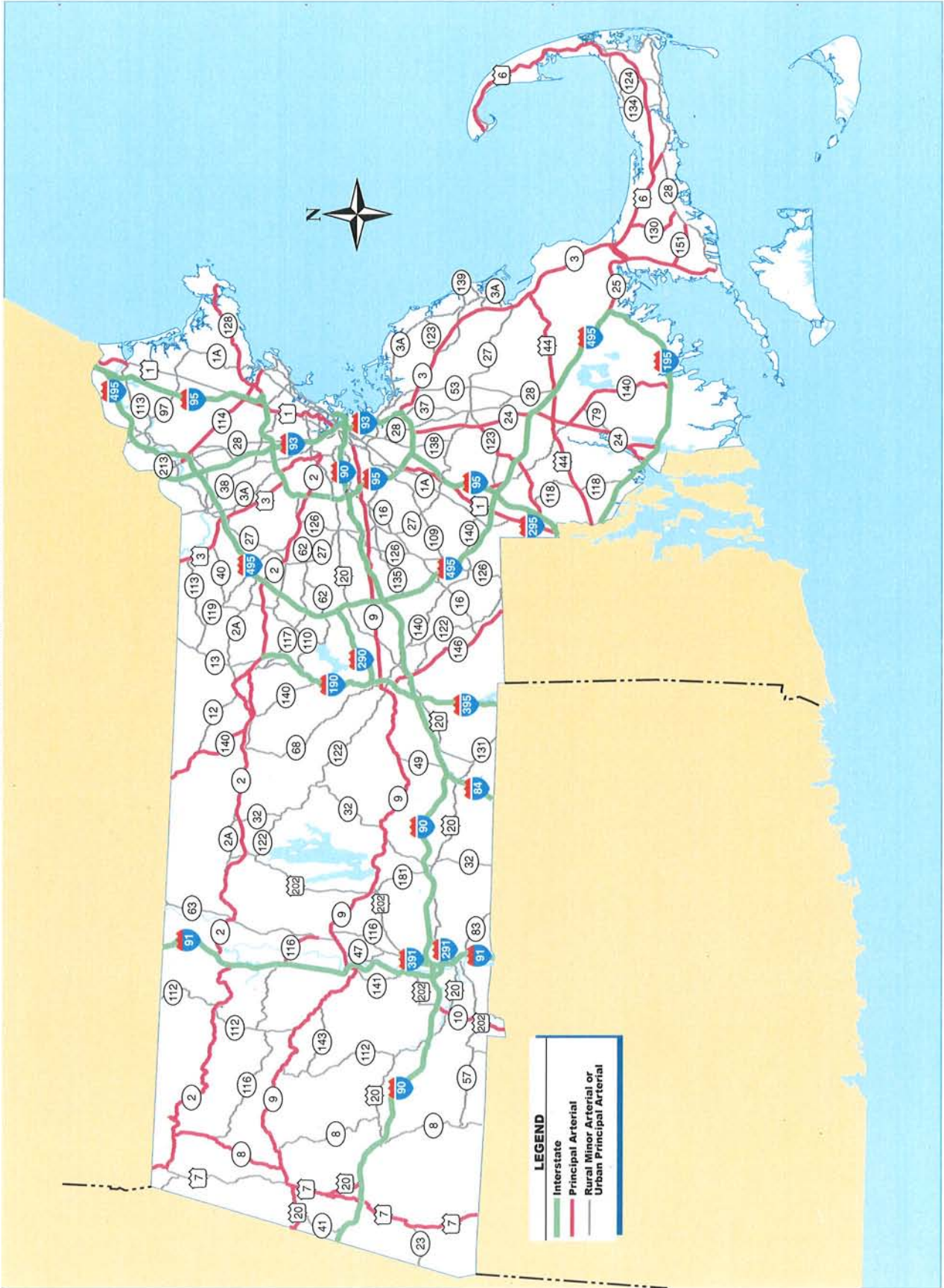


FIGURE 8
Roadways with Posted Bridges

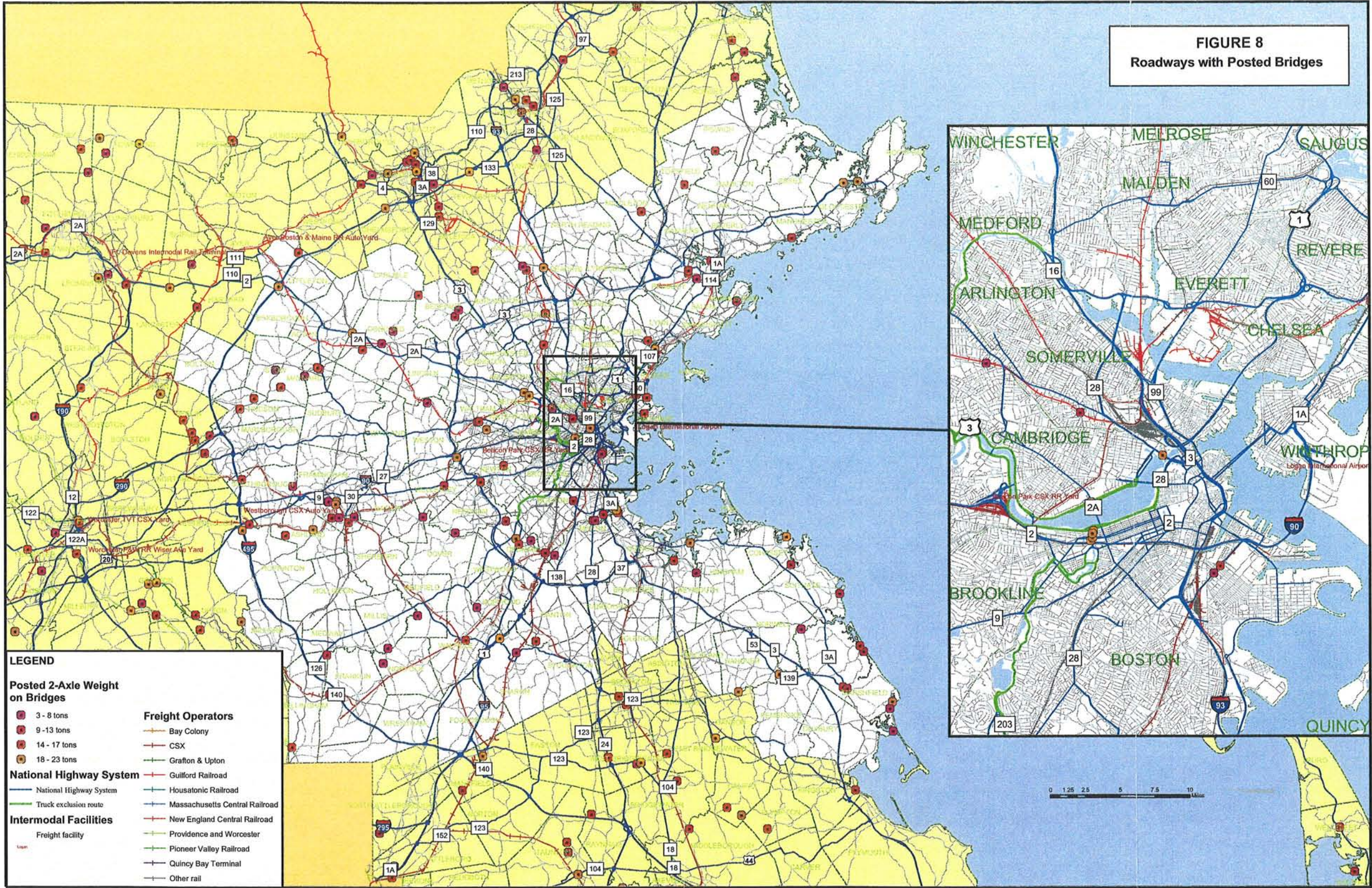
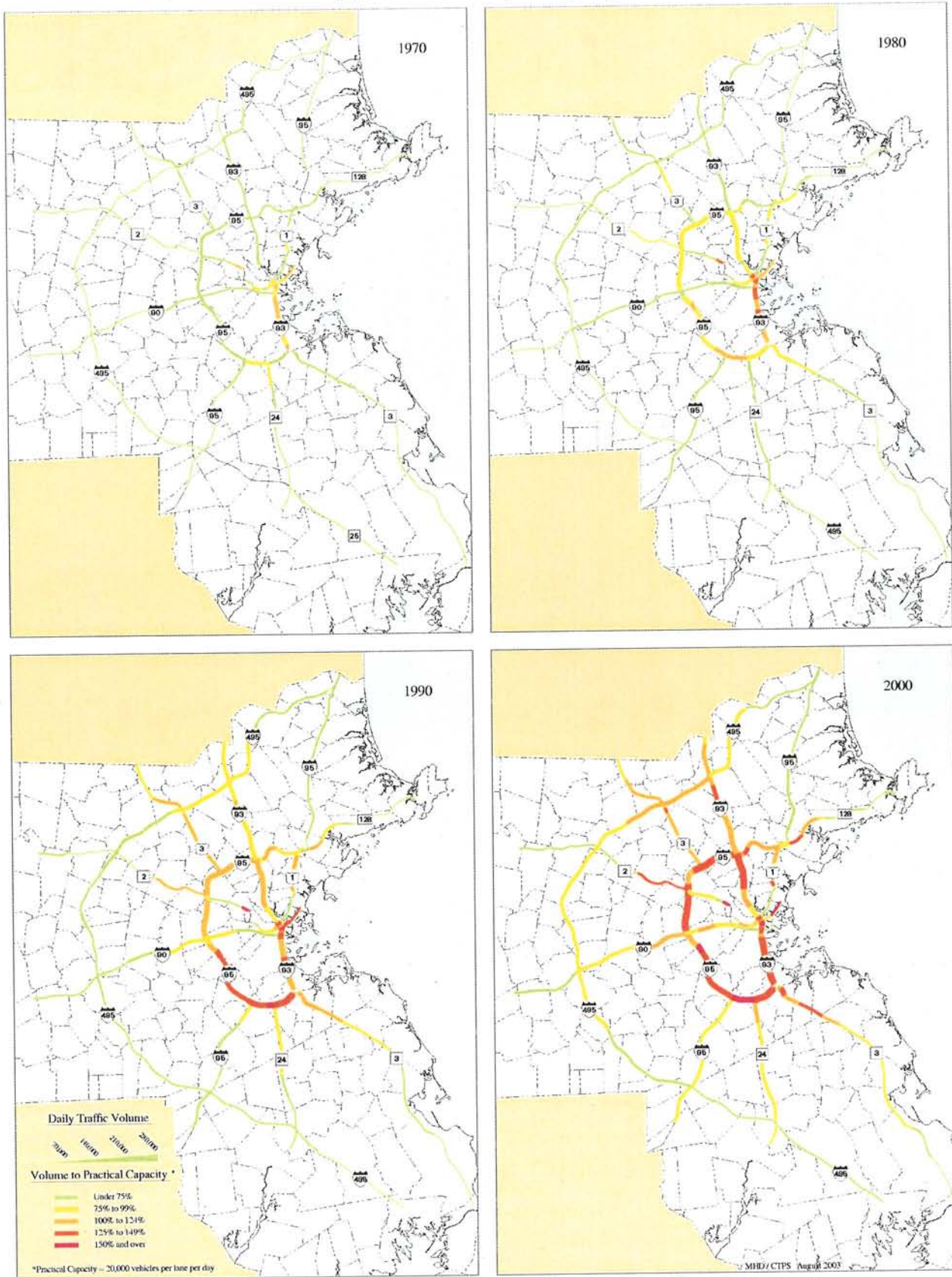


FIGURE 10
Volume-to-Capacity Ratios and Daily Traffic Volumes on Boston Area Expressways, 1970 to 2000
 (For 2005 V/C ratios, see Figure)



Note: In actual traffic operations, V/C ratios do not exceed 100%. These maps show approximate severity levels of congestion that occur when estimated demand (volume) exceeds available supply (capacity).

FIGURE 11
2005 Estimated Volume-to-Capacity Ratios on Major Roads in Massachusetts
 (For 1970-2000 V/C ratios, see Figure)

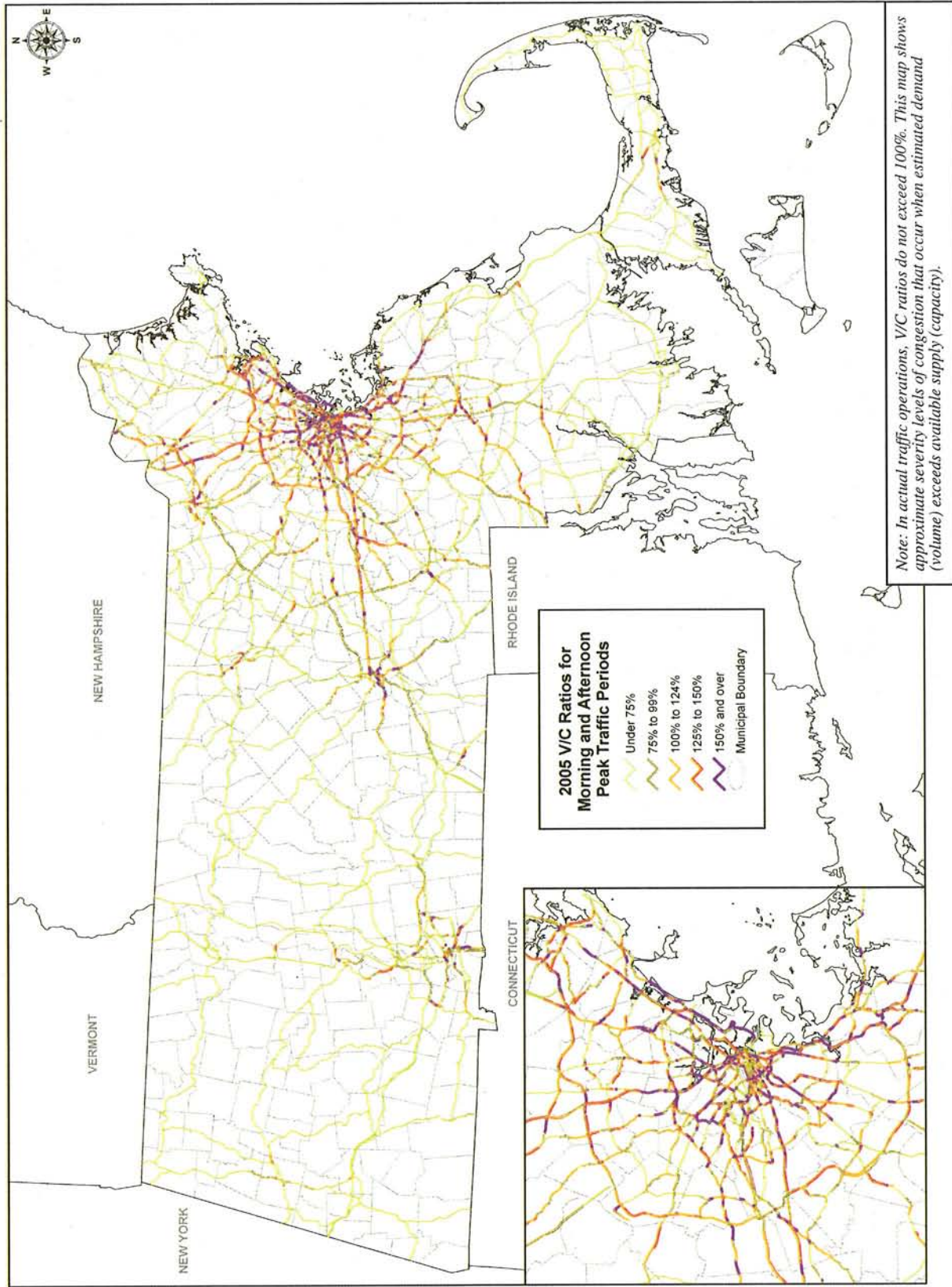


FIGURE 12
Lane Departure Crashes
on Numbered Routes
Summed by Half-Mile Sections
1996-2001

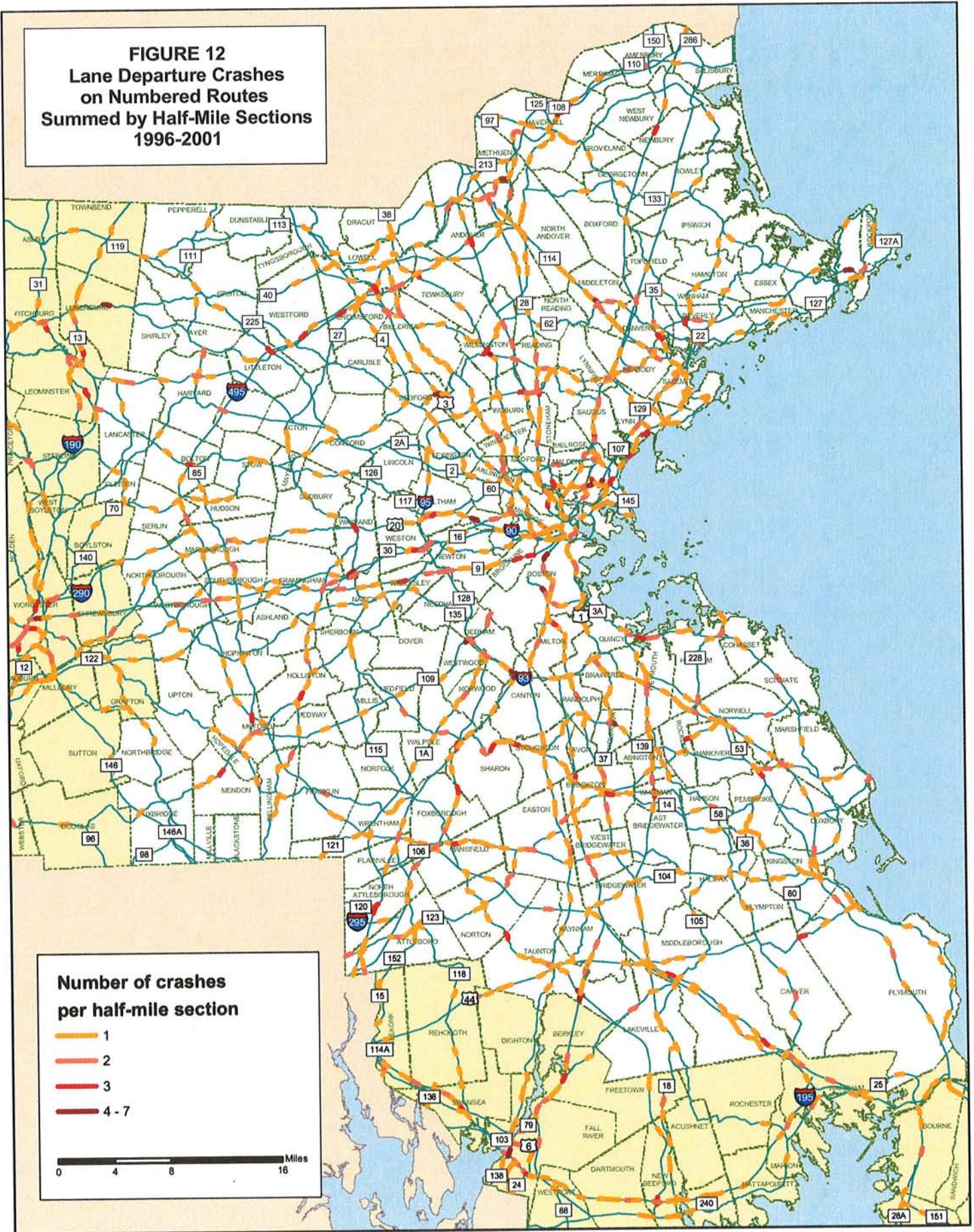
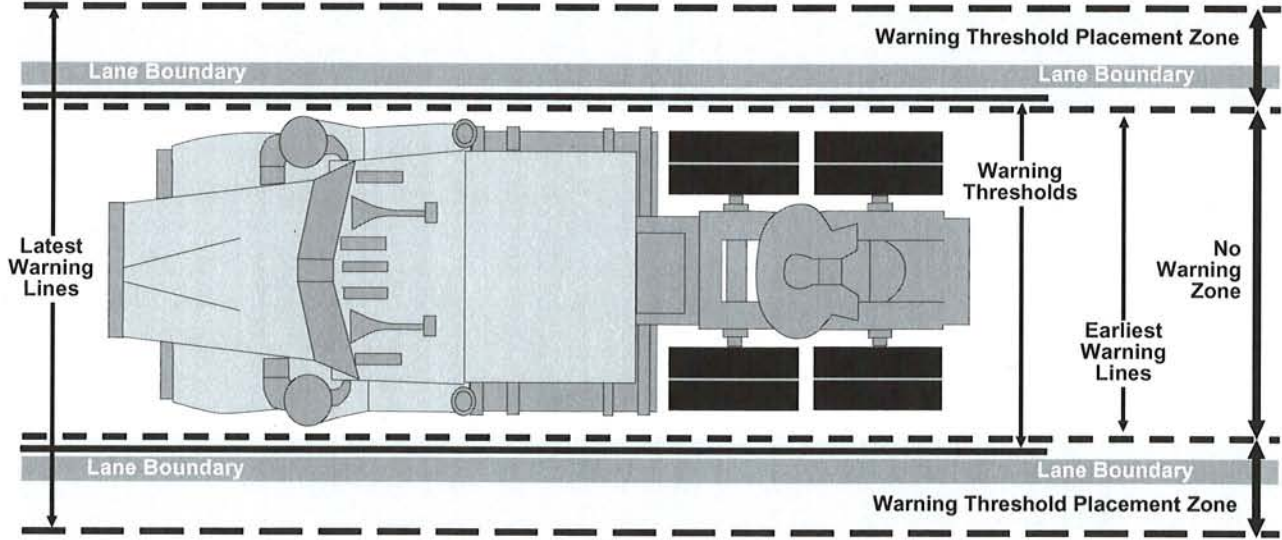


FIGURE 13
LDWS* Warning Thresholds and Warning Threshold Placement Zones
*Lane-Departure Warning System



4 Maritime Freight

The three sections of this chapter address port facilities (including cargo handled), port logistics, and issues perceived by stakeholders and possibly within the purview of the MPO.

PORT FACILITIES

Overview

Massachusetts has nine commercial ports for the import and export of freight. Three of these are located in the MPO area: the Ports of Boston, Salem, and Gloucester. The six other commercial ports are located in Fall River, Fairhaven/New Bedford, Woods Hole, Vineyard Haven, Hyannis, and Nantucket. See Figure 14. (In this report, each chapter's *full-page* figures and tables are at the end of the chapter.)

The Port of Quincy, also shown in the figure, is for the exclusive use of its owner, the Massachusetts Water Resources Authority. It is not a common-user facility like Conley Terminal. A common-user facility is a publicly operated commercial port or terminal that may be used by multiple shipping lines or users upon payment of a tariff or user fee to the operator.

The Port of Boston (*owned and operated by the Massport*)

Figure 15 depicts the Port of Boston and briefly describes the Port's major components.

History

The Port of Boston is the oldest continually active major port in the Western Hemisphere. It became an international cargo port in 1630 and remains today the commonwealth's major gateway for international shipping. The Port was transformed beginning in 1956 when the locally controlled port commission was replaced by the autonomous, self-supported Massachusetts Port Authority (Massport). At that time Massport began buying up and rehabilitating abandoned and deteriorating property, updating rail and road links, and preparing the port for changes in the world shipping industry.

A very important change came about when Sea-Land, a private ocean carrier, pioneered the use of shipping "containers" in the trans-Atlantic trade. Shipping containers are standardized 20- or 40-foot-long boxes that can be mounted on a truck chassis or stacked up to eight high in the holds of ships. Massport's Castle Island Container Terminal, one of the first container terminals in the country, was constructed and leased to Sea-Land.

In 1971, a second container terminal was built by Massport in Charlestown as a common-user facility. A common-user facility is typically owned by a governmental entity and operated on a for-hire, for-fee basis, similarly to the way a common carrier operates, for the benefit of the general public. In 1980, Sea-Land gave up its lease at Castle Island, and Massport built a new, larger, common-user facility on the site. That facility became Conley Terminal.

Cargo at the Port of Boston

The Port of Boston handles annually more than 1.3 million tons of general cargo, 1.5 million tons of non-fuel bulk cargo (salt, gypsum, cement, automobiles), and 12.8 million tons of bulk fuel cargos (petroleum and liquefied natural gas).

The top ten import commodities (by weight) that passed through the Port of Boston from April 2004 through March 2005 were:

- Beer & Wine – 17%
- Furniture – 10%
- Fish & Shellfish – 9%
- Footwear – 8%
- Toys – 3%
- Plastic Products – 3%
- General Cargo – 2%
- Paper and Paper-Board (including waste) – 2%
- Pottery & Ceramics – 2%
- Non-Alcoholic Beverages – 2%
- (Other – 42%)

The top ten export commodities (by weight) that passed through the Port of Boston during that same period were:

- Paper and Paperboard (including waste) – 38%
- Mixed Metal Scrap – 7%
- Automobiles – 6%
- Hides, Skins, Furs – 6%
- Fish, Shellfish – 5%
- Logs & Lumber – 4%
- Household Goods – 3%
- General Cargo – 3%
- Medical Equipment & Supplies – 2%
- Fabrics, Including Raw Cotton – 1%
- (Other – 18%)

Terminals and Other Facilities

Conley Terminal

The Paul W. Conley Container Terminal is a 101-acre, multiberth terminal. It has 2,000 feet of berthing space, with 1,100 feet dredged to a depth of 45 feet and 900 feet dredged to a depth of 40 feet. Dredging was completed in Boston Harbor to allow for these depths in the late 1990s. The facility has four post-Panamax-sized (see Port Logistics section, below) gantry cranes (for ships too big to traverse the currently configured Panama Canal) for loading and unloading container vessels. The roadway gates are open Monday through Friday from 7:00 AM, with the last truck allowed in for pickup at 4:15 PM. Ships can dock seven days a week, 24 hours a day.

All cargo is unloaded onto trucks, which take First Street, L Street/Summer Street, D Street, and Congress Street to access a dedicated road, the South Boston Haul Road, on which they can proceed to Interstate 93 and Interstate 90. Over 80 trucking firms offer ocean-container trucking through the Port of Boston. These firms are part of the average 900 to 1,000 daily truck moves in and out of Conley Terminal.

Currently there is no rail service directly into or out of Conley Terminal. For rail connections, trucks take the haul road to Interstate 90 and proceed to rail transfer facilities such as the one at Beacon Park Yards in Allston, four miles from Conley Terminal. Freight moved to Beacon Park Yards by truck costs approximately \$125 to \$150 per container.

Massport is investing \$25 million in Conley Terminal to increase its capacity. Officials expect to attain 50%-higher capacity by accommodating higher and wider stacks of containers. Currently the stacks are three high; the improvements will allow for stacks that are five high.

Moran Terminal

In 1998, Moran Terminal and Mystic Pier One in Charlestown were converted and leased to the Boston Auto Port. The facility, 65 acres in size, is used for the importing and processing of automobiles. Currently the automobiles are transported by truck auto-carriers that access the terminal along Medford Street to Sullivan Square or along Medford Street to Chelsea Street to City Square.

Moran Terminal has the potential for rail service over the Mystic Wharf Branch, a 1.45-mile track in Charlestown. Massport purchased this rail line from Boston and Maine/Pan Am Railways (formerly Guilford Rail System) in 2002 to preserve rail access to the port. However, in June 2005, the Surface Transportation Board (STB) granted a Discontinuation of Service Exemption to Pan Am Railways, allowing it to discontinue service over this branch. Pan Am was not granted the authority to abandon its obligations under the exemption. This branch should be considered "inactive" rather than "abandoned."

Recently, Massport completed a feasibility study for rail access and a truck haul road along the Mystic Wharf Branch corridor. A report on the study, entitled *Charlestown Haul Road/Rail Corridor Feasibility Study*, was prepared for Massport by Rizzo Associates and published in July 2005. Massport has a strong interest in improving existing access and preserving future access to this area for both rail and truck. If Massport were to move forward with a haul road/rail corridor concept, a number of additional steps would be required before a preferred alternative could be selected and designed. It would also have to coordinate with potential plans for highway improvements for Rutherford Avenue and Sullivan Square, along with acquiring the federal, state, and local permits required to proceed.

Massport Marine Terminal/North Jetty

The Massport Marine Terminal is located on the waterfront in the Marine Industrial Park in South Boston (site of the former South Boston Army Base). The site offers 800 feet of berthing space at a 40-foot depth on the North Jetty. Approximately 10 acres of the site is dedicated to modern seafood processing or related facilities that support the fishing industry.

The Central Artery/Tunnel (CA/T) Project used most of the remaining 30 acres for construction staging. With the completion of the CA/T project, Massport recently awarded the bid for the development of the North Jetty area. The redevelopment will allow for the handling of bulk and conventional cargo and for refrigerated warehousing. Specifically, the plan is to create a trans-load facility that can handle seafood, cement, and break-bulk (non-containerized and piece-handled cargo) and that includes a fumigation facility (using ethyl bromide) for flowers and lumber. Currently, the nearest fumigation facility is at the Port of New York, which is where most flowers and lumber are now transported.

This site has access via designated truck routes and the interstate highway system. There is also a potential rail connection. There are two overweight-truck routes: trucks of up to 99,000 pounds are allowed along Drydock Avenue to the Fargo Street Extension to E Street to Summer Street and onto the Haul Road, then either to Route 1A to Route 128 to Gloucester or to Interstate 93 to Route 24 to New Bedford. These routes were designated primarily for the use of the seafood business.

The area's potential rail connection is over the Boston Terminal Running Track, also known as Track 61. This track was temporarily taken out of service during the CA/T construction but will be restored as part of the project's restoration of the area. The company that has been awarded the bid for the North Jetty development hopes that Massport will construct the piece of rail line needed to access the water's edge just south of the Ted Williams Tunnel.

East Boston

The East Boston Shipyard and Marina on Marginal Street is the only ship repair facility in Boston Harbor equipped to serve midsized commercial vessels.

Charlestown

- *Mystic Piers*
The Mystic Piers are a waterfront terminal 3.5 acres in size located just east of the Tobin Bridge. The terminal, consisting of three berths totaling 2,053 feet in length, primarily serves break bulk cargo. At this time, the site is used to import, store, and distribute salt.
- *Medford Street Terminal*
These 14 acres were bought by Massport to ensure the area would remain available for marine cargo use.

Other Maritime Properties in the MPO Area (*these properties are not owned or operated by Massport*)

South Boston

Boston Fish Pier

Located on Northern Avenue, this is the oldest working fish pier in the country. It serves the commercial fishing industry in the Boston Harbor area.

International Cargo Port

This facility is located on Black Falcon Avenue, adjacent to the Black Falcon Cruise Terminal, in the Boston Marine Industrial Park (BMIP) in South Boston. It houses various companies and organizations involved in international trade and commerce, including the U.S. Customs Document Analysis Unit.

Fargo Street Terminal

This facility consists of 15 acres of flat paved land and has been used for various maritime-based industrial purposes, such as vehicle storage and similar activities, in support of operations at Conley Terminal and the Black Falcon Cruise Terminal.

Port of Salem

The Port of Salem is owned and operated by the New England Power Company. It has a deep channel and associated landside industrial facilities, including a coal- and oil-fired power plant and an oil storage facility. The Salem Terminal Wharf is operated by the New England Power Company and has one 800-foot berth. The facilities are served by 35-foot-draft tankers and 38-foot-draft coal ships. More than one million tons of coal and three million barrels of oil are delivered annually. The wharf has a storage capacity of 100,000 tons bulk and one million barrels of oil.

Landside access to the port is by truck, with Route 128/Interstate 95 three miles away. Existing rail is one mile from the port. Future plans at the port include expansion of the existing ship basin and construction of a second 600-foot pier and cruise terminal.

Port of Gloucester

The Port of Gloucester is owned by the Commonwealth of Massachusetts and operated by Elliot Shipping, Inc. It is an import/export point for Canadian and European ports of call. It has a direct connection to Route 128/Interstate 95 and is located one mile from a rail siding. Gloucester has developed into a major import center for frozen seafood products and currently maintains the largest cold storage port facilities of any U.S. port. Gloucester also offers a new container-handling facility and a variety of vessel services.

The port concentrates on providing service for small vessel owners. The harbor has two 300-foot vessel berths, one 600-foot berth, and one 800-foot berth. A depth of 20-24 feet is available at low tide, and vessels of up to 300 feet can be accommodated. Ship cargoes are loaded and discharged seven days a week, 24 hours a day.

Efforts are underway to revitalize the use of Gloucester's seaport and harbor and diversify importing and exporting. Funds are being allocated for dredging the harbor to 26 feet and renovating the Gloucester State Pier to increase the number of berths and expand the harbor's capabilities.

Major Ports Outside of the Boston Region MPO Area

Port of Fall River

The Port of Fall River is owned by the City of Fall River and the Commonwealth of Massachusetts and is operated by Fall River Line Pier, Inc. The second-busiest commercial port in Massachusetts, after the Port of Boston, it is located on the Taunton River, approximately 17 miles northeast of where the river meets the Atlantic Ocean. It is a 10-acre facility with two deep-water berths and a 96,000-square-foot storage terminal. The port specializes in break-bulk cargoes and handles linerboard, lumber, paper products, frozen fish, and chemicals.

The facility includes a roll-on/roll-off ramp for loading and unloading loaded containers mounted on tractor-trailer chassis from ships. Rail connections to the port include three rail spurs that run the length of the terminal and connect to a line in Taunton. The line and rail spurs, both part of the CSX system, allow freight to travel from the port to all of southern New England and to inland points.

Connections to major highways are made through an Interstate 195 interchange that is less than one mile from the port. This connects to Massachusetts State Route 24, less than three miles away, and then to Interstate 95, approximately 17 miles away.

Port of New Bedford

The Port of New Bedford is owned by the City of New Bedford and the Commonwealth of Massachusetts and operated by the New Bedford Harbor Development Commission (HDC) through Maritime International, Inc. It is located on the Acushnet River

approximately three miles north of Buzzards Bay. Since the early 1960s, it has been one of the area's largest handlers of perishable goods, including fruit, vegetables, and bulk commodities of frozen fish and meat products. It has various vessel berths and is able to accommodate the largest refrigerated vessels afloat. The main cargo facility is the 6.5-acre State Pier, with approximately 140,000 square feet of enclosed storage space.

The Port of New Bedford has roadway connections linking up to Interstate 195. The north side of the harbor is being dredged and was classified as a superfund site by EPA. A mechanism for transporting the dredged material was needed, so a rail siding (or spur) was built; it was constructed in such a way that it can be used in the future as part of a more permanent facility.

PORT LOGISTICS

Primary Shipping Routes

There are two major ocean routes for the delivery of freight by ship to the East Coast of the United States, one from Europe and the other from Asia. The European route is long established. Although it is faster (generally by one day) to ship into Boston than into the Port of New York/New Jersey or the Port of Norfolk, Virginia, most of the freight goes through the latter ports. The Port of New York/New Jersey gets the most business because it can offer five to six different intermodal services for delivery throughout the United States.

The Port of Boston has no direct rail service. It is indirectly served by rail service provided by CSX at Beacon Park Yards in Allston and the Port of Worcester. Rail service is also available in Ayer, Massachusetts, provided by Pan Am Railways (formerly Guilford Rail System). Double-stack rail into the Port is not a priority at this time. Currently, the Port of Boston is not losing business due to the lack of double-stack rail. Massport would first like to have single-stack rail service to the Port area. Business into the Port would have to increase before double-stack would become a major issue. Massport would like to see the condition of the bridges along the rail lines assessed. This assessment would determine how many of these bridges would allow double-stack trains, what repairs would be necessary in order to allow double-stack trains, the costs of those repairs, and the feasibility of establishing regular rail freight service into the Port.

Trucks do not have direct access from the Port of Boston to a haul road or to the expressway system. They use designated truck routes to access the haul road, which links to expressways.

Recently, Massport completed a feasibility study for rail access and a truck haul road along the Mystic Wharf Branch corridor. *Charlestown Haul Road/Rail Corridor Feasibility Study*, prepared for Massport by Rizzo Associates and published in July 2005, reports on the study. Massport has a strong interest in improving existing access and preserving future access to this area for both rail and truck. If Massport were to move

forward with a haul road/rail corridor concept, a number of additional steps would be required before a preferred alternative could be selected and designed. Massport would also have to coordinate with potential plans for highway improvements for Rutherford Avenue and Sullivan Square, along with acquiring the federal, state, and local permits required to proceed.

Service from Asia generally goes through the Panama Canal and would arrive in the Port of New York/New Jersey before Boston. Therefore, the Port of New York/New Jersey receives the majority of the business from Asia, with the remainder coming primarily to the Port of Boston.

Requirements of Larger Ships

Shipping agents are beginning to build larger ships for transporting international freight. This will change the shipping business along the East Coast. The new ships are called Post-Panamax ships, because they are too large to pass through the Panama Canal.

The newer ships can hold more containers. Most containers are either 20 or 40 feet long, so the term TEU or twenty-foot equivalent unit is used to determine the capacity of a ship. Most ships now carry about 4,000 to 5,000 TEU. The Post-Panamax ships are being built to handle 8,000 to 10,000 TEU. They cost more to build, but once built, the labor and operations costs are the same. From the shipper's perspective, once the initial construction costs are borne, more freight can be carried at the same cost.

The Post-Panamax ships are presenting a challenge to the ports. The ports must have larger cranes to unload and load the ships: the ships not longer but are wider, so that cranes must reach further across. Deeper channels are also required to accommodate the ships, and more labor to load and unload the freight. The West Coast ports are beginning to be overwhelmed by these ships. They are creating bottlenecks at the ports: their demands are also greater in terms of berth time and trucks to transport the freight. It takes approximately 3 years to build one of these bigger ships; however, it takes from 5 to 10 years to change port conditions to be able to handle them. These ships will begin arriving at the East Coast ports sometime between 2007 and 2011.

The Port of New York/New Jersey is currently dredging its channels to a 45-foot depth and once that is completed hopes to dredge to 50 feet to accommodate the larger ships. These ships can probably get by with the 45-foot depth, but a 50-foot depth would serve them better. The dredging to 50 feet is at least three to four years away. New York/New Jersey is investing in the required larger cranes but will have the same amount of labor and land to store the freight.

As the larger East Coast ports become ready for them, the Post-Panamax ships will begin using these ports. If the same bottlenecks occur at such East Coast ports as are currently occurring on the West Coast, the shippers with smaller ships will most likely begin calling on the other East Coast ports. In this case, unless Boston has at such a point in time readied itself for and begun receiving the Post-Panamax ships, its shipping business

will probably increase, with the ships that are being displaced (4,000 to 5,000 TEU) using it. Mediterranean ports are one of the origins from which more ships may come into Boston under this scenario.

Nevertheless, one of the most important issues for the Port of Boston is dredging its channels deeper. The channel into the Port is currently dredged to 35 to 40 feet at low tide, with 45 feet at the berth. This dredging was completed in the late 1990s. Currently, Massport has a permit request in to the Army Corps of Engineers to dredge the channel to 45 feet. It will probably take until about the year 2010 to obtain the necessary permits and funding for this additional dredging.

The Ports of New Bedford and Gloucester both also have dredging in their future plans. The channel in New Bedford is currently dredged to a depth of 28 feet, the channel in Gloucester to 24 feet.

“Float Bridges” and Roll-On/Roll-Off

New England Transrail (NET), a Teaneck, New Jersey, limited liability corporation doing business in the Boston Region MPO area as the Wilmington and Woburn Terminal Railroad Company (see Endnote 3) is planning to operate “float bridges” (ferry for rail) out of the Newark area. Norfolk Southern and CSX operate out of Elizabeth, New Jersey. Goods that would be moved include dense, low-value items that are not time sensitive. The bulk freight that is moved by these railroads includes steel, chloride, road salt, paper, corn syrup, and soda ash.

The Port of Newark, New Jersey, is building a roll-on/roll-off terminal facility. In roll-on/roll-off shipping, goods carried via barge are in a trailer or container that is on a chassis with wheels and tires. The truck driver hooks his cab or tractor onto the chassis and drives it on or off the barge. The Port of Newark will send the barges north via the Atlantic Ocean, an example of short-sea shipping or coastal barging, for eventual delivery to New England via either a facility in Quonset Point or Providence, Rhode Island, or New Bedford, Massachusetts, none of which are in the MPO area.

The Seaport Bond Bill

The Seaport Bond Bill is an approximately \$300 million authorization bill passed in 1996 by the Commonwealth and managed by the Executive Office of Environmental Affairs. This bill authorizes approximately \$100 million in funding for improvements in each of three different areas: dredging, coastal improvements, and rail. To date, about \$60 million has been spent on various port improvement projects, including ones performed to support the fishing industry. Since Massport has its own bonding capacity and maintains the Port of Boston, the funding through this bond bill has primarily gone to development and improvement work at the other ports in Massachusetts. Funding for the *Charlestown Haul Road/Rail Corridor Feasibility Study* was, however, provided through the Seaport Bond Bill.

ISSUES PERCEIVED BY MARITIME-FREIGHT STAKEHOLDERS AND POSSIBLY IN THE MPO'S PURVIEW

The following descriptions of issues perceived by stakeholders and possibly in the MPO's purview are based on interviews with individuals affiliated with owners and operators of freight transportation facilities and services and with users of freight transportation. Issues perceived by stakeholders but outside the MPO's purview are listed in chapter 8. The following are descriptions of the views of the individuals interviewed (all interviewees for this study are listed in Appendix 1). Some related data are also provided where deemed useful.

"The Last Mile" of Roadway Access

The Ports of Boston, Salem, and Gloucester suffer from difficulty in getting freight from the docks to their local highway system over "the last mile," which in most cases consists of local or residential streets. Access to the highways from the Port of Boston has improved with the opening of the Central Artery/Ted Williams Tunnel, but it could be further improved. Although two separate overweight-truck routes have been designated, mostly to accommodate the seafood business, there is a need for additional overweight-truck routes in the area.

Rail Service to Port Facilities

Currently there is no rail freight service to the Port of Boston, though railroad tracks exist. "Track 61," directly linked to the Port area, is temporarily out of service due to Central Artery construction. This track will be restored as part of the completion of Artery construction. Representatives of the company awarded the bid for the North Jetty development hope that a rail spur will be constructed from the existing Track 61 to the water's edge for transport of freight.

Massport is conducting informal talks regarding an alternative rail bridge across the Reserve Channel to access Conley Terminal. Coastal Properties and the MBTA own property along First Street in South Boston, which runs to the southwest of Conley Terminal. Depending on the siting of any proposed rail bridge, this property could be affected by having all or a portion of the bridge and/or any of its access roads constructed on it.

Generally speaking, freight rail access to the Port would be either: (1) from the west, on the CSX mainline in Framingham, along the Massachusetts Turnpike, under the Prudential Tunnel through South Station and into the Port; or (2) from the CSX mainline in Framingham, southeast to Walpole, then north through Readville. Prohibition of the transport of hazardous materials through a tunnel structure would restrict some freight use of the Prudential Tunnel route.

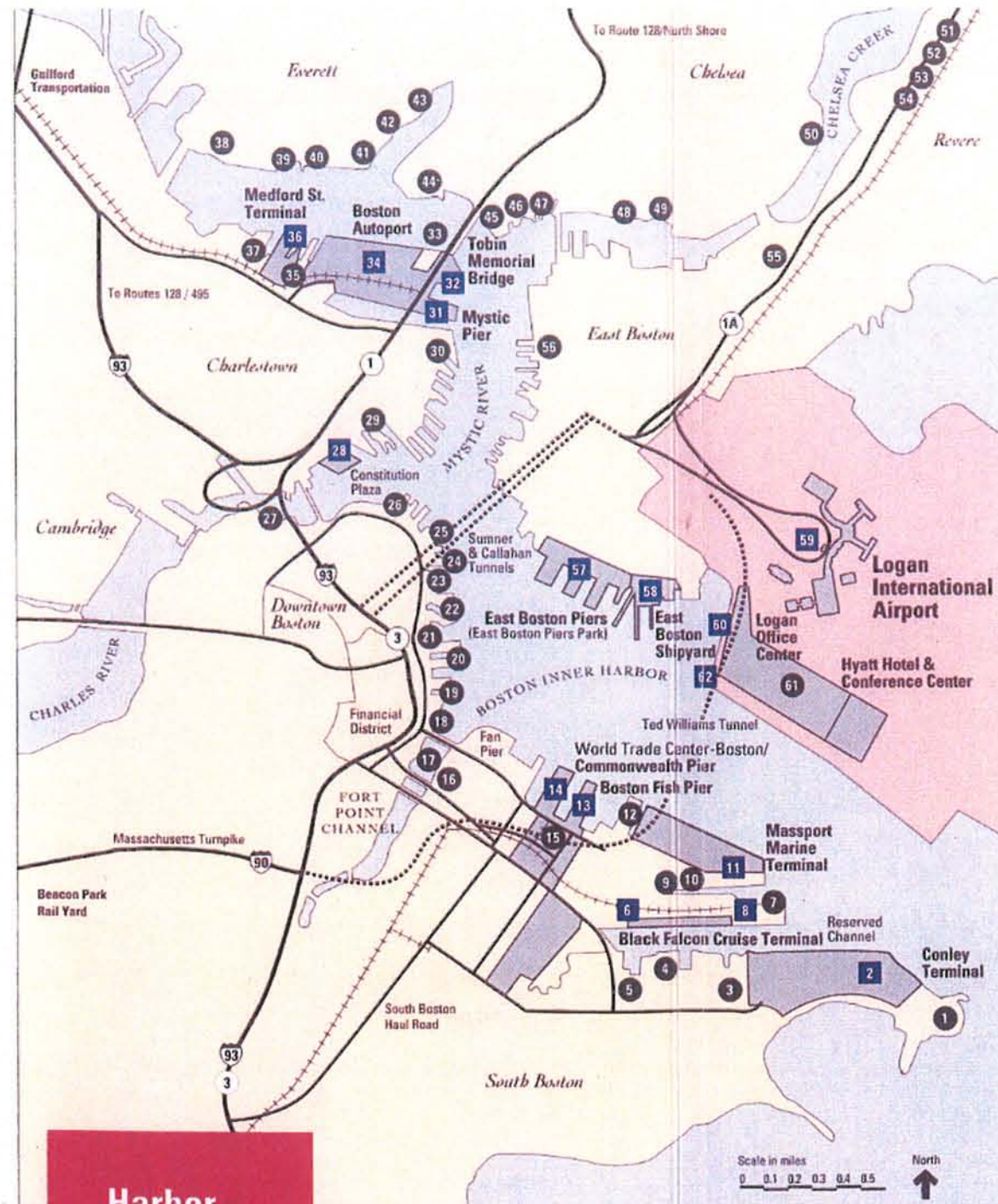
Dredging

The channel into the Port of Boston is currently dredged to a depth of 40 feet but needs to be at least 45 feet deep in order to accommodate ships of deeper draft, such as those currently servicing the Ports of New York and New Jersey. Massport is pursuing a permit for this dredging.

FIGURE 14
Massachusetts Seaports



FIGURE 15
Port of Boston



Harbor Reference Guide

- Massport Properties
- Non-Massport Properties

Source: Massachusetts Port Authority

South Boston Waterfront

- 1 Fort Independence, at Castle Island, is the eighth fort built at this site since 1634 to protect Boston Harbor.
- 2 Conley Terminal is a 101-acre container terminal equipped with four post-Panamax cranes, and 4,450 feet of berthing including 1,050 feet at 45 feet deep and 900 feet at 40 feet deep. It is the first port of call inbound and last port outbound for vessels serving the North Atlantic and handles over 150,000 TEUs annually with the capacity to expand to meet New England's future cargo needs.
- 3 Coastal Oil South Boston
- 4 MBTA Power Plant and Cardinal Medeiros Lobster Terminal
- 5 Sithe New England Power Plant
- 6 The Black Falcon Cruise Terminal handles more than 100,000 passengers and 80 ocean-going cruise vessels annually.
- 7 Coastal Cement Terminal
- 8 International Cargo Port a state-of-the-art intermodal freight distribution facility. The adjacent 35-foot-deep berths provide docking for deep-draft vessels.

- 9 Boston Marine Industrial Park is the location of numerous businesses such as seafood processing, warehousing, and ship repair as well as the Boston Design Center.
- 10 Drydock #3 is one of the largest on the East Coast, 1200 feet long and over 40 feet deep. Has handled such vessels as the QEII, USS Massachusetts, and other commercial and military ships.
- 11 North Jetty/Massport Marine Terminal is currently used as a staging area for the Central Artery Project. The 900-foot berth is 40 feet deep and is also used for seafood processing, and break bulk and dry bulk cargo.
- 12 South Boston Drydock #4
- 13 Boston Fish Pier, the oldest working fish pier in the U.S., opened in 1914. Massport has invested over \$30 million to modernize the pier. Also located here is the Exchange Conference Center, a state-of-the-art meeting and conference space.
- 14 World Trade Center Boston, formerly Commonwealth Pier Number 5, has been redeveloped to provide one million square feet of office and exhibition space, a conference center, and docking facilities.

- 15 Seaport Hotel, with 427 rooms, exhibition space, and meeting facilities.
- 16 Museum Wharf (Children's Museum, Computer Museum)

- Downtown Waterfront**
- 17 Boston Tea Party Ship and Museum
 - 18 Rowes Wharf/Boston Harbor Hotel (Airport Water Shuttle and commuter boats)
 - 19 India Wharf (Harbor Towers)

- 20 Central Wharf (New England Aquarium)
 - 21 Long Wharf/Marriott Long Wharf (Harbor Express and Boston Harbor Cruises)
 - 22 Commercial Wharf (residential)
 - 23 Lewis Wharf (residential)
 - 24 Lincoln Wharf (residential)
 - 25 Battery (Constitution) Wharf (commercial)
 - 26 U.S. Coast Guard Support Center
- Charlestown Waterfront**
- 27 Paul Revere Park (MDC)
 - 28 Constitution Plaza and Constitution Marina (formerly Hoosac Pier) is an office, restaurant and marina facility developed by Massport with public access to the waterfront.
 - 29 USS Constitution and National Park
 - 30 Charlestown Navy Yard (residential and commercial)
 - 31 Mystic Pier #1 features 256,000 square feet of covered space for the processing and storage of automobiles at Boston Autoport.
 - 32 Mystic Pier #48 Salt Terminal
 - 33 U.S. Gypsum, a wallboard manufacturing plant
 - 34 Boston Autoport (Moran Terminal), international vehicle distribution center with on-dock rail and highway access and 40-foot-deep berth.

- 35 Blue Circle Cement Terminal
 - 36 Medford Street Terminal is an 18-acre deep-water facility appropriate for handling non-containerized cargo.
 - 37 Charlestown Marine Park
- Everett Waterfront**
- 38 Sithe New England Power Plant
 - 39 Proliferized New England Scrap Terminal
 - 40 Distrigas Liquefied Natural Gas Terminal
 - 41 Exxon Oil Terminal
 - 42 Independent Cement Corporation Terminal
 - 43 Coldwater Seafood Terminal
- Chelsea Waterfront**
- 44 Admiral's Hill Condominiums/Marina (residential)
 - 45 Atlantic Fuels
 - 46 Fitzgerald Ship Repair
 - 47 Eastern Minerals Terminal
 - 48 Coastal Oil New England, Inc.
 - 49 Walton Pier (inactive)
 - 50 Gulf Oil Terminal
- Revere Waterfront**
- 51 Coastal Oil Terminal
 - 52 Northeast Petroleum Terminal (inactive)

- 53 BP Oil Terminal
 - 54 Global Petroleum Terminal
- East Boston Waterfront**
- 55 Mobil Oil Terminal
 - 56 Boston Towing & Transportation/North Terminal
 - 57 East Boston Piers, site of Piers Park, a public open space on the waterfront with picnic and recreation areas. Pier #1 consists of berthing, office, and storage space.
 - 58 East Boston Shipyard multi-use marine facility featuring break bulk cargo operations, industrial and commercial moorage and boat building
 - 59 Logan International Airport, 17th busiest airport in the U.S., handles 25 million passengers and 800 million pounds of cargo. Logan is currently undergoing a \$1.6 billion renovation program to update terminals, improve traffic circulation, centralize parking and add a 50,000 square foot cargo facility.
 - 60 Logan Office Center, located on Bird Island Flats
 - 61 Hyatt Hotel & Conference Center
 - 62 Logan Passenger Water Transportation Terminal with services to points throughout Boston Harbor

5 Rail Freight

After providing an overview of the types and volumes of freight carried by rail in the MPO region, this chapter inventories the rail facilities and operators pertinent to freight transportation in the region and describes the rail freight issues perceived by stakeholders and possibly within the purview of the MPO.

The section on facilities and operators includes a subsection that describes facilities' capabilities of accommodating double-stack trains and provides background information on past and possible future events pertaining to this.

FREIGHT CARRIED: AN OVERVIEW

Rail carload service is slower than truck transportation and is generally used for highest-weight, lowest-value, and least-time-sensitive cargo. However, rail intermodal service is competitive in terms of both time and money with trucks over longer distances. The general rule is that moving goods less than 200 miles on rail is not efficient.

Measured in tons per mile, 40% of all freight nationwide is moved by rail, with the remaining 60% being moved by truck. Though a railroad car can carry 3.5 times as much freight as a truck, in Massachusetts trucks are moving approximately 94% of all freight.

The rail network located within the commonwealth represents about 25% of the entire network in New England and carries more than 40% of all rail freight moving through New England. The rail lines running inside the commonwealth's borders carry twice the freight traffic (in terms of total tons carried, total carloads moved, and total carloads/mile) of all the other New England states combined, while at the same time supporting passenger service operations.

According to the Association of American Railroads (AAR), in the year 2004, Massachusetts railroads carried approximately 20.1 million tons of freight in 486,159 carloads. Approximately 9.8 tons was carried into Massachusetts from other destinations, 2.9 tons originating in Massachusetts was carried to other destinations, and 7.4 million tons was carried through or within the state.

Rail freight destined for Massachusetts includes automobiles, chemicals, nonmetallic minerals, food products, and mixed freight/general merchandise. Freight originating in Massachusetts includes chemicals, waste, scrap, paper products, and other commodities that are not defined. Waste and scrap represents about 25% of all freight originating in Massachusetts and includes a large amount of municipal waste being shipped out of state for disposal. How Massachusetts compares to the rest of the nation, in terms of tons of rail freight carried, is graphically illustrated in Figure 18. (In this report, each chapter's *full-page* figures and tables are at the end of the chapter.)

RAIL FACILITIES AND OPERATORS

Ten rail freight carriers operate service on 1,175 miles of active rail lines in Massachusetts. Of these miles, 478 are shared-use, supporting both freight and passenger service.

The Boston Region MPO area has four private freight owners/operators: CSX, Pan Am Railways, Bay Colony Railroad, and Fore River Transportation Company. Of these, only CSX and Pan Am Railways own rail miles in active use in the commonwealth: 275 and 216 miles respectively. Of CSX's miles, 160 are shared-use.

Public rail owners/operators in the area include the Massachusetts Bay Transportation Authority (MBTA), Executive Office of Transportation (EOT), Massachusetts Turnpike Authority (MassPike), Massachusetts Water Resources Authority/Fore River (MWRA), and Amtrak. The MBTA owns 358 active rail miles and provides passenger service on 372 rail miles in the commonwealth, 251 of which are shared-use. Five of the 107 EOT-owned rail miles support shared use, as do all of MassPike's 10 miles and Amtrak's 10 miles.

Figure 16 shows rail ownership of active rail lines, and Figure 17 shows freight operators on active rail lines.

Note on intermodal yards and transloading facilities: Intermodal yards are facilities at which commodities, usually in containers or trailers, are transferred from rail to truck for local delivery or from truck to rail for shipment. Transloading facilities are intermediate delivery locations at which freight is transferred from one type of vehicle to another, sometimes in bulk: for example, construction materials (coal, sand, stone, etc.) may be transferred from open-top railcars directly into trucks.

Publicly Owned or Operated Rail Facilities

Massachusetts Bay Transportation Authority (MBTA)

The MBTA owns 358 miles of active rail right-of-way (including the soon-to-be-active Old Colony Greenbush Line) and provides commuter rail service over 372 miles (approximately 25 of these owned by CSX and 10 by the Massachusetts Turnpike Authority). As shown in Figure 16, the majority of this right-of-way is located within the MPO area. Approximately 80% of the MBTA-owned rail network is subject to retained freight rail easements or trackage right agreements. In fact, the private rail company Pan Am Railways (formerly Guilford Rail System) dispatches commuter rail operations for the MBTA's Lowell, Haverhill, and Fitchburg Lines on the outer ends, and CSX dispatches the Framingham/Worcester Line.

A major rail route known as the Shore Line is part of the Northeast Corridor and has high-speed passenger service between New York City and Boston. The MBTA owns the entire segment of the Shore Line located in Massachusetts; that is, between Boston and

the Rhode Island state line. Between Back Bay Station and Readville, near the Boston/Dedham line, the Shore Line is used exclusively for MBTA/Amtrak passenger service. From Readville to the state line, the route is shared by the MBTA, Amtrak, and CSX.

Executive Office of Transportation (EOT)

EOT owns and manages 107 miles of active rail lines and another 53 miles of inactive right-of-way in the Commonwealth. Bay Colony Railroad operates rail freight service over about 60 miles of EOT-owned rights-of-way in the southeastern and Cape Cod areas of Massachusetts. CSX operates rail freight service over 18 miles of EOT-owned rail lines, pursuant to retained freight easements.

EOT has transferred interest in about 30 miles of rail right-of-way to the MBTA for commuter rail service (primarily related to Old Colony service) and has converted or will convert another 50 miles to rail trail use as part of the Commonwealth's rail banking program. The remaining 80 miles of rail properties have been retained for future transportation services or transferred to the Division of Capital Assets Management and Maintenance for sale to municipalities or private parties.

Massachusetts Turnpike Authority (MassPike)

The MassPike owns 10 miles of the Boston-to-Albany main line between Back Bay Station and Newton, east of Route 128. CSX is responsible for maintenance of the right-of-way through this area, while the MassPike responsibilities include fencing and groundskeeping. MassPike owned the Beacon Park Yards property in Allston until May 2003, when it sold the 91-acre parcel to Harvard University. The MassPike does however retain a perpetual easement for the roadway and toll plaza, the MBTA has an easement for commuter rail operations, and CSX retains a perpetual lease of the rail right-of-way and Beacon Park Yards. The agreement allows the university to "use as much of the property as possible for purposes of constructing permanent buildings, parking areas, and rail storage facilities." EOT is currently undertaking a study regarding the transportation functions at Beacon Park Yards and its services to a range of industrial users within and around the metropolitan Boston region.

Massachusetts Water Resources Authority (MWRA)

The MWRA owns the Fore River Railroad, which includes approximately three miles of track and right-of-way in Quincy and Braintree. This railroad was incorporated in 1919 to serve the Quincy Shipyard, but it has been owned by the MWRA since 1987, when the MWRA acquired the Fore River Staging Area. The Fore River Transportation Company has operated the line since 2002 under an agreement with the MWRA.

Amtrak

In addition to the Northeast Corridor service to New York City and Washington, D.C., Amtrak provides intercity passenger rail service between Boston and Chicago, with stops in Framingham, Worcester, Springfield, and Pittsfield; between Springfield and New Haven; and between Boston and Portland, Maine, with stops in Woburn and Haverhill. In Massachusetts, Amtrak operates service along four routes totaling over 305 miles, including 10 miles of right-of-way owned by Amtrak. The majority of Amtrak service in Massachusetts uses rail lines owned and operated by the MBTA and CSX.

Massachusetts Port Authority (Massport)

As discussed in the maritime chapter of this report, Massport owns the Mystic Wharf Branch, a 1.45-mile corridor in Charlestown connecting the Mystic River Port Area to the rail network. Service on this line is currently discontinued. Massport also owns and controls the Boston Terminal Running Track (Track 61), the 1.5-mile track that services the South Boston Port Area. While Track 61 is inactive as a result of the Central Artery/Tunnel Project (CA/T), CA/T is required under their agreement with Massport to restore the line.

Privately Owned or Operated Rail Facilities

CSX Corporation

CSX is the only Class I railroad in Massachusetts. As defined by the Surface Transportation Board, a Class I railroad is a railroad with operating revenues of at least \$289.4 million, in 2004 dollars. CSX operates over a network of 21,000 miles in 23 states, the District of Columbia, and two Canadian provinces; 405 of those miles are within Massachusetts.

CSX's most important rail asset in Massachusetts is its portion of the Boston Main Line, a 192-mile rail corridor that runs between Boston and Selkirk, New York (near Albany). It is the route by which most of the rail freight traffic moving into and out of Massachusetts and New England travels. CSX owns the Boston Main Line from the New York State line to Framingham (see Figure 16), a distance of about 140 miles. As discussed earlier, the MBTA and MassPike have ownership interests from Framingham to South Station (about 22 miles). This route generally parallels the Massachusetts Turnpike, connecting Boston, Worcester, Springfield, and Pittsfield, Massachusetts, with the major rail hub operated by CSX at Selkirk. CSX runs mixed double-stack trains from Selkirk to Worcester.

The Grand Junction Running Track, the rail link connecting the north and south sides of the commuter rail system, is also owned by CSX. The track crosses the Charles River over the Boston University Bridge, between Boston and Cambridge, and then proceeds through Cambridge (crossing Massachusetts Avenue near MIT) and Somerville to the

new Commuter Rail Maintenance Facility formerly known as the Boston Engine Terminal.

As shown in Figure 16, CSX also owns rail lines from Framingham to Leominster and from Framingham to Mansfield, with shorter pieces in southeastern Massachusetts. It also operates over rail owned by EOT in southeastern Massachusetts, as shown in Figure 17. The MBTA operates over 35 miles of CSX-owned right-of-way, including portions of the Boston Main Line, the Grand Junction, and the Framingham Secondary. Amtrak also operates over approximately 145 miles of CSX-owned right-of-way, including the Grand Junction.

CSX has three intermodal yards along the Boston Main Line: Beacon Park Yards in Allston and yards in East Worcester and West Springfield. It has two automobile transfer facilities: one in Framingham and another in East Brookfield. It has 13 interchange/switching facilities, 8 of which are located in the MPO area: in South Boston, Readville, Framingham (3 facilities), Walpole, Braintree, and Middleborough.

In 2002 CSX handled about 250,000 carloads of freight, including approximately 40,000 railcars of automobiles; this represented just under 50% of the total rail freight carried in and through Massachusetts. Approximately 12 trains arrive at Worcester daily, and 8 at Beacon Park Yards. The major types of freight shipped by CSX are intermodal goods, including automobiles and containers carrying general merchandise, municipal waste, chemicals, and transflow freight (which is liquid goods arriving in tank cars and stored in tanks at an intermodal facility; trucks come to the tanks and fill up, as customers need the product).

Pan Am Railways (formerly Guilford Rail System)

Pan Am Railways is the largest Class II railroad in Massachusetts. A Class II railroad is one operating over at least 350 miles or having revenues over \$40 million per year. Pan Am operates over a network of over 1,500 miles of track in all of New England except Rhode Island and in New York. It owns 216 miles of track and operates over 373 miles of right-of-way in Massachusetts.

Pan Am's Freight Main Line is a 475-mile corridor linking Maine, New Hampshire, and northern Massachusetts to major rail hubs in Mechanicville and Rotterdam, New York. This is Pan Am's most important line within Massachusetts. It parallels the Route 2 corridor. On the whole, the Freight Main Line carries less rail traffic than the Boston Main Line, but it is an important rail link for the paper and lumber industry in northern New England and carries intermodal and merchandise traffic to Pan Am's intermodal facility at the Devens Commerce Center in Ayer, Massachusetts. The Freight Main Line is not maintained to the same level as the Boston Main Line, so allowed speeds on this route are significantly lower.

Figure 16 shows the rail lines owned by Pan Am, while Figure 17 shows that it also operates on rail owned by EOT in northeastern Massachusetts. Pan Am operates a train

carrying 30 cars of sand per day, five days per week, 52 weeks per year to Boston Sand and Gravel. Also as discussed in the maritime chapter, it had rights to the tracks into Massport's Moran Terminal along the Mystic Wharf Branch; however, it was granted a Discontinuation of Service Exemption to discontinue service over this line. Pan Am also operates trains to Salem and Lowell for Boston-area customers.

In Ayer, besides its intermodal facility, Pan Am also has an automobile transfer facility. It serves this facility via a line with double-stack clearances from Rotterdam Junction (northwest of Albany, New York). It also has five interchange/switching facilities in Massachusetts, one of which is located in the MPO region, in Salem.

In order to expand its capacity, Pan Am plans to create more passing sidings (aiming to have one every 15–20 miles or so on its Freight Main Line) and add more locations with increased clearances. Lengthening trains is not viable, owing to the number of curves in the rail lines.

The major types of freight shipped by Pan Am are paper and lumber products in Maine, automobiles, coal, and fuel in New Hampshire, and automobiles, general freight, and fuel and coal (to power plants) in Massachusetts.

Bay Colony Railroad

Bay Colony Railroad is a Class III railroad. A Class III railroad is one that engages primarily in line-haul (fixed- or dedicated-route) services with operating characteristics that do not reach the level required for a Class II railroad. Bay Colony operates freight rail service over about 60 miles of EOT-owned right-of-way in southeastern Massachusetts and Cape Cod under a lease and operating agreement with EOT. It also operates over MBTA-owned rights-of-way in Dover, Needham, Medfield, and Millis and has obtained rights to operate over CSX-owned or -operated lines in southeastern Massachusetts through agreements with CSX.

Bay Colony's principal business is the movement of municipal waste. It moves 75%–85% of Cape Cod's municipal waste, running two trains daily from transfer stations in Yarmouth and Falmouth to a waste-to-energy plant in Rochester, Massachusetts. Its operations over the MBTA's Millis Branch include movement of construction materials from GAF Corporation. Bay Colony also moves rock salt from Rochester to Taunton.

Fore River Transportation Company (FRVT; formerly the Quincy Bay Terminal Railroad)

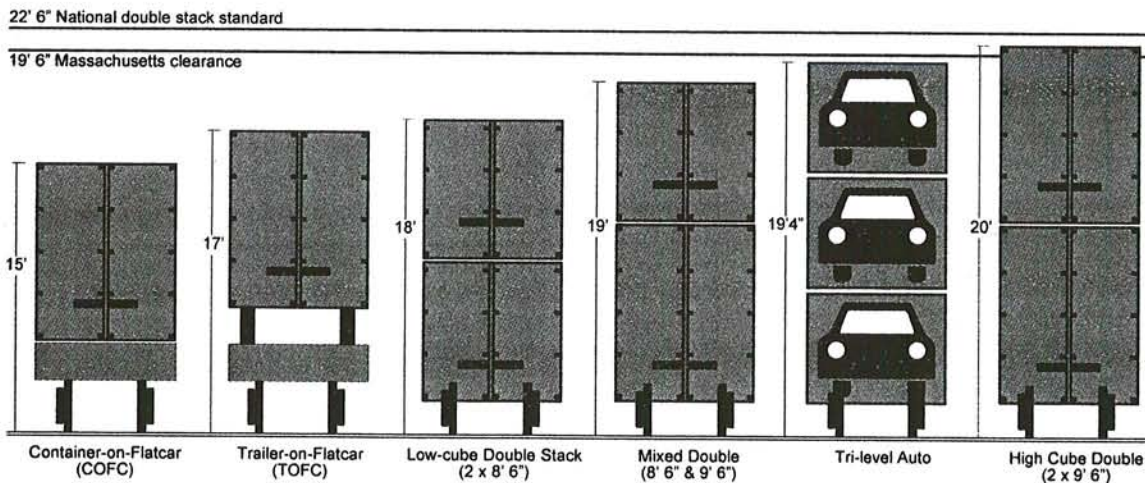
FRVT has operated the MWRA's Fore River Railroad line since 2002, under agreements with the MWRA. It is a wholly owned subsidiary of Twin Rivers Technology, which is the largest customer on the line. Its operations extend from Quincy to South Braintree, where it interchanges with CSX. FRVT operates over MBTA-owned tracks using assigned CSX retained trackage rights between East Braintree and South Braintree.

Double-Stack

Pan Am has the capability of moving any type of double-stack railcar, and tri-level auto railcars as well, into its intermodal facility in Ayer from New York. CSX has the capability of moving certain types of double-stack railcar, and tri-level auto railcars as well, into its intermodal facility in Worcester. However, most double-stack railcars are limited from continued movement through Massachusetts because of vertical restrictions created by various bridges in the MPO area.

Figure 19 shows the vertical clearances under bridges on rail lines with freight operations. Figure 20 shows the types of intermodal railcars. As is also shown in Figure 20, the federal standard for double-stack is 22.5 feet of vertical clearance. A bridge with 19.5 feet of clearance can accommodate a low-cube or a mixed double-stack railcar or a tri-level auto railcar. Massachusetts agreed, under Mass. General Law Chapter 160 Section 134A on new bridge construction, that bridges over rail lines will be built with a vertical clearance of 21 feet. When a bridge over the CSX or Pan Am line is reconstructed, it will be raised to 21 feet.

FIGURE 20: Rail Intermodal Car Types



As shown in Figure 19, at least 32 bridges over CSX's Boston Main Line have vertical clearances under 19.5 feet, and 39 have clearances under 21 feet. There are also a number of bridges with these restrictions over the rail lines branching off of the Pan Am Railways Freight Main Line that enter into the Boston MPO region.

In the 1990s, double-stack negotiations were conducted between Conrail and Massport. When CSX took over from Conrail, it had limited interest in double-stack operations since it would compete with its Port of New York and New Jersey operations. The Seaport Bond Bill authorization passed in 1996 by the Commonwealth did authorize funding for a double-stack initiative. Of the \$300 million authorized in the bond bill,

about \$100 million was earmarked for rail freight improvement projects, primarily consisting of the raising of bridges to allow transport of railroad flat cars carrying double-stacked shipping containers. Most of these funds remain unspent due to transition issues remaining from the dissolution of Conrail. Provisions of the bond bill were negotiated with Conrail, but they have not been renegotiated with CSX. For double-stack funding to proceed under the Bond Bill, negotiations would have to be restarted from scratch.

As also mentioned in the maritime chapter of this report, Massport is currently only interested in the creation of a single-stack rail connection to the port. It wants to see if the marketplace will support the route before it invests in a double-stack rail connection.

Of all the freight on the roads, 90% is domestic, and the rule of thumb is that domestic freight moves "on wheels"—that is, on trailers towed by tractors. Therefore building double-stack east of Framingham might only remove 10% of the truck traffic from the roads. (This 10% of the truck traffic would be the trucks carrying sea-going containers.)

Since the Commonwealth has agreed to reconstruct highway bridges over the CSX and Pan Am rail lines that are programmed for other repairs in the future to the agreed-upon double-stack standard, this is in all probability how progress toward achieving double-stack connections will be made.

ISSUES PERCEIVED BY RAIL FREIGHT STAKEHOLDERS AND POSSIBLY IN THE MPO'S PURVIEW

The descriptions below of issues perceived by stakeholders and possibly in the MPO's purview are based on interviews with individuals affiliated with owners and operators of freight transportation facilities and services and with users of freight transportation. Issues perceived by stakeholders but outside the MPO's purview are listed in chapter 8. The following are descriptions of the views of the individuals interviewed (all interviewees for this study are listed in Appendix 1). Some related data are also provided where deemed useful.

Double-Stack

Double-stack capability should be pursued to allow double-stack efficiencies in rail operations east of Worcester and Ayer.

Weight-Restricted Bridges

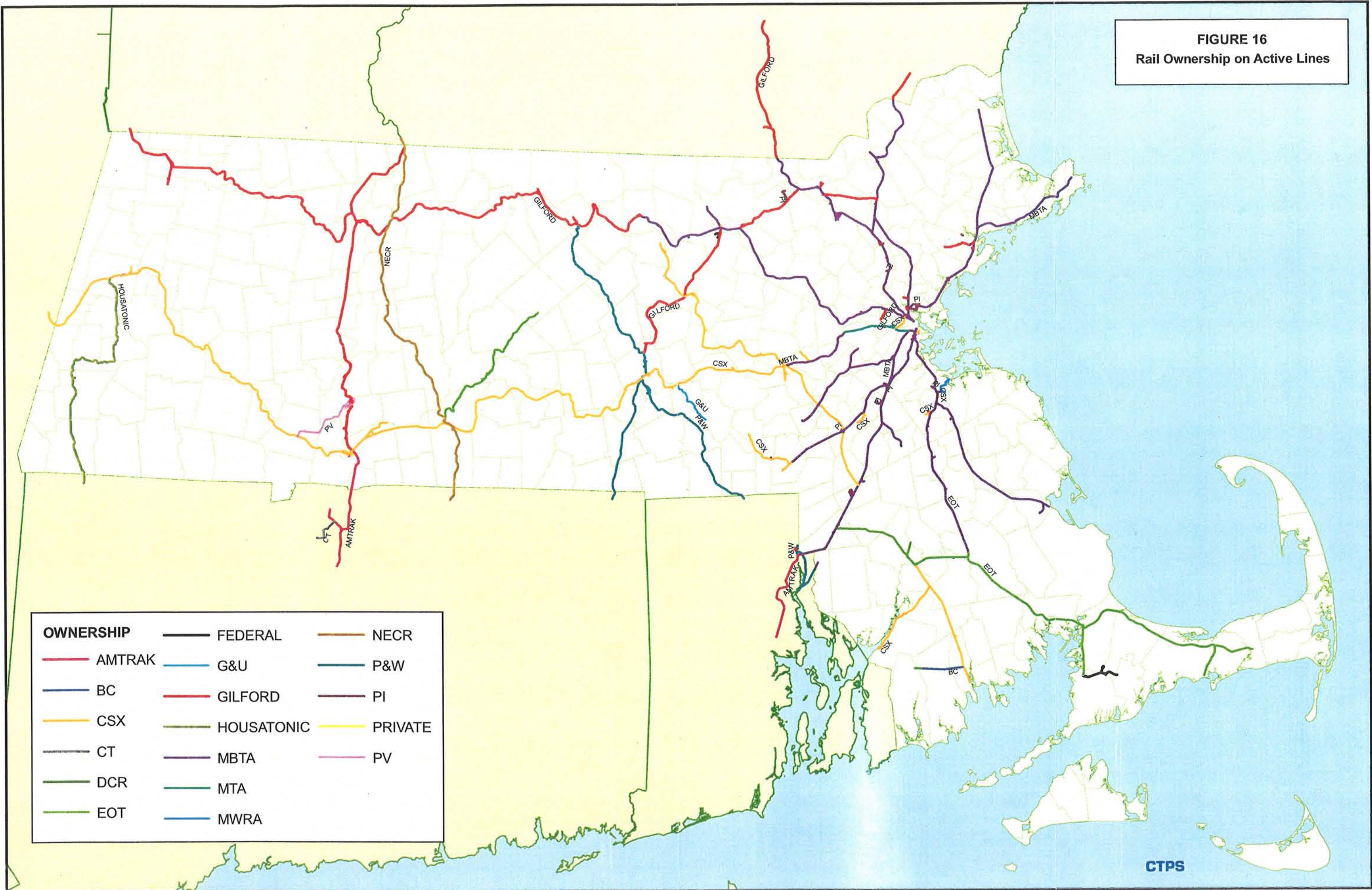
On Pan Am's route there are at least two bridges that are restricted to 263,000 pounds per train carload. The capacity of these two bridges should be increased. In addition, there is a two-mile stretch between the Grand Junction and Allston where the bridges are solid but the rail ties need to be upgraded. At the present time, trains may only go about 5 mph through this area.

Improving Grade-Crossing Safety

Work should continue toward putting an end to grade-crossing collisions.

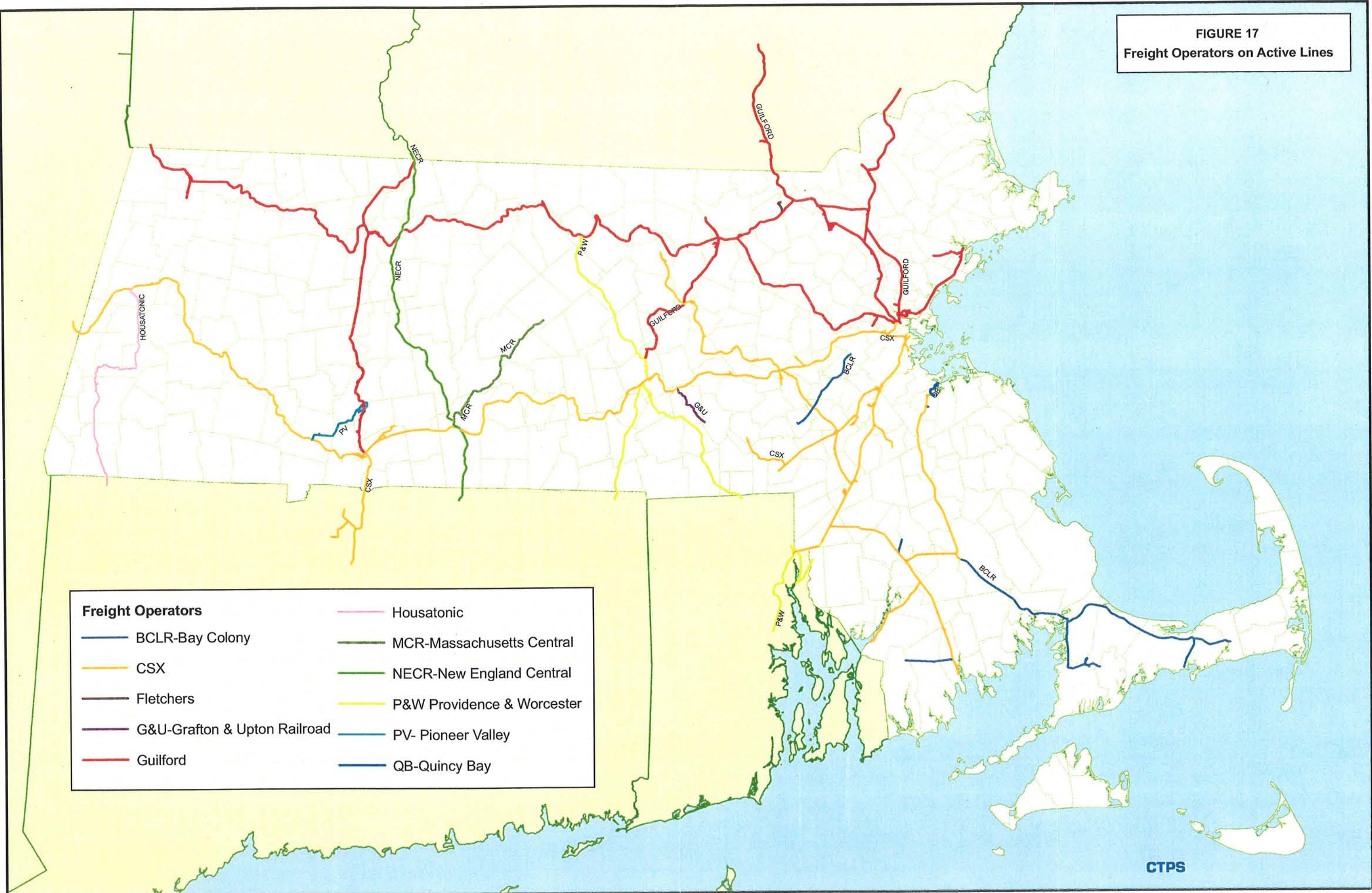
Improving grade crossing safety has long been one of the top priorities of the Federal Railroad Administration. From 1995 to 2004, the number of grade-crossing collisions in the U.S. declined by 3%, the frequency of such collisions per million train miles decreased by 42%, and the number of fatalities fell by 36%. During the first 11 months of 2005, grade crossing collisions were down 5.1%, and fatalities declined 5.3% compared to the same period of 2004.

FIGURE 16
Rail Ownership on Active Lines



OWNERSHIP			
	AMTRAK		NECR
	BC		G&U
	CSX		P&W
	CT		GILFORD
	DCR		HOUSATONIC
	EOT		MBTA
	FEDERAL		PI
	MWRA		PRIVATE
	PV		

FIGURE 17
Freight Operators on Active Lines














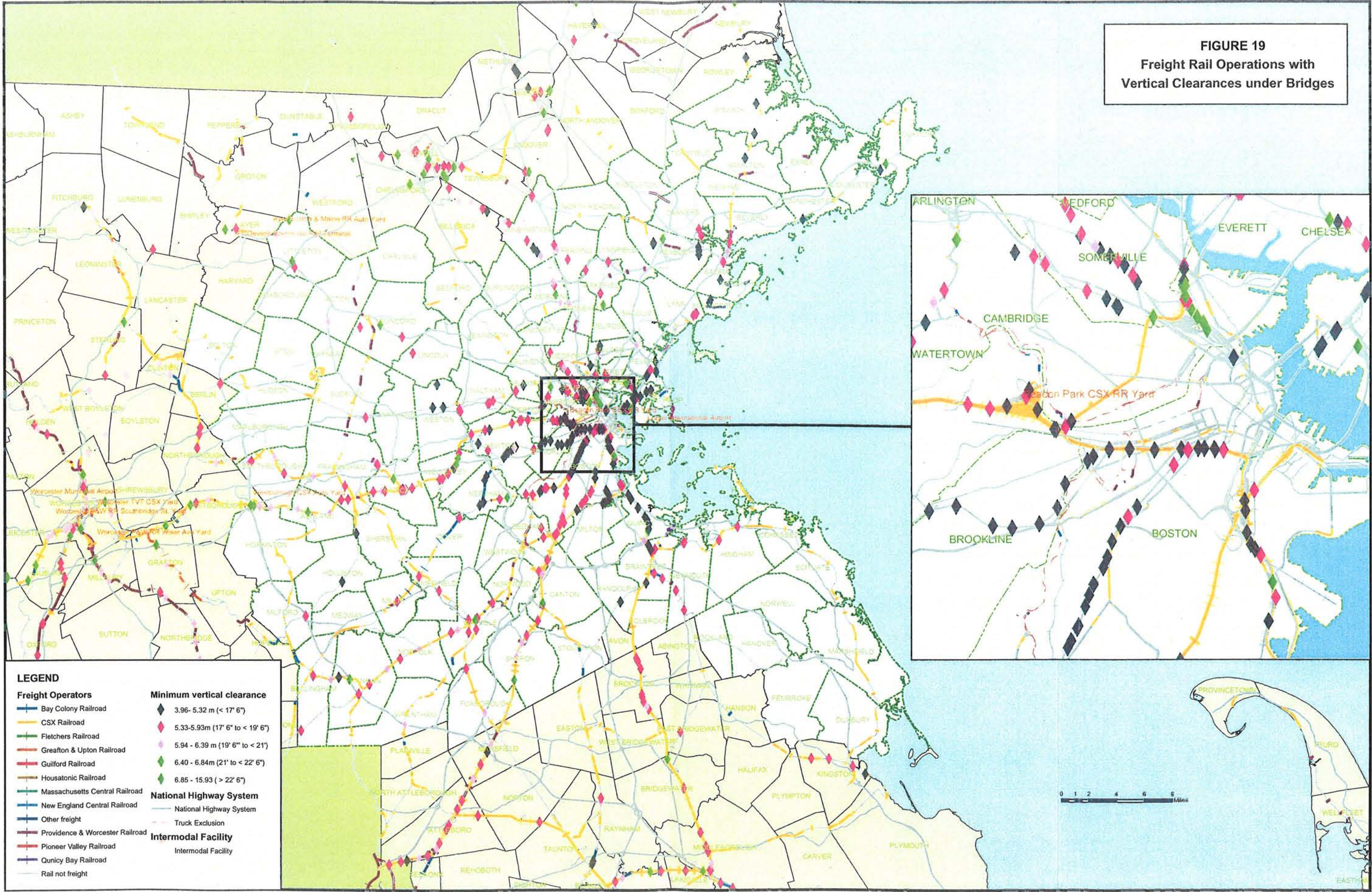
Freight Operators	
 BCLR-Bay Colony	 Housatonic
 CSX	 MCR-Massachusetts Central
 Fletchers	 NECR-New England Central
 G&U-Grafton & Upton Railroad	 P&W Providence & Worcester
 Guilford	 PV- Pioneer Valley
	 QB-Quincy Bay

FIGURE 18
U.S. Domestic Rail Freight Traffic
Year 2000



Source: Reebie Associates TRANSEARCH and U.S. DOT Freight Analysis Framework Project

FIGURE 19
Freight Rail Operations with
Vertical Clearances under Bridges



6 Air Freight

By weight, air cargo is a small component of this region's freight mix. By value, however, it is a larger component. Its share of freight value in Massachusetts is greater than the shares of rail and water freight combined (see Table 1, page 4).

INFRASTRUCTURE/FACILITIES

The major airports in the MPO region are the Lieutenant General Edward Lawrence Logan International Airport (Logan Airport) and Commander Laurence G. Hanscom Field (Hanscom Field) in Bedford.

Logan Airport is located in East Boston and is owned and operated by the Massachusetts Port Authority (Massport). The busiest airport in New England, it is the 6th-busiest airport in the United States and in 2005 ranked 11th in the world in the amount of air cargo that it handled. Table 7 lists the amount of air cargo handled at Logan in 2004.

TABLE 7
Logan Airport Cargo Handled in 2004 (Tons)

Freight Type	Mail	Packages	Other Freight
Domestic	32,697	232,226	66,503
International	225	343	95,733
Total	32,922	232,569	162,236

Source: Massachusetts Office of Transportation Planning

Hanscom Field is located in the towns of Bedford, Concord, Lexington, and Lincoln. It is situated 20 miles northwest of downtown Boston and is also owned and operated by Massport. It is the busiest regional, general-aviation airport in New England, handling business, charter, private, and air taxi flights. Hanscom is not an international airport. Currently, one commercial carrier operates out of Hanscom. Although little freight is handled at Hanscom currently, Federal Express, a major cargo carrier, is gearing up to begin operations there in the near future. Hanscom is located three miles from Interstate 95/Route 128.

Domestic air cargo in the tristate area has generally been handled by New Hampshire's recently renamed Manchester-Boston Regional Airport and Connecticut's Bradley International Airport in Hartford.

Table 8 lists the number of enplanements that occurred at each Massachusetts airport in the year 2000, giving an idea of the facilities' relative levels of activity. Access to Logan Airport is greatly facilitated by its location less than two miles from downtown Boston.

All of the Commonwealth's public airports are shown in Figure 21. (In this report, each chapter's *full-page* figures and tables are at the end of the chapter.) Figure 1 on page 7 shows the locations of the major airports in the Commonwealth, as well as other major airports in the Northeast region, and their relation to other intermodal freight facilities.

TABLE 8
Massachusetts Commercial Service Airport Enplanements (2000)

Airport	Large Certified Air Carriers	Commuter & Small Certified Air Carriers	Air Taxi Commuter Operators	Foreign Air Carriers	Total Enplanements
Logan International	11,525,398	737,311	688	1,350,110	13,613,507
Nantucket Memorial	6,891	193,549	96,011	0	296,451
Barnstable/Polando Field	0	115,188	90,718	0	205,906
Hanscom Field	1,985	79,693	526	0	82,204
Martha's Vineyard	4,220	66,189	741	0	71,150
Worcester Regional	27,744	25,054	118	0	52,916
New Bedford Regional	0	22,831	51	0	22,882
Provincetown Municipal	0	15,651	43	0	15,694

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of the Associate Administrator, "CY 2000 Enplanement Activity at U.S. Commercial Service Airports."

LOGISTICS

Logan Airport is the major air cargo terminal in the Boston Region MPO area and Massachusetts. Most international air cargo for the Boston region is handled at Logan. Intermodal freight movement to and from Logan is by truck. There is no freight rail access to Logan, and no provisions for it are likely to develop. Many private carriers, including Federal Express and United Parcel Service, operate air cargo facilities at Logan. A flowchart depicting the steps in the handling of air cargo is provided as Figure 22.

As recently as 1999, Logan Airport was only operating at 30% of its air cargo capacity. If significantly more of this capacity were used, Massport revenues would rise not only from the increased business but also through savings derived from economies of scale.

The Federal Aviation Administration, the New England states, Massport, and other aviation agencies are working on a comprehensive update to the New England Regional Airport System Plan (NERASP). It will assess the region's air transportation demand, examine airport issues from a regional perspective, identify potential actions or policies to meet New England's long-term aviation needs, and evaluate public policy and strategies.

A national effort with strong potential significance for all regions is the Electronic Freight Manifest (EFM) initiative. This project is being led by the Federal Highway Administration (FHWA) Office of Freight Management and Operations, in coordination with the FHWA Joint Program Office. It will test improvements in the speed, accuracy, and visibility of freight information exchange between supply chain partners. The new methods could produce a more efficient and reliable freight transportation network without requiring major expenditures on the physical infrastructure.

This high-priority EFM initiative involves partnering with industry to conduct operational tests in international air cargo movement. It will evaluate the costs and benefits of EFM and identify trigger points that will prompt the industry to implement the information transfer procedures. Deployment testing is scheduled to run from March 2006 to March 2007. An independent evaluation will be completed by the summer of 2007.

ISSUES PERCEIVED BY AIR-FREIGHT STAKEHOLDERS

Individuals affiliated with owners and operators of freight transportation facilities and services and with users of freight transportation were interviewed to learn what they perceive to be the freight transportation issues that need to be addressed. The air freight issues they named were outside the MPO's purview; therefore, they are presented in chapter 8.

FIGURE 21
Massachusetts Airports

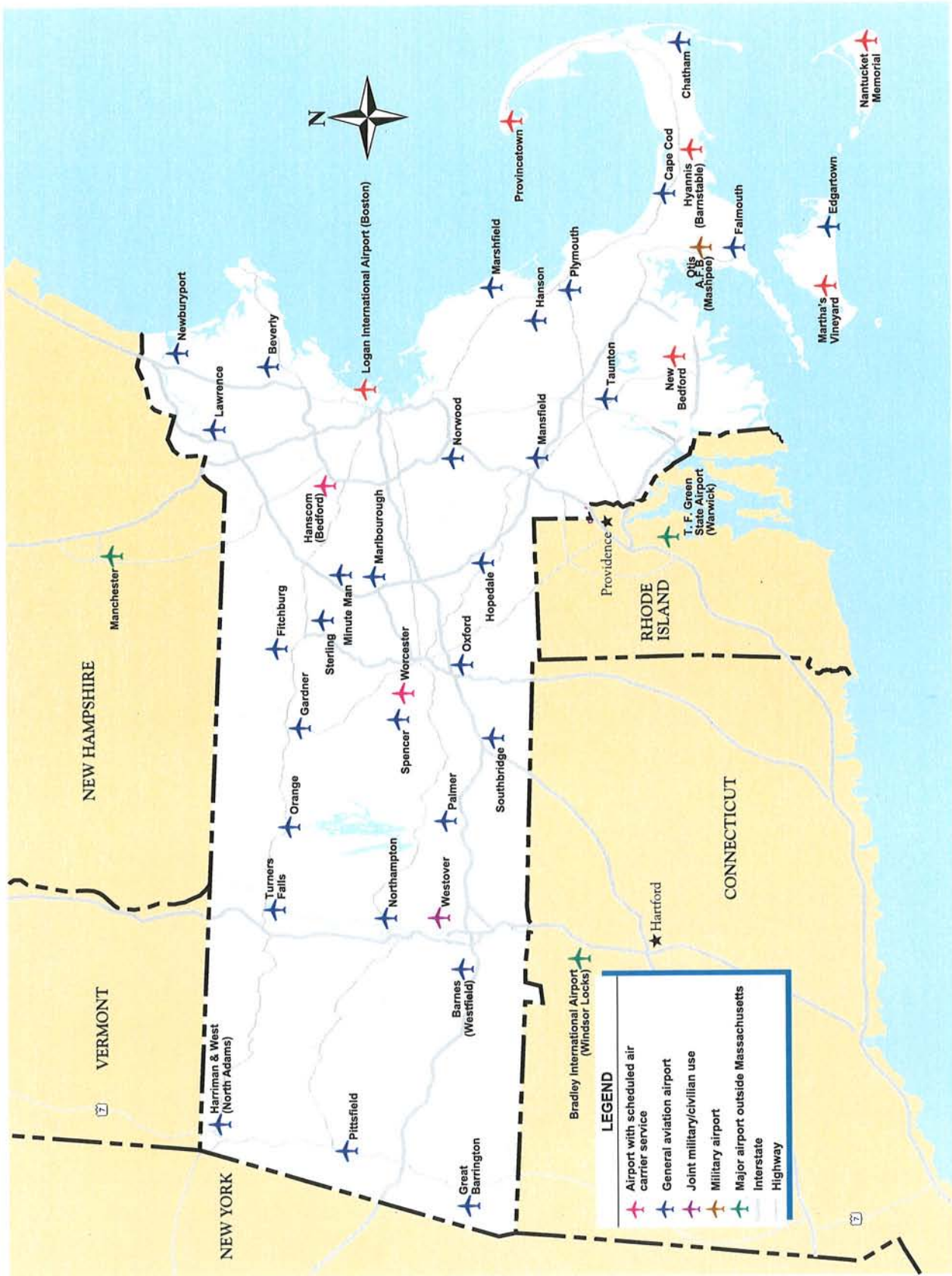
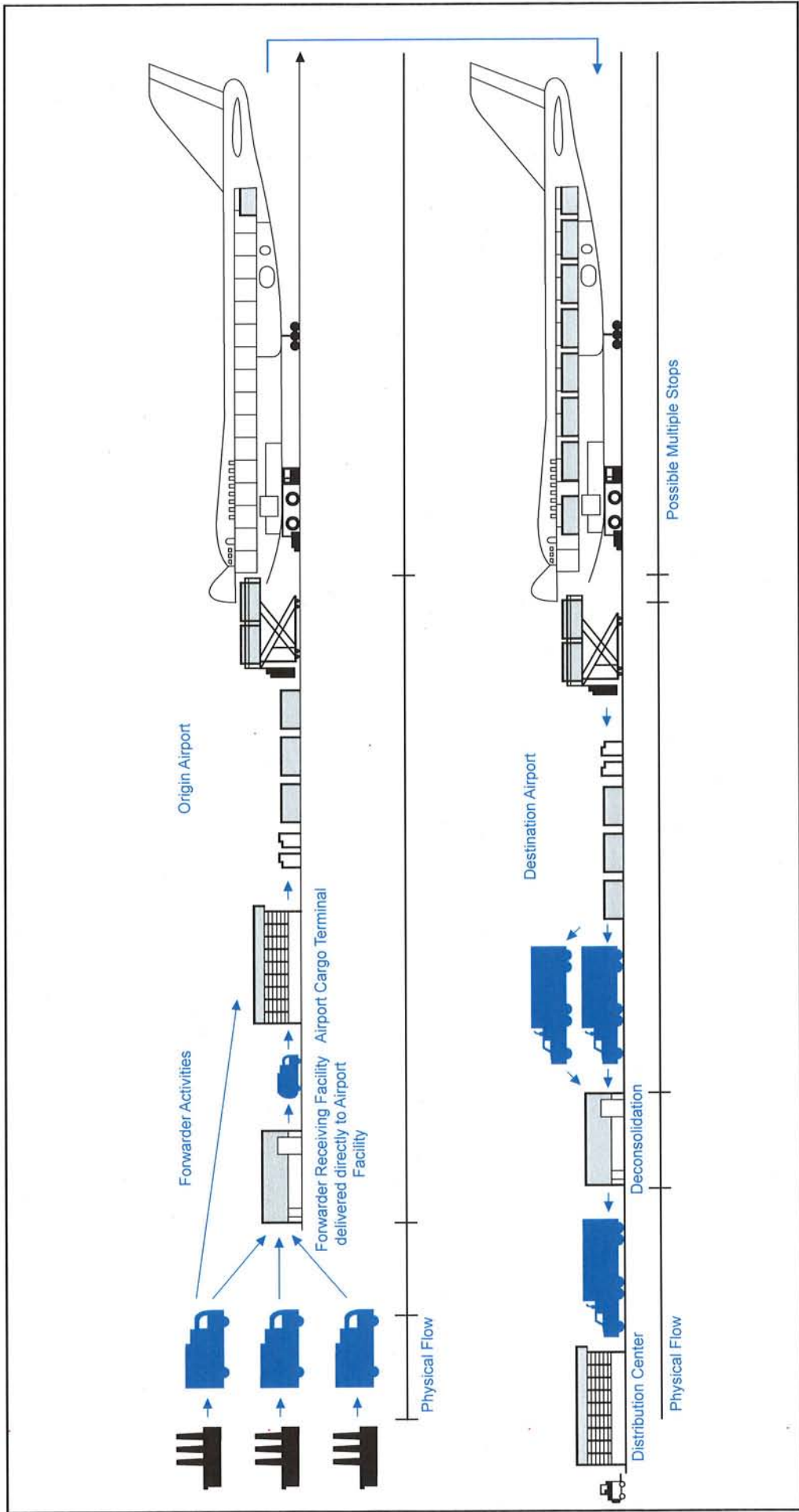


FIGURE 22
Air Cargo Flow Chart



Source: The Limited Brands Co./FHWA Website

7 Freight Planning by Other MPOs, Public-Private Partnerships, and the Private Sector

BACKGROUND

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) added new freight transportation planning requirements to metropolitan planning regulations. Though some states and metropolitan planning organizations (MPOs) had previously considered freight movement in their transportation planning efforts, ISTEA was the first time that doing so was mandated by the federal government.

ISTEA required MPOs to develop plans that addressed the efficient movement of freight and access to ports, airports, and intermodal facilities. Additional legislation created since ISTEA that also affects freight planning is the National Highway System Designation Act of 1995, the Transportation Equity Act for the 21st Century of 1998 (TEA-21), and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005.

TEA-21 required that the metropolitan planning process for freight seek to:

- Support the economic vitality of the metropolitan area by promoting and enabling global competitiveness, productivity, and efficiency
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
- Promote efficient system management and operation
- Include the freight community in the development of both the Regional Transportation Plan and the Transportation Improvement Program

In 2005, SAFETEA-LU added the following:

- MPOs are encouraged to consult and coordinate with planning officials responsible for other types of planning activities affected by transportation, including planned growth, economic development, environmental protection, airport operations, and freight movement
- Safety and security of the transportation system are now separate planning factors that are to be considered during the metropolitan planning process

Improved freight transportation is addressed in a number of other planning, financing, and infrastructure improvement provisions and programs throughout SAFETEA-LU. Some of these are:

- A truck-parking-facilities pilot program.
- A highway-railroad crossing safety improvement funding program.

- An allowance to construct truck-idling-reduction facilities on interstate highway rights-of-way.
- A new highway bridge funding program.
- A new program for research, training, and education to support enhancements in freight transportation planning and capacity building, funded at \$875,000 per year for the years 2006 through 2009, from Training and Education funds.
- The Freight Intermodal Distribution Pilot Program. This program provides \$30 million through 2009 for grants (1) to facilitate intermodal freight transportation initiatives at the state and local level for the relief of congestion and improvement of safety and (2) to provide capital funding to address infrastructure and freight distribution needs at inland ports and intermodal freight facilities. It names six projects, funded at \$5 million each. For each year through 2009, each of the six designated projects is to receive 20% of its funding (\$1 million each).
- The National Cooperative Freight Transportation Research Program. An advisory committee is to be selected to develop a national research agenda for this program, funded at \$3.75 million per year for the years 2006 through 2009 from Surface Transportation Research funds.

FREIGHT INITIATIVES AT OTHER MPOs

Freight transportation planning activities and other freight-related activities conducted by other MPOs are described below.

Albany, New York

The Capital District Transportation Committee (CDTC) is the MPO for the Albany, Schenectady, and Troy, New York, metropolitan area, located in the northeastern part of the state. It formed a freight advisory committee in 1994 that has helped identify infrastructure problems, recommended resolutions to those problems, and created performance metrics to assist in freight planning efforts.

Atlanta, Georgia

In addition to having a Freight Advisory Task Force, the Atlanta Regional Commission (ARC) is pursuing several other initiatives that target the enhancement of freight movement in its region. These include a proposed study of regional goods and services mobility, a study of hourly truck movements in the region, to be conducted in conjunction with the Georgia Department of Transportation, and an air cargo capacity study, to be conducted in cooperation with the Hartsfield-Jackson Atlanta International Airport. ARC is also studying the implementation of truck-only toll roads in and around the metropolitan Atlanta area.

Baltimore, Maryland

The Baltimore Regional Transportation Board (BRTB) of the Baltimore Metropolitan Council (BMC) has an advisory subcommittee for freight movement. It provides the local freight stakeholders with a voice in the regional freight transportation planning process.

Chicago, Illinois

The Chicago Area Transportation Study (CATS), the MPO for the Chicago metropolitan area, covers the largest intermodal freight market in the nation. The area has 26 major intermodal yards and five waterborne freight facilities. CATS has been involved in freight transportation planning since the 1960s. It conducted separate travel surveys of the motor carrier industry in 1970 and 1986 and has produced an inventory of the region's intermodal facilities.

Lehigh Valley, Pennsylvania

The Lehigh Valley Transportation Study of the Lehigh Valley Planning Commission is the MPO for the cities of Allentown, Bethlehem, and Easton, Pennsylvania. This MPO does not have a freight advisory task force, though the area is a major rail freight center, with eight separate railroad lines serving it. It also is a major truck freight center, with Interstate 78 running its length from west to east and a large number of warehouses and industrial parks on its western side, with more under construction. The MPO only briefly mentions rail freight in its Plan, and it holds the position that MPOs cannot be effective in freight planning, that freight issues are the purview of the private sector, and that if any public entity could influence the processes involved, it would be the state, through its department of transportation, not the regional planning agency.

Miami, Florida

The Miami-Dade (Florida counties) MPO's freight advisory committee is a newly created panel that will advise the MPO on freight movement and truck traffic needs. It is actively recruiting members.

San Francisco, California

The Metropolitan Transportation Commission (MTC) is the MPO for the San Francisco, Oakland, and San Jose, California, region. The MTC formed the Freight Advisory Council in order to address the concerns of the private freight sector and to provide a forum in which that sector can participate in the planning process. It also assembled a set of short-term infrastructure projects to alleviate traffic bottlenecks in the region, conducted a survey of truck drivers in the Fremont, Hayward, and Union City areas, and assisted with the establishment of goods movement planning workshops for various local congestion-management agencies, including the Alameda County Congestion Management Agency.

Seattle, Washington

The Puget Sound Regional Council (PSRC) is the MPO for the Seattle/Tacoma, Washington, area. In 1994, PSRC created the Freight Mobility Roundtable in cooperation with the Economic Development Council of Seattle and King Counties. Since its creation, the Roundtable has advised the PSRC on its ongoing freight data collection and Metropolitan Transportation Plan, has helped assemble a list of short-term improvement projects, and has educated other freight stakeholders about the MPO planning process.

Toledo, Ohio

The Toledo Metropolitan Area Council of Governments (TMACOG) district contains the third-largest railroad hub in the country, with 24 rail lines converging on it. The Railroad Task Force serves as TMACOG's freight transportation planning advisory group, assisting the area's rail-freight stakeholders in long-range planning, coordinating rail corridor studies, and sponsoring rail safety education programs for other community members.

PUBLIC-PRIVATE FREIGHT PLANNING PARTNERSHIPS

Federal Highway Administration

FHWA's Freight Planning Capacity Building Workshop website (see endnote 4) contains examples of public-private freight planning partnerships, freight planning organizational issues, and "how-to" freight planning principles.

Massachusetts Port Authority

The Massport Marine Terminal (MMT) project in South Boston will create a 470,000-square-foot intermodal cargo warehouse and bulk cargo facility through a partnership between the Massachusetts Port Authority and Marine Terminal Development LLC. Spread over 30 acres, three separate buildings will be erected as part of this \$50 million project for cold storage, seafood processing, and freight forwarding, in addition to facilities to be constructed at the North Jetty to handle break/bulk commodities like forest products, salt, and cement. The Freight Committee of the MPO's Regional Transportation Advisory Council toured these facilities in May of 2006.

PRIVATE SECTOR INITIATIVES

A consortium of eight national industry associations, the Freight Stakeholders National Network has been formed for the purpose of promoting freight mobility through private-sector-initiated Freight Stakeholder Coalitions throughout the country. The eight members are the Air Freight Association, the American Association of Port Authorities,

the American Trucking Associations, the Association of American Railroads, the Intermodal Association of North America, the National Association of Manufacturers, the National Industrial Transportation League, and the National Private Truck Council.

8 Issues Perceived by Stakeholders but Outside the MPO's Purview

Chapters 2 through 6 include descriptions of issues perceived by stakeholders and potentially in the MPO's purview. Issues perceived by stakeholders but outside the MPO's purview are described in this chapter.

The descriptions of issues below are based on interviews with individuals affiliated with owners and operators of freight transportation facilities and services and with users of freight transportation (all interviewees for this study are listed in Appendix 1). The following describes the views of the individuals interviewed. Some related data are also provided (in brackets) where deemed useful.

TRUCK FREIGHT

Truck Exclusions

Legislated truck exclusions are a major concern to the trucking industry as, though they can be reversed, it takes time to do so. [Many communities in Massachusetts are attempting to obtain truck exclusions. MassHighway has jurisdiction over truck exclusions on roadways that receive federal and state funding, but many communities attempt to bypass MassHighway by going directly to the legislature. If a community persists in excluding trucks on federally and state-approved truck routes, the Federal Highway Administration can withhold the municipality's federal funding for the roadways.]

Lack of Shipping and Multimodal Facility Customers

Truckers delivering freight to locations in Massachusetts are often also looking for loads to pick up for delivery to their next destination so as not to haul an empty trailer (often referred to as "dead-heading"). If they can find a load, they will often deliver it for the price of fuel costs. This undercuts local trucking firms.

Hazardous Materials

Restrictions on the movement of hazardous materials increases delivery costs for shippers because of increased travel times and fuel consumption.

[Federal Hazardous Materials Regulations, Title 49 of the Code of Federal Regulations (CFR), Sections 397.6 and 397.9, Massachusetts General Law (MGL) Chapter 81A, and Massachusetts Code of Regulations (MRC) Title 730, Chapter 7.10 (1) restrict the movement of hazardous materials through highway tunnel structures. This affects many of the interstate highways in downtown Boston, including:

- Interstate 90 through the Ted Williams Tunnel, traveling under Boston Harbor
- Central Artery
- Massachusetts Turnpike Extension under the Prudential Center and Copley Square
- Tobin Bridge approach under City Square in Charlestown
- Sumner Tunnel
- Callahan Tunnel

Massachusetts has a zero-tolerance policy on this restriction: it is rigorously enforced by the Massachusetts State Police. Some relatively benign-sounding items, such as milk, liquid paper, and hair spray, are considered hazardous materials under these regulations.]

Fuel Costs

While high fuel costs have a negative effect on the economy in general, the trucking community is especially hard hit by them. Increases in the price of diesel fuel can actually result in the closure of trucking companies, due to the marginal profits available in the trucking industry. (See Endnote 1.)

Hours-of-Service Rules

With the implementation of new hours-of-service (HOS) rules, trucking companies' logistics plans have had to be reworked. This has sometimes resulted in reduced operational efficiency, increased fuel costs, and longer delivery times.

[Hours-of-service (HOS) regulations are promulgated by the Federal Motor Carrier Safety Administration (FMSCA) of the U.S. Department of Transportation. New HOS regulations were recently enacted and took effect on October 1, 2005. Both the old and new regulations allow 11 continuous hours of driving after 10 continuous hours off duty. However, the new regulations require commercial motor vehicle drivers that use the sleeper berth provision to spend at least eight consecutive hours in their sleeper berth, plus two consecutive hours either in the sleeper berth, off duty, or any combination of the two. Under the old regulations, drivers were allowed to split their sleeper berth time into two-hour segments.]

Idle-Time Rules

Anti-idling and hours-of-service rules are not supported by important infrastructure of truck stops and truck parking spaces available for truckers' use.

[In Massachusetts, state law (M.G.L. Chapter 90, Section 16A) and DEP regulations (310 CMR 7.11(1)(b)) limit truck idling to no more than five minutes in most cases. A truck may idle longer, if absolutely necessary, when the trucks are being serviced or are making deliveries during which engines must be kept running (to power refrigerators, for example, or operate accessories such as power lifts.)

Massachusetts is one of the few states in which the five-minute idle rule is not tied to outside temperature. Legislation was filed in 2005 to change that. The Massachusetts Turnpike Authority is studying the electrification of truck parking spaces to allow turning off the truck's motor.]

Security-Related Costs

Technologies and procedures related to security are adding to the cost of doing business.

[Security is a concern on our highways and bridges and in our tunnels, especially on vital freight-transportation routes. Recent incidents on I-95, which is a freight lifeline to the MPO area, New England, and the entire East Coast, proved how easily a single act of terrorism could sever a vital route. In Baltimore, Maryland, the I-95 highway tunnels were closed for almost a full day due to a bomb threat. In Bridgeport, Connecticut, I-95 was closed for over a week due to a fuel truck crash and fire.

A recent study by the Ontario Chamber of Commerce suggests that compliance with newly enacted security requirements and measures is now costing the North American freight community \$4 billion annually. Some of these costs stem from new advances in truck and freight security tracking technologies, such as long-range mobile communications and short-range radio frequency identification (RFID) tools. Other costs are a result of more stringent border-crossing requirements and longer wait times.

Since 9/11, driver background checks have become required. Thirty-three states use a U.S. Transportation Security Administration (TSA) contractor in order to collect fingerprints and biographical information from drivers. Several states have developed their own systems. There are now 17 states with various types of programs and fees. The TSA contractor charges \$94 for collecting the information and performing a background check. Most of the states average about \$91, but no specific license or endorsement is given, which makes the fee seem somewhat redundant. In addition to this, there is the Commercial Drivers License (CDL) fee of about \$50, plus an additional cost of \$94 to receive the hazardous-material-hauling endorsement.]

South Boston Bypass Road/Massport Haul Road and South Boston Seaport District Development

The South Boston Bypass Road/Massport Haul Road needs to continue to be exclusively for the use of freight-hauling trucks, notwithstanding redevelopment of the surrounding area.

[The Haul Road is a designated truck route that carries heavy industrial truck traffic from local highways to the South Boston Marine Industrial Port and Conley Terminal. This commercial traffic is thus separated from other traffic and removed from South Boston's residential streets. Because the South Boston Seaport District, through which the Haul Road passes, is slated for intense redevelopment in the near future, the trucking industry

is concerned that commuters and other users currently excluded will petition to use this roadway.]

Expansion at the Port of Worcester Customs District

At the present time, the Port of Worcester in Worcester, Massachusetts, is very congested with trucks and appears to be over-capacity. There does not seem to be enough adjacent available land for expansion, which could constrain increases in operations at the Port of Boston and Logan International Airport.

[The Port of Worcester has become a customs district (see Endnote 2) for the Port of Boston and Logan Airport. It is the closest double-stack rail facility to the Port of Boston.]

Triple Trailers

The possibility of increasing the length restriction on tractor-trailers and/or allowing triple trailers on regional arterial roadways in Massachusetts should be explored.

[Currently, tractor-trailers are restricted to 102 feet in length.]

Future Employment

Fewer people are choosing trucking as a career. The new HOS regulations, the price of fuel, and the competition to offer increasingly reduced freight-hauling rates make trucking more complicated. In addition, the passage of new and tougher federal background checks for drivers could eliminate a large number of currently active truck drivers in the future.

MARITIME FREIGHT

Short-Sea Shipping

Short-sea shipping could help relieve congestion on Interstate 95.

[Short-sea shipping is the movement of freight by ships that travel along the coast and do not cross an ocean. It is also referred to as movement of freight by "coastal barge." The freight can be in the form of loaded tractor-trailers. Roll-on/roll-off facilities like those at the Port of Fall River would be needed at other ports to facilitate this operation.

The Commonwealth, in conjunction with other New England states, is exploring short-sea shipping (as well as other options for relieving congestion on Interstate 95). The Massachusetts Seaport Advisory Council is exploring the possibility of moving domestic freight by short-sea shipping. The Council is talking to stakeholders in Florida to see what goods could possibly be moved in this fashion, in the hopes of developing a coastal

route. For example, upholstery for automobiles and furniture is being manufactured in Fall River and shipped to Brazil. Currently the upholstery is being trucked from Fall River to Jacksonville, Florida, a trip which can take from three to nine days, depending on traffic. This shipment would be an ideal candidate for short-sea shipping.

Some shippers might prefer using this method and going through the smaller Massachusetts ports—Salem, Gloucester, New Bedford, and Fall River—rather than ship goods through international seaports, such as the Port of Boston or the Port of New York/New Jersey, which would charge additional fees.

New York and New Jersey are now considering barging from Newark, New Jersey, to JFK Airport in New York and using trucks to haul the freight a shorter distance. Barging international freight from Newark to Albany, New York, with the clearing of customs in Albany, was originally thought irrational by some; however, this service is now running at full capacity.]

Safety and Security

The U.S. Bio-Terrorism Act's requirement that information on hazardous shipments be provided two hours prior to arrival at a border or seaport could cause delays, increase costs, and reduce competitiveness.

[This act's requirement is more stringent than the U.S. Customs requirement of one hour in advance of arrival.]

Seaport Bond Bill

The \$300 million Seaport Bond Bill was passed in 1996. To date, only \$60 million has been spent on port improvement projects.

RAIL FREIGHT

Location of Intermodal Facilities

Due to the high and constantly increasing cost of land, restrictive zoning, and other factors, intermodal facilities are being sited farther away from the urban centers they serve, which makes them more difficult and expensive to use.

Other Facilities

New England Transrail LLC (NET) of Teaneck, New Jersey, a limited liability corporation doing business in the Commonwealth as the Wilmington and Woburn Terminal Railroad Company, is attempting to start a switching terminal railroad in Wilmington, Massachusetts. It would be located about one-fourth mile north of the Anderson Regional Transportation Center, on the Woburn/Wilmington town line. Legal

complications have delayed the start of construction. NET plans to work with Pan Am (Lawrence/Lowell to Ayer) and, eventually, to connect to CSX through the Grand Junction to Beacon Park Yards in Allston. There are land use issues associated with this project related to Wilmington's sewage treatment facility.

Hazardous Materials Movement by Rail

A large portion of hazardous materials is transported throughout the country by rail, because, while dangerous, it is safer being transported by rail than over the roadways by truck. The law requires that rail operators not refuse hazardous materials for transport, in spite of the danger to the railroads and the areas through which hazardous materials are transported.

[Under the Hazardous Waste Common Carrier Agreement, a combination of rules and regulations laid down by the Interstate Commerce Commission (now the Surface Transportation Board), the U.S. Department of Transportation, the Nuclear Regulatory Commission, common law, and other sources (all of which are based on the "common carrier obligation" outlined in U.S. Code, Title 49, Subtitle IV, Part A, Chapter 111, Subchapter I, Section 11101 (a), Common Carrier Transportation, Service, and Rates), a railroad may not deny service to any customer or fail to "respond to reasonable requests for common carrier service," including the transport of hazardous waste or other dangerous cargo, up to and including radioactive nuclear waste, even if it is to be transported through heavily populated urban areas.]

Limitations to Freight Movement in the Northeast

As discussed in the maritime chapter, ocean freight coming to the United States from Europe and Asia is generally unloaded at the Port of New York/New Jersey, due to shipping time or availability of services. Since CSX already operates trains from the Port of New York/New Jersey to New England, any expansion in the movement of freight by rail from the Port of Boston would most likely only occur with new shipping business being brought to the Port of Boston. CSX would rather not divert business from the Port of New York/New Jersey to the Port of Boston: that is, it would not be economical for it to expand into the Port of Boston merely to enable it to compete with itself. CSX currently runs an express train (known as "the UPS Train," because it was originally chartered by United Parcel Service) from Port Elizabeth, New Jersey, that transports containers from the Port of New York/New Jersey into Worcester. It leaves Port Elizabeth daily at 5:00 PM and arrives in Worcester at 2:00 AM. CSX can operate double-stack trains along this route.

For CSX rail freight delivery into New England from the west, trains pass into Massachusetts on the Boston Main Line via the CSX hub in Selkirk, New York. This line can carry the full 286,000-pound/carload-weight limit. Some types of double-stack trains can be accommodated along this route into Worcester, but service is restricted to single-stack into Framingham and Beacon Park Yards.

Pan Am Railways freight delivery from Rotterdam Junction (northwest of Albany, New York) into Massachusetts, New Hampshire, and Maine comes through its intermodal facility in Ayer, Massachusetts. The rail line from Rotterdam Junction to Ayer can accommodate double-stack trains. Any rail freight deliveries into the MPO area are restricted to single-stack trains due to bridge vertical clearance restrictions. Pan Am's Freight Main Line has at least two rail bridges that are restricted to 263,000 pounds per train carload.

AIR FREIGHT

Reducing Delays

Delays which have affected Logan Airport's overall competitiveness in freight handling.

[An additional runway is being constructed at Logan to reduce delays. The construction of the 5,000-foot-long, \$85 million runway began in April 2005 and is scheduled for completion in 2006. The new runway is expected to reduce delays about 25%. Complementing this project will be Massport's \$8.5 million upgrade of Logan's ground radar system.

Development Near Airports

Development near airports is an issue because it can use land that an airport might otherwise use and can also affect how an airport operates. A case in point is Columbus Center, a very large complex proposed for development over the Massachusetts Turnpike near the MBTA's Back Bay Station. In February 2006, American Airlines filed objections with the Federal Aviation Administration, which had already approved the project, over Columbus Center's 443-foot proposed height, claiming that it will cause the airline to operate less efficiently by requiring its airplanes to carry less fuel, fewer passengers, and/or less freight.

Crowded Skies

The projected increase in the number of hours flown by general aviation aircraft has the potential to cause delays, thereby increasing operating costs and raising fees, which, in turn, would make air cargo less attractive as a freight transportation mode. The increase in air traffic could also require safety measures.

[General aviation aircraft are typically privately owned aircraft that are not part of a passenger airline or air cargo company. General aviation travel is projected to increase from 27.3 million hours in 2004 to 29.2 million hours in 2008. In 2004, the Federal Aviation Administration listed 7,729 active general aviation aircraft in the states of Vermont, New Hampshire, Maine, and Massachusetts.]

Security

Although not required at this time, new air cargo security requirements, such as freight screening and/or x-raying, could factor into potential customers' decisions on whether or not to use air as their preferred mode of freight shipping.

Unused Capacity

As recently as 1999, Logan Airport was only operating at 30% of its air cargo capacity.

[While all of the reasons contributing to this statistic have not been fully explored, it is believed that they include the fact that air transportation is generally only used for the lowest-weight, highest-value, and most time-sensitive cargo. The freight coming into the region generally consists of bulk goods that do not need to be delivered by the next day. Air freight coming into Massachusetts amounted to less than one million tons annually between 1998 and the present, which is equivalent to less than 0.5 % of all the incoming freight.]

Endnotes

(1) This example comes from a heating oil delivery contractor. With the bridge on Alford Street (Massachusetts State Route 99 in Everett) being posted or weight-restricted, this contractor must detour around this bridge using an alternate route. This detour costs approximately \$500.00 extra per truck per day (approximately \$13,000 per month) to take the alternate route. This breaks down as follows: Because the alternate route around the weight-restricted bridge is longer, it adds one (1) additional hour per round trip to the pick up and delivery cycle. This cycle consists of traveling back and forth between the fuel farm and the customer. This additional one (1) hour is added to what used to be an average 12-hour workday consisting of four (4), three (3) hour loads or round trips. This extra hour means that now only three (3), four (4) hour round trips, also equaling 12 hours, can be made per truck per day. Since using the detour around the weight-restricted bridge reduces the number of deliveries from four (4) deliveries to three (3) deliveries per day, the driver must stop driving within 12 hours, or after three (3), four (4) hour round trips, instead of four (4), three (3) hour round trips, due to the new federal Hours of Service (HOS) regulations. The additional time required to make four (4), four (4) deliveries or round trips daily would equal 16 hours, which would take a driver beyond the 12-hour HOS limit. The cost to make up that lost daily trip equals one (1) driver per truck per delivery = \$70.00 per hour per driver X 4 hours per delivery = \$280.00. Prior to this detour requirement, profit equaled \$225.00 per delivery. With each truck's daily output now being reduced by one load, that equals a loss in daily profit = \$225.00 per day.

$$\$280.00 + \$225.00 = \$505.00.$$

\$505.00 per day X 26 average work days per month = \$13,130.00 per month, using a six (6) day, Monday through Saturday, workweek.

(2) Customs District: A Customs District is any area where the customs-related functions and duties of the United States Department of Homeland Security's Customs and Border Protection Division are carried out. These functions and duties include working closely with other federal government agencies, foreign countries, and their representatives to maintain valuable communications on issues related to border security that protects against terrorism while facilitating trade and passenger operations, as well as enforcing U.S. import and export laws and regulations, including conducting immigration policy and programs. Agriculture inspections are also performed at seaports to protect the U.S. from potential carriers of animal and plant pests or diseases that could cause serious damage to America's crops, livestock, pets, and the environment.

(3) From the U.S. EPA Federal Register Environmental Documents website at <http://www.epa.gov/fedrgstr/EPA-IMPACT/2004/August/Day-04/i17641.htm>:
SUMMARY: On December 3, 2003, New England Transrail, LLC d/b/a the Wilmington and Woburn Terminal Railroad Company (Applicant or W&WTR) filed a petition with the Surface Transportation Board (Board) pursuant to 49 United States Code (U.S.C.)

10502 seeking exemption from the formal application procedures of 49 U.S.C. 10901 for authority to acquire 1,300 feet of existing track, construct 2,700 feet of new line, and to operate the entire approximately 4,000 feet of track located on and adjacent to a parcel of land owned by Olin Corporation (Olin) in Wilmington, Massachusetts, upon which Olin had in the past operated a chemical plant. The Olin-owned parcel is located in Wilmington, Massachusetts, but a portion of the line to be constructed and operated by W&WTR also would be located in Woburn, Massachusetts. The Board's Section of Environmental Analysis (SEA) has prepared an Environmental Assessment (EA) for this proposed [[Page 47208]] project. Based on the information provided from all sources to date and its independent analysis, SEA preliminarily concludes that the Proposed Action would have no significant environmental impacts if the Board imposes and the Applicant implements the environmental mitigation conditions recommended in the EA. Accordingly, SEA, recommends that if the Board approves the project, New England Transrail be required to implement the mitigation set forth in the EA. Copies of the EA have been served on all interested parties and will be made available to additional parties upon request. SEA will consider comments received when making its final environmental recommendation to the Board. The Board will consider SEA's final recommendations and the complete environmental record in making its final decision in this proceeding.

(4) The Federal Highway Administration's (FHWA) Freight Planning Capacity Building Workshop website's address is:

<http://www.fhwa.dot.gov/freightplanning/freightworkshop.htm#bestEng>.

The following passage has been taken from that website: States and MPOs looking to develop and implement specific freight planning activities can benefit tremendously from understanding lessons learned and critical success factors from colleagues that have already undertaken similar endeavors. The Freight Planning Capacity Building Workshop provided an opportunity for veterans of freight planning to share critical lessons learned with those that may be new to freight planning.

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4. Regional Transportation Advisory Council Freight Committee Draft Statewide Transportation Plan Comments
5. Massachusetts Transportation Facts 2004
6. 2004 Congestion Management System (CMS) Report
7. Massport Charlestown Haul Road Study
8. Boston Region MPO 2004-2025 Plan
9. American Association of State Highway and Transportation Officials (AASHTO) 2003 Freight Bottom Line Report
10. Massport Conley Terminal website: http://www.massport.com/ports/conle_overv.html
11. Massport Air Cargo website at <http://www.massport.com/business/airca.html>.
12. MassHighway website
13. Executive Office of Transportation website
14. Seaport Advisory Council website at <http://www.mass.gov/seaports/>
15. CSX Railroad website
16. American Journal of Transportation (AJOT)
17. Various state DOT websites
18. Various MPO websites
19. Federal Highway Administration (FHWA) Freight Training Seminar book
20. USC Title 49, Subtitle IV, Part A, Chapter 111, Subchapter I
21. Massachusetts Motor Transportation Association (MMTA) website
22. Roads and Bridges magazine, 11/16/05, Vol. 3, Issue 48
23. King County (Seattle, WA) website for arterials
24. <http://www.fmcsa.dot.gov/facts-research/research-technology/publications/lane-departure-warning-systems.htm> for Lane Departure Warning Systems (LDWS)
25. Surface Transportation Board website at <http://www.stb.dot.gov/>
26. For Note (1): U.S. EPA Federal Register Environmental Documents website at <http://www.epa.gov/fedrgstr/EPA-IMPACT/2004/August/Day-04/i17641.htm>.
27. Boston Globe, 02/03/06, Page E1, Steve Bailey's Boston Sampler Column, Last Paragraph, "Neighborhood News" on Columbus Center. Used in Air Freight, Issues, Development near Airports.
28. Federal Motor Carrier Safety Administration (FMCSA) website at <http://www.fmcsa.dot.gov/rules-regulations/topics/hos/hos-2005.htm> for Truck Freight, Issues, Hours of Service.
29. Association of American Railroads website at for Massachusetts 2004 rail freight statistics in 2nd paragraph under Table 1.
30. American Trucking Association web site www.truckline.com
31. American Trucking Research Institute (part of ATA) website www.atri-online.org
32. Dredging News Online 10/22/04 article on Panama Canal widening article at <http://www.sandandgravel.com/news/article.asp?v1=4802>

33. For Air – Issues – Crowded Skies: Boston Globe, 02/09/06, Page A20, Mac Daniel
34. AASHTO Journal, February 17, 2006: Rail, truckers share common freight concerns
35. http://safety.fhwa.dot.gov/roadway_dept/docs/lanedeparture/index.htm#_Toc99253217: For lane departure crash statistics in Truck Freight, Issues, Safety section
36. U.S. Department of Homeland Security Customs and Border Protection website at <http://www.cbp.gov/> for definition of Customs District
37. National Highway System discussion in Truck Major Interstate and Highway Routes in Massachusetts information from <http://www.fhwa.dot.gov/hep10/nhs/>.
38. American Association of Port Authorities / Freight Stakeholders Coalition website for discussion of common user facilities found on Page 37: http://www.aapa-ports.org/govrelations/freight_stakehldrs.htm
39. Federal Highway Administration (FHWA) website
40. September 2001 CTPS “Regional Truck Study”
41. “A Framework for Thinking - A Plan for Action”, the Draft 20-Year Massachusetts Statewide Transportation Plan
42. Regional Transportation Advisory Council Freight Committee Draft Statewide Transportation Plan Comments
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44. 2004 Congestion Management System (CMS) Report
45. Massport Charlestown Haul Road Study
46. Boston Region MPO 2004-2025 Plan
47. American Association of State Highway and Transportation Officials (AASHTO) 2003 Freight Bottom Line Report
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50. MassHighway website
51. Executive Office of Transportation website
52. Seaport Advisory Council website at <http://www.mass.gov/seaports/>
53. CSX Railroad website
54. American Journal of Transportation (AJoT)
55. Various state DOT websites
56. Various MPO websites
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58. USC Title 49, Subtitle IV, Part A, Chapter 111, Subchapter I
59. Massachusetts Motor Transportation Association (MMTA) website
60. Roads and Bridges magazine, 11/16/05, Vol. 3, Issue 48
61. King County (Seattle, WA) website for arterials
62. <http://www.fmcsa.dot.gov/facts-research/research-technology/publications/lane-departure-warning-systems.htm> for Lane Departure Warning Systems (LDWS)
63. Surface Transportation Board website at <http://www.stb.dot.gov/>
64. For Note (1): U.S. EPA Federal Register Environmental Documents website at <http://www.epa.gov/fedrgstr/EPA-IMPACT/2004/August/Day-04/i17641.htm>.
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69. American Trucking Research Institute (part of ATA) website www.atri-online.org
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71. For Air – Issues – Crowded Skies: Boston Globe, 02/09/06, Page A20, Mac Daniel
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74. U.S. Department of Homeland Security Customs and Border Protection website at <http://www.cbp.gov/> for definition of Customs District
75. National Highway System discussion in Truck Major Interstate and Highway Routes in Massachusetts information from <http://www.fhwa.dot.gov/hep10/nhs/>.
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APPENDIX 1

Stakeholder Interviewees List

GOVERNMENT (owners)

1. Richard Garver, Deputy Director, Boston Redevelopment Authority

MARITIME and GOVERNMENT (owners, operators, shippers, receivers, & transporters)

2. Lynn Vikesland, Maritime Market Research Manager, Massport
3. Nicholas C. Billows, Deputy Port Director, Sales & Marketing, Massport
4. Kristin Decas, Deputy Director of Port Development, Program Manager, and Director of Railroad Operations, Seaport Advisory Council
5. Richard S. Armstrong, Director of Port Development and Executive Secretary, Seaport Advisory Council. Mr. Armstrong also serves as the Chair of both the South and North Port Associations and the Short Sea Shipping Committee of the I-95 Corridor Coalition and is the past Chair of the Cape Cod Commission.

RAIL (owners, operators, transporters)

6. Maurice O'Connell, Director of Public Affairs, CSX Railroad
7. David Armstrong Fink, Executive Vice President, Pam Am Railways (formerly Guilford Rail Systems)
8. Katie Potter, Legal Counsel, Pam Am Railways
9. Bernard (Bernie) M. Reagan, Senior Vice President, Marketing and Sales, Bay Colony Railroad
10. Anna M. Barry, Director of Railroad Operations, MBTA
11. Kristin Decas, Deputy Director of Port Development, Program Manager, and Director of Railroad Operations, Seaport Advisory Council

TRUCKING COMPANY OWNERS ASSOCIATION / LOBBYIST (owners, operators, transporters)

12. Anne Lynch, Executive Director, Massachusetts Motor Transportation Association

FREIGHT FORWARDERS / CUSTOMS HOUSE BROKERS (owners, operators, shippers, & receivers)

13. Stuart Eldridge, Chief Broker, Dolliff & Co., Inc.

INTERMODAL FREIGHT FACILITIES OPERATORS

14. Neil F. Fitzpatrick, President, Boston Freight Terminals @ The International Cargo Center of New England
15. Ron Klempner, Managing Principal, New England Transrail

APPENDIX 2

Posted Bridges in Massachusetts

BIN	BDEPT	Feature Under	Facility on Bridge Structure	Additional Location Description	Town Name
9MP	A01002	WATER SHUMATUSCASCANT RIV	ST 18 BEDFORD ST	.1 MI NO OF SHAW AVENUE	Abington
3M5	A03003	WATER ACUSHNET RIVER	HWY HAMLIN RD	.6 MI E OF MIDDLE RD	Acushnet
00A	A04002	WATER DRY BROOK	HWY LEONARD ST	.1 MI SE OF RTE 8	Adams
02Y	A04025	WATER TOPHET BROOK	HWY EAST RD	E OF RT116 VIA BUCKLIN RD	Adams
032	A04027	WATER MILLER BROOK	HWY E HOOSAC ST	E OF EAST RD @ WALLING RD	Adams
0W6	A05001	COMB AMTRAK & CONN RIV	US 5 (S END BR)	SOUTH END BRIDGE	Agawam
033	A06002	WATER SEEKONK BROOK	HWY EAST RD	NE OF NW GT BRNTN RD&WEST	Alford
034	A06003	WATER SEEKONK BROOK	HWY ALFORD RD	SOUTH BRDR@GREAT BARRINTN	Alford
035	A06004	WATER SCRIBNER BROOK	HWY WEST RD	1M S OF WEST STOCKBRIDGE	Alford
2QX	A07008	RR BMRR (ABANDONED)	HWY OAK ST	AT RAILROAD	Amesbury
2Y9	A07010	WATER MERRIMACK RIVER	HWY MAIN ST	AT MERRIMAC RIVER	Amesbury
2Y8	A07014	WATER MERRIMACK RIVER	HWY MAIN ST	AT MERRIMAC RIVER	Amesbury
0L2	A08013	WATER SWAMP BK(ESTMN BK)	HWY MEADOW ST	.3 MI E HADLEY	Amherst
331	A09011	RR MBTA/BMRR	ST 28 N MAIN ST	.4 MI N ANDOVER CENTER	Andover
2DN	A10012	ST 2	ST 60 PLEASANT ST	RT 60 AT RT 2	Arlington
2DM	A10021	HWY LAKE ST	ST 2	0.5 MI E RT2 & RT60	Arlington
1K4	A11001	WATER BR MILLERS RIVER	HWY SHERBERT RD	0.2M S OF SNST LK BY WNCH	Ashburnham
25F	A12010	WATER WILLARD BROOK	HWY HOSMER RD	150 FT SOUTH OF RTE 119	Ashby
AEP	A12022	WATER PEARL HILL BROOK	HWY WARES RD	.5 MI NRTH OF FTCHBRG T.L	Ashby
0K4	A13010	WATER SWIFT RIVER	ST116 PLAINFLD RD	250' W JCT SPRUCE COR RD	Ashfield
0FK	A13015	WATER BEAR RIVER	HWY BELDNGVIL RD	BETW BLDNGVL RD&BPTST COR	Ashfield
0EF	A13024	WATER CREAMERY BROOK	HWY WILLIAMSBURG	1.5 MI W CONWAY	Ashfield
25H	A14004	WATER SUDBURY RIVER	HWY CONCORD ST	.2 MI NORTH OF FRONT ST	Ashland
7NW	A14015	WATER INDIAN BROOK	HWY CROSS ST	1.2 MI.EST.OF ST-85	Ashland
18R	A15006	WATER MILLERS RIVER	ST 2 A/S MAIN ST	WEST END OF DWNTWN MAIN S	Athol
16F	A15007	WATER MILLERS RIVER	HWY EXCHANGE ST	0.3M N OF S. MAIN ST.	Athol
16G	A15008	WATER MILLERS RIVER	HWY CRESCENT ST	CRECENT ST/MILLERS RIVER	Athol
18G	A15016	WATER E BR TULLY RIVER	HWY PINEDALE AVE	ATHOL/ORANGE TOWN LINE	Athol
18B	A15017	WATER E BR TULLY RIVER	HWY LOGAN RD	0.1MI W. OF RTE. 32	Athol
3YU	A16032	RR AMTRAK/MBTA	ST 1 A/NEWPRT AV	.2 MI SO I 95 INTERCHANGE	Attleboro
9FA	A16074	WATER SEVEN MILE RIVER	HWY PITAS ST	.3 MI E OF NEWPRT AV 1 A	Attleboro
1B4	A17003	WATER KETTLE BROOK	HWY OXFORD ST	AT CORNER OF ROCHDALE ST	Auburn
7RR	A19006	WATER CANAL	HWY PRIVATE RD		Ayer
41F	B01001	WATER BUMPS RIVER	HWY S MAIN ST	AT BUMPS RIVER	Barnstable
435	B01003	WATER WEST-NORTH BAY	HWY BRIDGE ST	2.1 MI S OF RT 28	Barnstable
46G	B01019	ST132 IYANOUGH RD	US 6 WB/MD CP HWY	1. MI E OF OAK ST	Barnstable

46H	B01019	ST132 IYANOUGH RD	US 6 EB/MD CP HWY	1 M E OF OAK ST	Barnstable
19X	B02007	WATER WARE RIVER	ST 32 S BARRE RD	ST 32/ WARE RIVER	Barre
19W	B02008	WATER WARE CANAL	ST 32 NW BRNTRE RD	0.6 MI N OF JCT 67	Barre
15J	B02009	WATER WARE CANAL	ST 32 MAIN ST	ST32 NW BRNTRE/WARE CANAL	Barre
0AM	B03008	WATER WALKER BROOK	US 20 JACOBS LDR	0.5 MI W OF CHESTER TL	Becket
0AP	B03011	WATER WALKER BROOK	US 20 JACOBS LDR	1.7 MI W OF CHESTER TL	Becket
0BA	B03019	WATER YOKUM POND BROOK	ST 8 MAIN ST	4.9 MI N OF US 20	Becket
0BB	B03023	WATER YOKUM POND BROOK	ST 8 MAIN ST	6.0 MI N OF US 20	Becket
0BD	B03025	WATER SHAKER MILL BROOK	ST 8 BONIE RIG HL	6.5 MI N OF US 20	Becket
037	B03036	WATER W BR WESTFLD RIV	HWY BANCROFT RD	@ MIDDLEFIELD BDR NR RR	Becket
4XF	B03037	WATER CUSHMAN BROOK	US 20 @ STA 33+26		Becket
038	B03039	WATER W BR WESTFIELD RIV	HWY MAPLE ST	E OF RT8 NR WASHINGTON	Becket
2K5	B04001	WATER SHAWSHEEN RIVER	ST 4 GREAT RD	1.25 MI NW RT 128 & BDFRD	Bedford
2K4	B04002	WATER CONCORD RIVER	ST225 BEDFORD RD	AT TWNLN BEDFORD-CARLISLE	Bedford
2B6	B04008	WATER SHAWSHEEN RIVER	HWY PAGE RD	.1 MI E OF RTE 62	Bedford
0PF	B05005	WATER JABISH BROOK	HWY RIVER ST	0.5M W OF RT181 NEAR PLMR	Belchertown
0PE	B05006	WATER JABISH BROOK	HWY BARDWELL ST	0.5M W OF RT181 NEAR PLMR	Belchertown
0UT	B05027	WATER SWIFT RIVER	ST 9 WARE RD	.3 M W JCT RIVER RD.	Belchertown
0PG	B05034	WATER JABISH BROOK	HWY ALDRICH ST	0.5MI W OF RT181	Belchertown
2A9	B06001	WATER CHARLES RIVER	HWY PEARL ST	.25 MI SOUTH OF ST 126	Bellingham
2AW	B06011	RR CSX (ABANDONED)	ST126 S MAIN ST	.1 MI.S OF ELM ST.	Bellingham
3J1	B08001	WATER TAUNTON RIVER	HWY ELM ST	OVER TAUNTON AT DIGHTON	Berkley
3WQ	B08003	ST 24	HWY PADEFORD ST	E OF PINE ST	Berkley
1JJ	B09002	WATER NORTH BROOK	HWY LINDEN ST.	AT JCT OF ST-62 +S.STREET	Berlin
1E8	B09003	WATER NORTH BROOK	HWY SOUTH ST	.85 MI NW OF WHITNEY ROT	Berlin
1JM	B09006	WATER ASSABET RIVER	HWY BRIDGE RD	.1MI. STH. OF RIVER RD.W.	Berlin
1JH	B09011	WATER NORTH BROOK	HWY PLEASANT ST	0.2 MI. S. OF SOUTH ST.	Berlin
0U3	B10004	WATER SHATTUCK BROOK	US 5 BRATLBORO RD	.3 M S JCT KEETS BROOK RD	Bernardston
0PK	B10007	WATER FALLS RIVER	HWY HOE SHOP RD	E OF RT91 @ GILL LINE	Bernardston
324	B11002	RR MBTA	HWY SCHOOL ST	.1 MI WEST ST 1A	Beverly
307	B11005	WATER DANVERS RIVER	HWY KERNWOOD AVE	AT DANVERS RIVER	Beverly
308	B11005	WATER DANVERS RIVER	HWY KERNWOOD AVE	AT DANVERS RIVER	Beverly
2BB	B12006	WATER CONCORD RIVER	HWY FAULKNER ST	.75 MI E OF RTE 3A	Billerica
2DF	B12009	WATER SHAWSHEEN RIVER	ST 3 A/BOSTON RD	0.25 MI E RT3A/ALLEN RD	Billerica
2MR	B12011	RR MBTA/BMRR	HWY TOWN FARM LN	1 MI S RT 3A & WOBURN ST	Billerica
23E	B13002	COMB BLCKSTN CNL & PWRR	ST122 MAIN ST	AT CORNER OF BUTLER ST.	Blackstone
202	B13004	WATER BLACKSTONE RIVER	ST122 MAIN ST	1.2MI. N. OF R.I. LINE	Blackstone
1EC	B13011	WATER BLACKSTONE RIVER	HWY ST PAUL ST	.4 MI NE OF RHODE ISLAND	Blackstone
03E	B14007	WATER WHEELER BROOK	HWY BLAIR RD	0.2MI S OF N.BLAND. RD	Blandford
381	B16003	WATER NEPONSET RIVER	HWY ADAMS ST	OVER NEPONSET RIV AT MILT	Boston
382	B16004	WATER BELLE ISLE INLET	ST145 SARATOGA ST	AT WINTHROP TOWN LINE	Boston
4EM	B16013	WATER CHARLES RIVER	ST 28 CHAS R DM RD	.1 MI NW OF NASHUA ST	Boston
3A3	B16022	WATER NEPONSET RIVER	HWY GRANITE AVE	MILTON TOWN LINE	Boston
4F9	B16027	WATER NEPONSET RIVER	HWY NEPNST V PKY	.1 MI E OF TRUMAN HWY	Boston
4VQ	B16147	TR RED HSL	HWY MEDWAY ST	0.3 MI FROM LOWER MILLS	Boston
3HJ	B16172	COMB MBTA & ACCESS RD	HWY SPRAGUE ST	.25 MI E. OF WOLCOTT SQ.	Boston
3GQ	B16204	COMB HAUL RD & CSX	HWY SILVER ST	1200 M SW OF D ST	Boston
3GU	B16209	COMB HAUL RD & CSX	HWY W SECOND ST	.8 KM SW D ST	Boston

393	B16217	ST203 MORTON ST	HWY AMER LEG HWY	5.3 KM W OF RT 93	Boston
4FM	B16257	HWY EMBKNT EB&WB ON RP	HWY EMBKT WB OFF	CHARLES CIRCLE STORROW D	Boston
4EL	B16365	ST 2 /COMM AV & BEACON	HWY BOWKER INT	.2 MI S OF ST RTE 2A	Boston
4FF	B16365	HWY KENMORE OFF RMP	HWY BWKR SB ONRP	.2 MI S OF ST RTE 2A	Boston
4FG	B16365	WATER MUDDY RIVER	HWY BWKR SB ONRP	.2 MI S OF ST RTE 2A	Boston
4FH	B16365	WATER MUDDY RIVER	HWY BWKR NB OFRP	.2 MI S OF ST RTE 2A	Boston
4FJ	B16365	HWY STRRW DR WB ON RMP	HWY BWKR NB OFRP	.2 MI S OF ST RTE 2A	Boston
4F7	B16390	WATER NEPONSET RIVER	ST 3 A/MORRSY BLV	.2 MI E OF I 93	Boston
4FR	B16390	ST 3 A/HNCK NB&MBTA&RED	HWY MORRSSEY BLV	.2 MI E OF I 93	Boston
4FU	B16390	COMB SAGAMORE ST & REDS	HWY MORRSY OFFRP	.2 MI E OF I 93	Boston
8NG	B16410	COMB BMRR & RELIEF	TR ORANGE LINE		Boston
41H	B17001	WATER POCASSET RIVER	HWY SHORE RD	.15 MI N OF LANDING RD	Bourne
41J	B17002	WATER BACK RIVER	HWY SHORE RD	2 MI SW OF BOURNE BRIDGE	Bourne
4BJ	B17006	RR BAY COLONY RR	HWY SHORE RD	.5 MI N OF LANDING RD	Bourne
9PE	B17022	WATER BUZZARDS BAY	HWY TOBY ISL RD		Bourne
42K	B23005	WATER TAUNTON RIVER	HWY SUMMER ST	.3 M NORTH OF RIVER ST	Bridgewater
44K	B23012	WATER TOWN RIVER	HWY HAYWARD ST	1 MI E OF RTE 18	Bridgewater
16P	B24012	WATER QUABOAG RIVER	HWY KING'S BRIDG	1MI S OF JCT I90&RT67	Brimfield
16Q	B24014	WATER BLODGETT MILL BRK	HWY WASHINGTON RD	0.1 MI S OF I-90	Brimfield
16Y	B24038	WATER BOTTLE BROOK	HWY DNHN PLMR RD	1MI N OF RT20 NEAR PALMER	Brimfield
42U	B25058	WATER SALISBURY BROOK	HWY BELMONT AVE	.1 MI SOUTH OF RTE 27	Brockton
454	B25060	WATER SALISBURY BROOK	HWY BARTLETT ST	100FT N OF WARREN AVE	Brockton
1B7	B26002	WATER QUABOAG RIVER	ST148 FISKDALE RD	1.7 MI W EAST BROOKFIELD	Brookfield
0FT	B28010	WATER CLESSON BROOK	HWY CLESSN BK RD	W OF RT112 @4CORNERS	Buckland
0FR	B28013	WATER CLESSON BROOK	HWY OLD E HAWLEY	W OF RT112 0.5M N OF ASFD	Buckland
0KU	B28022	WATER DEERFIELD RIVER	HWY BRIDGE ST	AT BUCKLAND-SHELBRNE T.L.	Buckland
82L	B29013	WATER VINE BROOK	HWY TERR HALL AV		Burlington
3FW	C01013	RR MBTA/BMRR	HWY WALDEN ST	2.1 KM S OF JCT SR2A&16	Cambridge
4DQ	C01023	ST 3 MEMORIAL DR	ST 2 A/MASS AVE	N END HARVARD BR	Cambridge
8KV	C02012	WATER MASSAPOAG BROOK	HWY WASHINGTON ST	.8 KM. NO. OF RTE. 27	Canton
436	C04004	WATER WEWEANTIC RIVER	HWY ROCHESTER RD	MIDDLEBORO/CARVER LINE	Carver
0JE	C05011	WATER MILL BROOK	ST 2	.1 M W JCT ST 8A NO.	Charlemont
0JF	C05012	WATER DEERFIELD RIVER	ST 2	AT JCT ZOAR RD.	Charlemont
5D6	C05015	WATER AVERY BROOK	ST 2 @ STA 454	1000 FT WEST OF AVERY RD	Charlemont
0G5	C05036	WATER HARTWELL BROOK	HWY MOUNTAIN RD	SW OF HEATH BORDER	Charlemont
0G3	C05037	WATER WILDER BROOK	HWY W OXBOW RD	BETWN HEATH & BUCKLAND	Charlemont
AC5	C0505T	WATER MILL BROOK	ST 8 A/N HEATH RD	.25 MI N OF RTE 2	Charlemont
1F6	C06003	WATER LITTLE RIVER	HWY GLENMERE RD	0.3MI N OF RT20 NEAR AUBN	Charlton
1Y8	C06018	WATER ASHWORTH BROOK	ST169 SOUTHBRDG RD	.5 MI.STH OF U.S.20	Charlton
2MY	C08003	COMB BMRR & MOORES CNL	ST 3 A/PRNCETN ST	1.25 MI N DRUM HILL	Chelmsford
2CT	C08022	WATER CANAL	HWY MEADOWBRK RD	.1 MI S OF RT 3	Chelmsford
2LQ	C08036	I 495	HWY WESTFORD ST	0.75 MI W RT 110	Chelmsford

03G	C10002	WATER DRY BROOK	HWY SAND MILL RD	SE OF JCT RT116&WELLS RD	Cheshire
03K	C10007	WATER HOOSIC RIVER	HWY HARBOR RD	E OF RT8 NR ADAMS	Cheshire
03N	C11004	WATER WALKER BROOK	HWY HAMPDEN ST	S OF RT 20 NEAR BECKET	Chester
03R	C11020	WATER M BR WESTFIELD RIV	HWY GEO MILLR RD	NEAR MDLFLD/WRTHNGTN LINE	Chester
03V	C11023	WATER M BR WESTFIELD RIV	HWY SMITH RD	2M SE OF MDLFD/WTNTN LINE	Chester
03W	C11024	WATER M BR WESTFIELD RIV	HWY KINNE BK RD	NEAR DAYVILLE DAM	Chester
03Y	C11026	WATER W BR WESTFIELD RIV	HWY OLD STATE HW	N OF RT20 BEYOND RR XING	Chester
4YB	C11033	WATER BR WALKER BROOK	US 20 W MAIN ST		Chester
00R	C11045	WATER WALKER BROOK	HWY BLANDFORD RD	.5 MI S OF RTE 20	Chester
0GD	C12009	WATER W BR WESTFIELD RIV	HWY IRELAND ST	.2 MI S OF JCT ST143	Chesterfield
12H	C13008	WATER CHICOPEE RIVER	ST116 SPRNGFLD ST	0.5M S JCT I-90	Chicopee
122	C13011	WATER CHICOPEE RIVER	ST141 MONTGOMRY ST	JCT ST 33	Chicopee
13R	C13012	COMB CONN RIV & PVRR	ST116 ST141/CABOT	AT CHICOPEE-HOLYOKE T.L.	Chicopee
041	C15002	WATER HUDSON BROOK	HWY MIDDLE RD	BTWN CROSS RD& WOOD RD	Clarksburg
042	C15003	WATER HUDSON BROOK	HWY CROSS RD	BTWN MTN VIEW DR&MIDDL RD	Clarksburg
1F9	C16011	RR BMRR (ABANDONED)	HWY CLAMSHELL RD	0.3 MI. E. OF ST. 70	Clinton
42G	C17002	WATER LITTLE HARBOR INLT	HWY ATLANTIC AVE	.09 MI N OF BEECH ST	Cohasset
44C	C17005	WATER BOUND BROOK	HWY MORD LINC RD	SCITUATE/COHASSET LINE	Cohasset
0EY	C18008	WATER NORTH RIVER	HWY ADAMSVLLE RD	INT. 112 & ADAMSVILLE RD	Colrain
0KL	C18012	WATER NORTH RIVER	ST112 MAIN ST	.2 M N SHELBURNE T.L.	Colrain
0GX	C18016	WATER W BR NORTH RIVER	HWY HEATH RD	W OF ADAMSVILLE RD	Colrain
0GW	C18019	WATER W BR NORTH RIVER	HWY WH ARCHB RD	W OF ADMSVL RD NR HLLMN	Colrain
0GY	C18020	WATER W BR NORTH RIVER	HWY HEATH RD	W OF ADAMSVILLE RD	Colrain
0KQ	C18028	WATER E BR NORTH RIVER	ST112 JCKSNVLE RD	AT JCT RIVER ST.	Colrain
0GG	C18037	WATER TAYLOR BROOK	HWY HEATH RD	BY HTH BDR 1.5M-N OF CMNT	Colrain
0GN	C18038	WATER TAYLOR BROOK	HWY CATAMNT HILL	S OF HTH RD S OF ADAMSVLL	Colrain
2KJ	C19004	WATER SUDBURY RIVER	ST 62/ST2A/MAIN	1.0 KM NE RT 2	Concord
2CW	C19013	WATER CONCORD RIVER	HWY MONUMENT ST	2.9 KM N OF RT 2	Concord
2GR	C19018	WATER NASHOBA BROOK	ST 2	0.5 MI NW RT 2 ROTARY	Concord
2CV	C19019	WATER ASSABET RIVER	HWY PINE ST	1.6 KM S OF RT 2 & 2A	Concord
0F3	C20001	WATER CHAPEL BROOK	HWY MAIN POLAND	2.3 M S OF RTE 116	Conway
0H5	C20014	WATER SOUTH RIVER	HWY REEDS BRG RD	1.5M S OF SHLBN@BDWLLS RD	Conway
0H6	C20017	WATER DEERFIELD RIVER	HWY BRDWL FER RD	@ SHELBURNE BORDER	Conway
0H1	C20019	WATER BEAR RIVER	HWY S SHIRKSH RD	0.5M E OF ASHFD NR TMSN R	Conway
0H4	C20026	WATER CHAPEL BROOK	HWY MN POLAND RD	0.5M E OF ASHFD N OF FRST	Conway
0H8	C21006	WATER WESTFIELD BROOK	HWY RIVER RD	S OF RT9 NEAR WINDSOR	Cummington
0HC	C21016	WATER MEADOW BROOK	HWY STAGE RD	1M N RTE 9 NR PLNFLD	Cummington
00W	D01001	WATER E BR HOUSATONIC R	HWY SOUTH ST.	.3 MI S OF RTE 9	Dalton
00V	D01004	WATER E BR HOUSATONIC R	HWY ORCHARD RD	.5 MI S OF RTE 8A	Dalton
0BE	D01007	WATER E BR HOUSATONIC R	ST 8 HINSDALE RD	0.3 MI N OF HINSDALE TL	Dalton
3J4	D04002	WATER APPONAGANSETT RIV	HWY BRIDGE ST.	1.6 MI E OF TUCKER RD	Dartmouth
94B	D04007	WATER NOQUOCHOKE OTLT	US 6 STATE RD	100 FT. W.OF WESTPORT RIV	Dartmouth
3J6	D04008	WATER SW BR APPONAGANSET	HWY GULF RD	1.1 MI E OF TUCKER RD	Dartmouth
94F	D04010	WATER TURNER POND	HWY OLD FALL RIV	.3 MI.N.OF NEW PLAIN. RD.	Dartmouth
94G	D04011	WATER SHINGLE ISL RIVER	HWY OLD FALL RIV	.8 MI EAST OF REED RD	Dartmouth
94C	D04014	WATER SHINGLE ISL RIVER	I 195	.5 MI.EAST OF REED ROAD	Dartmouth
33K	D05003	WATER GREAT DITCH	HWY NEEDHAM ST	.8 KM E OF RTE 128	Dedham

33H	D05005	WATER CHARLES RIVER	HWY AMES ST	.8 KM SE OF RTE 109	Dedham
33J	D05010	WATER MOTHER BROOK	HWY BUSSEY ST	@ INTERSECTION CURVE ST.	Dedham
34E	D05030	HWY HARRIS ST	HWY PROVDNCE HWY	.08 KM. NO. OF ST135	Dedham
0PP	D06001	WATER DEERFIELD RIVER	HWY W DRFLD UPPR	W OF RT91 & S OF RR	Deerfield
13X	D06004	RR BMRR	HWY MAIN ST	.3 MI E JCT ST5 & N MN	Deerfield
41N	D07001	WATER SWAN POND RIVER	HWY UPPER COUNTY	.9 MI W OF RTE 28	Dennis
41M	D07002	WATER SWAN POND RIVER	HWY LOWER COUNTY	.1 MI E OF SWAN POND RD	Dennis
41L	D07005	WATER BASS RIVER	HWY Highbank RD	AT BASS RIVER	Dennis
46N	D07012	WATER BASS RIVER	US 6 EB/MD CP HWY	AT DENNIS YARMOUTH TL	Dennis
3L9	D08002	WATER MUDDY COVE BROOK	HWY PLEASANT ST	AT INT OF MUDDY COVE LN	Dighton
3J8	D08013	WATER THREE MILE RIVER	HWY OLD SMRST AV	JUST W OF RTE 138	Dighton
1BC	D09003	WATER MUMFORD RIVER	HWY MECHANIC ST	.1 MI N OF RTE 16	Douglas
6NK	D09014	WATER TINKERVILLE BROOK	HWY HEMLOCK ST	.3MI. S.W. OF ST-96	Douglas
1FA	D09019	WATER MUMFORD RIVER	HWY POTTER RD	.2 MI.EST.OFMANCHAUG ST.	Douglas
6NN	D09028	WATER WHITIN RES OUT	HWY NW MAIN ST	114421532	Douglas
6NQ	D09030	WATER WHITIN RES OUT	HWY MUMFORD ST		Douglas
33M	D10004	WATER CHARLES RIVER	HWY WILLOW ST	1.1 KM N OF DEDHAM ST	Dover
4D8	D10007	WATER CHARLES RIVER	HWY CHENEY BRG	0.5 MILES N. OF BRIDGE ST	Dover
1BH	D12001	WATER FRENCH RIVER	HWY PERRYVILLE RD	.2MI.EAST OF ST.12	Dudley
1BD	D12002	WATER CANAL	HWY PERRYVILLE RD	.1MI. E. OF ST-12	Dudley
21P	D12009	RR PWRR	HWY CARPENTER RD	.3 MI. W. OF ST-12	Dudley
1FE	D12010	WATER QUINEBAUG RIVER	HWY W DUDLEY RD	.2 MI. E. OF ST- 131	Dudley
1FG	D12022	WATER FRENCH RIVER	HWY TRACY COURT	.1 MI.NORTH OF ST-12	Dudley
1FH	D12023	WATER FRENCH RIVER	HWY PETER ST	300 FEET WEST OF ROUTE 12	Dudley
1BJ	D12027	OTHER MILL RACE (DRY)	HWY BRANDON RD	.3MI. EST. OF ST-12	Dudley
438	D14003	WATER DUXBURY BAY	HWY POWDER PT AV	1 MI E OF WASHINGTON ST	Duxbury
41Q	E01001	WATER MATFIELD RIVER	HWY SPRING ST	.55 MI SW RTE 18	E. Brdgewtr.
9UJ	E01008	WATER BROOK	HWY PLEASANT ST	150 FT SOUTH OF E01007	E. Brdgewtr.
1FJ	E02001	WATER SOUTH POND INLET	HWY S POND RD	.5 MI.W.OF STURBRIDGE RD.	E. Brookfield
1BK	E02002	WATER E BROOKFIELD RIVER	HWY SHORE RD	.15 MI E OF BRKFIELD LN	E. Brookfield
6P1	E02008	WATER E BROOKFIELD RIVER	ST 9 MAIN ST	010583 115423536	E. Brookfield
6P5	E02011	WATER GREAT BROOK	HWY PODUNK ST	114421532	E. Brookfield
OLA	E05005	WATER MANHAN RIVER	HWY GLENDALE ST	.7 MI W OF RTE 10	Easthampton
OL8	E05010	WATER N BR MANHAN RIVER	HWY TORREY ST	AT SOUTHAMPTON LINE	Easthampton
AH2	E06030	WATER QUESET BROOK	HWY CENTRAL ST	.01 M WEST OF RTE 138	Easton
4A1	E07001	WATER SENGEKONTACKET INL	HWY OAK BLFFS RD	AT EDGARTWN OAK BLUFFS TL	Edgartown
0CK	E08005	WATER GUILDERS BROOK	ST 41 UNDER MTN RD	2.0 MI N OF SHEFFIELD TL	Egremont
0PV	E10005	WATER MILLERS RIVER	HWY PAPER MLL RD	@MONTAGUE BDR MILLRS FLLS	Erving
0LG	E10006	WATER MILLERS RIVER	HWY FARLEY RD	.05 MI E OF RTE 2	Erving
0PT	E10008	WATER MILLERS RIVER	HWY NORTH ST	0.2 MI S OF ERVNG CTR	Erving
3PJ	F01002	WATER ACUSHNET RIVER	US 6 (WEST BRG)	.7 MI W OF NBED C.L.	Fairhaven
3N2	F02001	WATER TAUNTON RIVER	US 6 BRIGHTMAN ST	AT SOMERSET T.L.	Fall River
408	F02018	RR CSX	HWY BRIGHTMAN ST	.2 W OF N.MAIN ST	Fall River
4BM	F03008	RR BCRR (ABANDONED)	HWY PALMER AVE	.1 M W OF RTE 28	Falmouth
43F	F03009	WATER W FALMOUTH HARBOR	HWY CHAPPAQUOIT	0.8 MI W OF RT 28	Falmouth
47P	F03016	WATER COONAMESSET RIVER	ST 28 E FALMTH HWY	3.5 M W OF MASHPEE TL	Falmouth

1JY	F04034	WATER PHILLIPS BROOK	HWY SANBORN ST	.1MI STH.OF ST.12	Fitchburg
1EG	F04042	WATER FLAG BROOK	HWY 5TH MASS TPK	.8 KM NO OF RTE 2	Fitchburg
04D	F05002	WATER COLD RIVER	HWY S COUNTY RD	1.7M E OF N.ADMS 1M N SAV	Florida
245	F07003	WATER SUDBURY RIVER	HWY WINTER ST	.6 M S OF RTE 9	Framingham
7P8	F07013	WATER COCHITUATE BROOK	HWY OLD CONN PTH	.1MI NORTH OF I-90	Framingham
29G	F07015	RR CSX/MBTA	HWY WINTER ST	.1MI.NTH.OF ST.135	Framingham
29H	F07016	RR CSX/MBTA	HWY FOUNTAIN ST	.1 MI.NTH.OF ST.135	Framingham
29J	F07018	RR CSX	HWY MT WAYTE AVE	.7MI. N. OF ST-135	Framingham
7P9	F07021	WATER BEAVER DAM BROOK	HWY BEAVER ST	120077 105408512	Framingham
7PA	F07022	WATER COCHITUATE BROOK	ST126 SCHOOL ST	120077 1194	Framingham
7JN	F07023	WATER RESERVOIR #1	HWY SALEM END RD		Framingham
7PC	F07026	WATER BEAVERDAM BROOK	HWY SECOND ST	120077 1194	Framingham
25N	F07029	WATER BEAVER DAM BROOK	HWY HERBERT ST	AT CORNER OF TRIPP ST.	Framingham
24B	F07030	WATER SUDBURY RIVER	HWY FRANKLIN ST	.4 MI S OF MAIN ST	Framingham
7PD	F07037	WATER BAITING BROOK	HWY WINTER ST		Framingham
24H	F07065	WATER SUDBURY RIVER	HWY WINTER ST	.6 MI S OF RTE 9	Framingham
2B1	F08005	RR MBTA/CSX	ST140 W CENTRAL ST	.9 MI W OF I 495	Franklin
9F1	F09016	OTHER WATER MAIN	ST140 NB @ STA21		Freetown
7K5	G01028	WATER OTTER RIVER	HWY RIVERSIDE RD		Gardner
0Q0	G04004	WATER FALLS RIVER	HWY BASCOM RD	ON GREENFIELD TL	Gill
2U8	G05017	WATER ANNISQUAM RIVER	ST128	AT ANNISQUAM RIVER	Gloucester
2U7	G05021	HWY CONCORD ST	ST128	.7 MI N ST133	Gloucester
0HD	G06004	WATER SWIFT RIVER	HWY SHAW RD	N OF RT9 CUMMINGTN BRDR	Goshen
1BN	G08005	WATER QUINSIGAMOND RIVER	HWY MILLBURY ST	.1 M W OF RTE 122	Grafton
1BU	G08007	WATER BLACKSTONE RIVER	HWY PLEASANT ST	1.3 MI SW OF RTE 140	Grafton
222	G08012	RR PWRR	HWY DEPOT ST	.3 MI W OF ST 122	Grafton
220	G08020	RR CSX	ST140 SHREWSBRY ST	.8MI. S. OF U.S.-20	Grafton
0Q3	G09001	WATER BACHELOR BROOK	HWY BURNETT ST	0.5M SE S.HADLEY MOODYCOR	Granby
0Q2	G09008	WATER BACHELOR BROOK	HWY NORTH ST	1 MI N OF RT202	Granby
0HG	G10006	WATER DICKINSON BROOK	HWY SODOM ST	0.1MI S OF RT57 NR STHWCK	Granville
04E	G11001	WATER WILLIAMS RIVER	HWY DIVISION ST	W OF RT41 VANDEUSENVILLE	Grt Barngtn.
04F	G11002	WATER HOUSATONIC RIVER	HWY DIVISION ST	BTWN RTS41&183 S OF RSNDL	Grt Barngtn.
04K	G11008	WATER HOUSATONIC RIVER	HWY BROOKSIDE RD	E OF RT7 1.3M N OF SHFLD	Grt Barngtn.
04M	G11012	WATER GREEN RIVER	HWY SEEKONK CRSS	1M N OF RT71 1M E OF EGMT	Grt Barngtn.
0LL	G12006	WATER GREEN RIVER	HWY NASHS_MLL RD	0.1 MI W OF CONWAY ST	Greenfield
0Q9	G12013	WATER GREEN RIVER	HWY MERIDIAN ST	AT JCT OF DFLD ST	Greenfield
5MA	G12015	WATER ALLEN BROOK	HWY PLAIN RD	0.35 M N. OF COLRAIN RD.	Greenfield
5MB	G12016	WATER PUNCH BROOK	HWY PLAIN RD	0.15 M N. OF MEADOW LA.	Greenfield
143	G12036	RR BMRR	HWY SILVER ST	.3 M E JCT CONWAY ST.	Greenfield
30E	G15001	WATER MERRIMACK RIVER	ST 97 /ST113/LNCLN	AT MERRIMAC RIVER	Groveland
43L	H02007	WATER WINNETUXET RIVER	HWY RIVER ST	1 MI NE OF MIDDLEBORO	Halifax
43K	H02008	WATER WINNETUXET RIVER	HWY SOUTH ST	.1 MI N OF FULLER ST	Halifax
2R5	H03002	WATER IPSWICH RIVER	HWY WINTHROP ST	@ IPWSICH TL = I-01-006	Hamilton
0QG	H04001	WATER SCANTIC RIVER	HWY MILL RD	0.5MI S ELONGMDW RD	Hampden
0QK	H04003	WATER SCANTIC RIVER	HWY CHAPIN RD	0.1M S OF MAIN ST@TWNHALL	Hampden
0QH	H04010	WATER TEMPLE BROOK	HWY SCANTIC RD	0.2M N OF ROCKADUNDEE RD	Hampden
0QE	H04011	WATER SCANTIC RIVER	HWY STAFFORD RD	0.2MI NW OF MONSON TL	Hampden
43M	H06001	WATER NORTH RIVER	HWY WASHINGTON ST	PEMBROKE-HANOVER TOWNLINE	Hanover

421	H06003	WATER INDIAN HEAD RIVER	HWY BROADWAY	AT HANSON LINE	Hanover
49K	H07001	WATER POOR MEADOW BROOK	ST 27 MAIN ST	0.25 M E OF E BRIDGWTR TL	Hanson
9JD	H07002	WATER SHUMATUSCACANT RIV	ST 14 WASHINGTON ST	.4 M E OF E. BRIDGEWATER	Hanson
18J	H08003	WATER WARE RIVER	HWY CREAMERY RD	SE OF RT32@NEW BRTREE BDR	Hardwick
18K	H08005	WATER MOOSE BROOK	HWY TAYLOR HL RD	1.5M NW OF RT32 NR BARRE	Hardwick
1A3	H08009	WATER MOOSE BROOK	HWY BARRE RD	.2 M NW JCT. ST. 32	Hardwick
1K6	H09001	WATER NASHUA RIVER	HWY STLL RIV DEP	.6 MI. WST.OF RTE. 110	Harvard
AH0	H09025	WATER NASHUA RIVER	HWY HOSPITAL RD	0.6MI. W. OF JACKSON RD.	Harvard
49V	H10013	US 6 MID CAPE HWY	ST124 PLSNT LK AVE	2.5 M W OF RTE 137	Harwich
9JF	H10015	WATER HERRING RIVER	HWY LOTHROP AVE		Harwich
OQP	H11005	WATER MILL RIVER	HWY CHESTNUT ST	AT JCT OF CIRCLE DR	Hatfield
13D	H11028	I 91	HWY CHESTNUT ST	300' E JCT ST 5&CHEST ST.	Hatfield
329	H12005	RR MBTA/BMRR	HWY FERRY RD	.1 MI N ST125	Haverhill
311	H12020	WATER MERRIMACK RIVER	HWY RKS VILG BRG	AT WEST NEWBURY MERRIMAC	Haverhill
OHP	H13001	WATER CHICKLEY RIVER	HWY SAVOY RD	W OF RT8A 0.1M E OF SAVOY	Hawley
0F9	H13007	WATER CHICKLEY RIVER	ST 8 A/W HWLEY RD	.2 MI S OF CHARLEMONT LIN	Hawley
0HR	H13010	WATER BOZRAH BROOK	HWY EAST RD	0.3M E OF E HLY RD NR CMT	Hawley
0FA	H14001	WATER MILL BROOK	ST 8 A/JCKSNVL ST	1.2 KM N OF CHARLEMONT LN	Heath
0HU	H14009	WATER BURLINGTON BROOK	HWY SADOGA RD	W OF RT 8A @ COLRAIN RD	Heath
0HW	H14014	WATER DAVENPORT BROOK	HWY COLRN BRK RD	0.3M W OF COLRAIN	Heath
47K	H15002	WATER BACK RIVER	ST 3 A/LINCOLN ST	AT HINGHAM WEYMOUTH TL	Hingham
04Y	H16006	WATER WINDSOR BROOK	HWY OLD WINDSOR	@WINDSOR BORDER	Hinsdale
013	H16021	WATER BENNETT BROOK	HWY MIDDLEFLD RD	.6 M E OF RTE 8	Hinsdale
1FU	H18011	WATER QUINAPOXET RIVER	HWY MILL ST	0.1 MI. W. RT. 31	Holden
7K7	H18024	WATER KENDALL RES OUTLT	HWY KENDALL RD		Holden
63T	H21009	WATER THIRD LEVEL CANAL	HWY APPLETON ST	070588 117427522	Holyoke
0LU	H21012	WATER SECOND LEVEL CANAL	HWY SARGEANT ST	.31 MI NW OF 3RD CANAL	Holyoke
0LV	H21013	WATER SECOND LEVEL CANAL	HWY CABOT ST	.4 MI NW OF 3RD CANAL	Holyoke
130	H21014	WATER SECOND LEVEL CANAL	ST141 APPLETON ST	N OF RACE ST.	Holyoke
126	H21018	WATER FIRST LEVEL CANAL	HWY LYMAN ST	AT JCT E COURT ST.	Holyoke
131	H21020	WATER FIRST LEVEL CANAL	ST141 APPLETON ST	N OF BIGELOW ST.	Holyoke
146	H21024	RR PVRR	HWY LWR WESTFLD	0.2 MI W OF US 5	Holyoke
22W	H23006	COMB CSX & SUDBURY RIV	HWY FRUIT ST	.7 MI EAST OF I - 495	Hopkinton
21B	H23009	I 495	HWY FRUIT ST	.2MI.STH.OF I-90	Hopkinton
1C0	H24004	WATER BURNSHIRT RIVER	HWY WLVL TEMP RD	1.4MI. S. OF TEMPLTN T.L	Hubbardston
6QF	H24017	WATER MASON BROOK	HWY HEALDVLE RD	.25 M WEST OF BRIGHAM ST.	Hubbardston
24K	H25004	WATER ASSABET RIVER	HWY HOUGHTON ST	.2MI. S. OF ST-62	Hudson
24L	H25008	WATER ASSABET RIVER	HWY COX ST	.5 MI NW OF RTE 62	Hudson
7PJ	H25014	WATER COX BROOK	HWY COX ST		Hudson
79C	H25015	WATER FORT MEADOW BROOK	HWY BROOK ST		Hudson
0CM	H27008	WATER POND BROOK	ST112 WORTHGTR RD	3.8 MI N OF JCT US20-112	Huntington
505	H27015	WATER POND BROOK	HWY SEARLES S RD	0.25 MI. NORTH OF RTE 66	Huntington
4BT	K01005	RR MBTA	HWY HOWLANDS LN	.125 M E OF RTE 3A	Kingston
3X6	L01010	ST140 NB	HWY HIGHLAND RD	1.2 MI NE OF COUNTY ST	Lakeville
20G	L02016	ST 2	HWY SHIRLEY RD	RT 2 STATION 135+00	Lancaster
052	L03009	WATER TOWN BROOK	HWY MINER RD	0.5M N OF PNTSC LK W OF 7	Lanesboro
053	L03010	WATER TOWN BROOK	HWY BRIDGE ST	1M N OF PNTSC LK W OF RT7	Lanesboro
ACE	L03013	WATER TOWN BROOK	HWY SCOTT RD	E OF RTE 7 NORTH OF TOWN	Lanesboro

2Q0	L04008	WATER SPICKET RIVER	HWY DAISY ST	.09 MI E ST28	Lawrence
2YE	L04013	WATER SPICKET RIVER	ST110 JACKSON ST	.4 MI N LAWRENCE CENTER	Lawrence
2PV	L04017	WATER SPICKET RIVER	HWY CANAL ST	JUST N OF NORTH CANAL	Lawrence
2PU	L04025	WATER SOUTH CANAL	HWY AMESBURY ST	JUST S OF MERRIMACK RIV	Lawrence
2YG	L04026	WATER SOUTH CANAL	ST 28 S BROADWAY	.1 MI S MERRIMAC RIVER	Lawrence
059	L05004	WATER POWDER MILL BROOK	HWY MEADOW ST	1M E OF STKBR 0.5M S R102	Lee
05C	L05014	WATER WASHNGTN MTN BROOK	HWY WASH MTN RD	BETW MILL ST&WOODLND RD	Lee
05K	L05034	WATER GREENWATER BROOK	HWY CHAPEL ST	ON RT20 BTWN WTR&SLVR STS	Lee
1G9	L06009	WATER KETTLE BROOK	HWY MCCARTHY AVE	S OF RT9 NEAR WORCESTER	Leicester
6R4	L06016	WATER KELLEY BROOK	HWY CHAPEL ST	063088 *POSTING VOTE	Leicester
6RB	L06039	WATER KELLY BROOK	HWY CHAPEL ST		Leicester
05M	L07006	WATER ROARING BROOK	HWY RORING BK RD	W OF WSHGTN BDR S OF LX R	Lenox
1CA	L08003	WATER N NASHUA RIVER	HWY MECHANIC ST	500 FEET WEST OF I-190	Leominster
1CE	L08009	WATER MONOOSNOC BROOK	HWY POND ST	200 FT EAST OF ELM STREET	Leominster
1CC	L08014	WATER MONOOSNOC BROOK	HWY WHITNEY ST	.4MI. N. OF MECHANIC ST.	Leominster
0QV	L09001	WATER DOOLITTLE BROOK	HWY TEEWDDLE HLL	0.2 MI W OF CSHMN RD	Leverett
0QR	L09003	WATER ROARING BROOK	HWY MILLERS RD	0.1 MI S. OF SHUTESBURY R	Leverett
0QQ	L09006	WATER SAWMILL RIVER	HWY DUDLEYVILLE	MOORES CORNER	Leverett
0QT	L09009	WATER SAWMILL RIVER	HWY OLD COKE KLN	NE OF HEMENWAY RD	Leverett
7Y6	L10006	WATER VINE BROOK	HWY NORTH ST		Lexington
7Y7	L10007	WATER VINE BROOK	HWY EAST ST		Lexington
7Y8	L12001	WATER CAMBRIDGE RESVR	HWY TRAPELO RD		Lincoln
26W	L13008	WATER BEAVER BROOK	ST119 GREAT RD	0.2 MI. WEST OF I 495	Littleton
28Y	L13021	I 495	HWY TAYLOR ST	0.25 MI S. ST. RTE 2	Littleton
2NB	L15004	RR BMRR	HWY MORTON ST	0.1 MI E LAWRENCE ST	Lowell
2BM	L15021	WATER MERRIMACK RIVER	HWY UNIVRSTY AVE	JUST S OF VFW HWY	Lowell
2BU	L15022	WATER NORTHERN CANAL	HWY SCHOOL ST	JUST S OF MERRIMACK RIV	Lowell
2BQ	L15031	WATER CONCORD RIVER	HWY LAWRENCE ST	JUST W OF CEMETARY	Lowell
2C2	L15045	WATER WESTERN CANAL	HWY MARKET ST	AT MICHALOPOULOS SQ	Lowell
2EL	L15058	WATER BEAVER BROOK	HWY VFW HWY	1.6 KM E UNVRSTY OF LWLL	Lowell
2BX	L15063	HWY THORNDIKE ST	ST 3 A/MIDDLESEX	AT THORNDIKE ST	Lowell
2BY	L15064	HWY THORNDIKE ST	ST110 APPLETON ST	AT THORNDIKE ST	Lowell
2M1	L15073	WATER RIVER MEADOW BROOK	HWY LINCOLN ST	0.25 MI N CONNCTR & PLAIN	Lowell
2M4	L15088	COMB BMRR & MERRIMACK R	HWY WOOD ST EXT	ROURKE BRIDGE	Lowell
0M6	L16003	WATER CHICOPEE RIVER	HWY MILLER ST	AT WILBRAHAM LINE	Ludlow
6T1	L17003	WATER CATACONAMUG BK	HWY FLAT HILL RD	120 436 552	Lunenburg
6T2	L17013	WATER PEARL HILL BROOK	HWY PLEASANT ST	114 421 532	Lunenburg
39J	L18016	WATER SAUGUS RIVER	ST107 WESTERN AVE	200 FT N OF BALLARD ST	Lynn
2QN	L18017	WATER SAUGUS RIVER	HWY BOSTON ST	AT SAUGUS LINE	Lynn
32G	M02006	RR MBTA	HWY HARBOR ST	.25 MILES E ST 127	Manchester
3LG	M03004	WATER WADING RIVER	HWY OTIS ST	1 MI SE OF JCT SCHOOL ST	Mansfield
95V	M03010	WATER RUMFORD RIVER	HWY SPRING ST		Mansfield
95X	M03011	WATER GREENWOOD LAKE	HWY PLAIN ST		Mansfield
3XQ	M03018	HWY COPLAND DR	HWY GEORGE ST	NEXT TO RAIL; OLD RTE 140	Mansfield
95Y	M03023	WATER RUMFORD RIVER	HWY WILLOW ST		Mansfield
960	M03024	WATER CANOE RIVER	HWY MILL ST		Mansfield
2Q6	M04001	RR BMRR (ABANDONED)	HWY VILLAGE ST	NEAR HIGH SCHOOL	Marblehead
43R	M05002	WATER SIPPICAN RIVER	HWY COUNTY RD	.4 MI N OF I 195	Marion
254	M06004	WATER ASSABET RIVER	HWY BOUNDARY ST	100 FT. S.E. OF NTBRO T.L	Marlborough
43T	M07001	WATER NORTH RIVER	HWY UNION ST	MARSHFIELD-NORWELL TOWNLN	Marshfield

43X	M07003	WATER SOUTH RIVER	HWY SEA ST	MARSHFIELD-SCITUATE LINE	Marshfield
47J	M07004	WATER SOUTH RIVER	ST 3 A/MAIN ST	AT JCT.139	Marshfield
9JQ	M07005	WATER SOUTH RIVER	HWY WILLOW ST	.5 MI.N.OF 139/3A	Marshfield
43U	M07006	WATER CUT RIVER	HWY CANAL ST	.7 M S OF 139 CRSWL	Marshfield
43V	M07007	WATER CUT RIVER	HWY BEACH ST	.3 MI E OF RTE 139	Marshfield
9JT	M07012	WATER GREEN HARBOR RIVER	HWY WEBSTER ST		Marshfield
9JR	M07014	WATER GREEN HARBOR RIVER	ST139 DYKE RD		Marshfield
9JU	M07016	WATER SOUTH RIVER	HWY OLD OCEAN ST		Marshfield
43Y	M07019	WATER SOUTH RIVER	HWY JULIAN ST	MARSHFIELD-SCITUATE LINE	Marshfield
25R	M10001	WATER ASSABET RIVER	HWY WHITE PND RD	.5 MI. S. OF ST.117	Maynard
24N	M10005	WATER ASSABET RIVER	HWY WALNUT ST	.1 MI.SOUTH OF ST-62	Maynard
25T	M10006	WATER ASSABET RIVER	HWY FLORIDA RD	0.1 MI. N OF ST.62	Maynard
79J	M11015	WATER VINE BROOK	ST 27 N MEADOWS RD		Medfield
70N	M11016	WATER STOP RIVER	HWY CAUSEWAY ST	.8MI. SOUTHWEST OF RT.109	Medfield
7W5	M13005	WATER CHICKEN BROOK	HWY WELLNGTON ST		Medway
7W6	M13006	WATER CHICKEN BROOK	HWY GUERNSEY ST		Medway
7W7	M13007	WATER CHICKEN BROOK	HWY LOVERING ST		Medway
7W8	M13011	WATER CHICKEN BROOK	HWY VILLAGE RD		Medway
7W4	M13012	WATER CHICKEN BROOK	ST109 MAIN ST		Medway
7W9	M13013	WATER HOPPING BROOK	HWY WEST ST		Medway
7BV	M15007	WATER MUDDY BROOK	HWY MILFORD RD		Mendon
8AY	M17012	WATER SPICKETT RIVER	ST113 LOWELL ST	.1 MI W. ST 28	Methuen
9K6	M18059	WATER POQUAY BROOK	HWY VERNON ST		Middleboro
05P	M19003	WATER FACTORY BROOK	HWY TOWN HILL RD	112M N BECKET BRDR	Middlefield
05Q	M19004	WATER FACTORY BROOK	HWY TOWN HILL RD	NEAR BECKET BRDR&RR	Middlefield
05V	M19008	WATER GLENDALE BROOK	HWY CLARK WRIGHT	1M N OF MAIN RD NR CHSTER	Middlefield
31L	M20003	WATER IPSWICH RIVER	ST 62 MAPLE ST	1 MI E ST114	Middleton
1JP	M21005	WATER MILL RIVER	HWY FISK MILL RD	1M N OF RT140 @UPTN LINE	Milford
7C4	M22026	WATER DOROTHY BROOK	HWY BRIGHTSIDE		Millbury
2A6	M23006	WATER CHARLES RIVER	HWY PLEASANT ST	.2 MI N OF NORFOLK T.L.	Millis
7WB	M23009	WATER BOGASTOW BROOK	HWY MIDDLESEX ST		Millis
7WC	M23012	WATER BOGASTOW BROOK	ST115 ORCHARD ST	.1 MI W. OF BORGASTOW CIR	Millis
7WD	M23013	WATER BOGASTOW BROOK	HWY RIDGE ST		Millis
1CR	M24001	WATER BLACKSTONE RIVER	HWY CENTRAL ST	.2MI.WEST OF ST-122	Millville
1CQ	M24002	WATER MILL RACE	HWY CENTRAL ST	.2 MI SOUTH OF ST 122	Millville
7CC	M24007	WATER ABANDNED MILL RACE	HWY CENTRAL ST	BETWEEN M24003 & M24006	Millville
172	M27002	WATER CHICOPEE BROOK	HWY CUSHMAN ST	E OF RT32 IN MONSON CTR	Monson
15U	M27010	WATER CHICOPEE BROOK	HWY HOSPITAL RD	.15 MI W OF RTE 32	Monson
175	M27014	WATER CHICOPEE BROOK	HWY HAMPDEN AVE	E OF RT32 S OF MONSON CTR	Monson
176	M27015	WATER CONANT BROOK	HWY OLD WALES RD	1.0 MI S OF MUNN RD	Monson
1AH	M27026	RR NECRR	HWY STAFFORD HLW	E OF ST 32-BY STATE LINE	Monson
68H	M27030	WATER CHICOPEE BROOK	HWY BUNYAN RD		Monson
68A	M27031	WATER CHICOPEE BROOK	HWY ROBBINS RD	.1MI W OF 32	Monson
68M	M27033	WATER BR CHICOPEE BROOK	HWY MECHANIC ST		Monson
68J	M27036	WATER HENDEE BROOK	HWY BRADWAY RD		Monson
68B	M27037	WATER SCANTIC RIVER	HWY BRADWAY RD		Monson
68N	M27038	WATER TWELVEMILE BROOK	HWY DICKENSON RD		Monson
68C	M27041	WATER CHICOPEE BROOK	HWY MAPLE ST		Monson

68D	M27043	WATER TEMPLE BROOK	HWY	LWR HAMPDEN		Monson
68E	M27044	WATER TEMPLE BROOK	HWY	LWR HAMPDEN		Monson
68F	M27048	WATER TWELVEMILE BROOK	HWY	WILBRAHAM RD		Monson
68K	M27053	WATER MARGARET BROOK	HWY	MECHANIC ST		Monson
68L	M27054	WATER CHICOPEE BROOK	HWY	PECK CRSS RD		Monson
68G	M27055	WATER TEMPLE BROOK	HWY	ALDN THRSR		Monson
0R4	M28017	WATER UTILITY CANAL	HWY	ELEVENTH ST	1M S JCT RTS2&2A	Montague
0R1	M28035	WATER LYONS BROOK	HWY	DAVIS RD	AT WENDELL TOWN LINE	Montague
05W	M29001	WATER KONKAPOT RIVER	HWY	CURTIS RD	S OF RT23 @FAIRVIEW RD	Monterey
05X	M29002	WATER KONKAPOT RIVER	HWY	RIVER RD	S OF RT23@GOULD RD	Monterey
05Y	M29005	WATER LOOM BROOK	HWY	BEARTOWN MTN	BTWN HUPI RD&CARRINGTN RD	Monterey
AUV	M29008	WATER HARMON BROOK	HWY	NEW MARLBORO		Monterey
AUW	M29009	WATER RAWSON BROOK	HWY	WELLMAN RD		Monterey
01A	M30001	WATER ROARING BROOK	HWY	MAIN RD	.3 MI S HUNTINGTON	Montgomery
50W	M31002	WATER WRIGHT BROOK	HWY	WEST ST	062582 109413520 *	Mt Wash.
442	N02003	WATER HITHER CREEK	HWY	AMES AVE	.1 MI NW OF MADAKET RD	Nantucket
443	N02004	WATER LONG POND	HWY	MASSASOIT RD	.3 MI S OF MADAKET RD	Nantucket
9K7	N02005	WATER HITHER CREEK	HWY	MADAKET ST		Nantucket
9K8	N02006	WATER HITHER CREEK	HWY	CAMBRIDGE ST		Nantucket
7PY	N03025	WATER BEAVER DAM BROOK	HWY	MILL ST		Natick
7Q0	N03026	WATER FISKE POND	HWY	SPEEN ST		Natick
7Q1	N03027	WATER COURSE BROOK	HWY	POND ST		Natick
33P	N04001	WATER CHARLES RIVER	HWY	CENTRAL AVE	NEEDHAM/NEWTON TOWN LINE	Needham
185	N07004	WATER MEADOW BROOK	HWY	BARR RD	0.5M SW WR-GBVL&W.BFD-RDS	New Braintr.
186	N07008	WATER WINIMUSSET BROOK	HWY	HARDWICK RD	AT JCT OF RAVINE RD	New Braintr.
06F	N08010	WATER KONKAPOT RIVER	HWY	HADSELL ST	E OF JCT BRNCH RD&CL ML R	N. Marlboro
01B	N08013	WATER KONKAPOT RIVER	HWY	MILL RIV RD	1.6 MI E SHEFFIELD	N. Marlboro
06L	N08017	WATER UMPACHENE RIVER	HWY	LMBRT CRS RD	S OF JCT HDSL ST&STHFD RD	N. Marlboro
06Q	N08022	WATER UMPACHENE RIVER	HWY	HADSELL ST	BTW HDSL ST&STHFD RD	N. Marlboro
2RD	N10005	WATER LITTLE RIVER	HWY	HAY ST	1 MI. SW. OF RT. 1A	Newbury
2TT	N10010	WATER PARKER RIVER	ST	1 A/HIGH RD	2.8 MI S NEWBURY TOWN HAL	Newbury
323	N11020	I 95	HWY	FERRY RD	AT PINE HILL RD	Newburyport
4TW	N12034	TR GREEN LINE D	HWY	HERRICK RD	OVER GREEN LINE	Newton
963	N13007	WATER MILL RIVER	HWY	MILLER ST	083085 116425536	Norfolk
961	N13009	WATER STOP RIVER	HWY	CLARK ST		Norfolk
962	N13011	WATER MILL RIVER	HWY	MAIN ST		Norfolk
0BR	N14026	WATER PHILLIPS CREEK	ST	8 A/CHURCH	1.9 MI N OF ADAMS TL	North Adams
96V	N16001	WATER SEVEN MILE RIVER	HWY	DRAPER AVE		No. Attleboro
96U	N16002	WATER SEVEN MILE RIVER	HWY	OLD POST RD		No. Attleboro
3LT	N16005	WATER ABBOTT RUN RIVER	HWY	HUNTS BRG RD	.5 MI E OF MENDON RD	No. Attleboro
96W	N16012	WATER TEN MILE RIVER	HWY	MT HOPE ST		No. Attleboro
971	N16014	WATER TEN MILE RIVER	HWY	CHESTNUT ST		No. Attleboro
96X	N16017	WATER TEN MILE RIVER	HWY	FISHER ST		No. Attleboro
970	N16019	WATER TEN MILE RIVER	HWY	BROAD ST		No. Attleboro
96Y	N16020	WATER TEN MILE RIVER	HWY	BROAD ST		No. Attleboro
1GR	N17002	WATER FIVE MILE RIVER	HWY	HINES BRG RD	2.3 MI. E OF ST. 67	No. Brookfield
0RG	N19023	WATER MILL RIVER	HWY	BLISS ST	0.5M S OF RT9 IN FLORENCE	Northampton
0MQ	N19026	WATER SLUICEWAY	HWY	MAIN ST LEED	JCT ARCH ST	Northampton
0RB	N19035	WATER ROBERTS MEADOW BRK	HWY	KENNEDY RD	1MI E OF WSTHMPNTN	Northampton

ORH	N19037	WATER BASSET BROOK	HWY PARK HILL RD	1MI S OF RT66 BY EHMPNTN	Northampton
OMH	N19047	WATER MILL RIVER	HWY CLEMENT ST	AT MILL RIVER	Northampton
1CY	N21004	WATER MUMFORD RIVER	HWY DOUGLAS RD	AT JCT WITH FLETCHER ST	Northbridge
OMX	N22006	WATER MILL BROOK	HWY WARWICK RD	1.75 MI N OF ST MARYS ST	Northfield
OMY	N22008	WATER MILL BROOK	HWY WARWICK RD	2.15 MI NE OF ST MARYS ST	Northfield
0RJ	N22010	WATER MILL BROOK	HWY BIRNAM RD	E OF RT63 S OF SCHOOL ST	Northfield
965	N23001	WATER WADING RIVER	HWY WALKER ST		Norton
966	N23015	WATER TAILRACE	HWY CROSS ST		Norton
3JR	N25003	WATER NEPONSET RIVER	HWY MORSE ST	.1 MI W OF PLEASANT ST	Norwood
4A3	O01001	WATER LAGOON POND	HWY BEACH RD	AT TISBURY OAK BLUFF TL	Oak Bluffs
4A2	O01003	WATER SENGEKONTACKET INT	HWY SEAVIEW AVE	1 MI N OF EDGARTOWN TL	Oak Bluffs
0TW	O03009	WATER MILLERS RIVER	HWY HOLTSHIRE RD	BTW RTS2&2A NEAR WENDELL	Orange
14X	O03015	RR BMRR	HWY BROOKSIDE RD	AT JCT OF ROGER AVE	Orange
62V	O03027	WATER SHINGLE SWAMP BRK	HWY E RIVER ST		Orange
06W	O05007	WATER W BR FARMINGTON R	HWY TANNERY RD	E OF RT8 N OF RT23	Otis
06Y	O05017	WATER MINER BROOK	HWY CLD SPRNG RD	W OF RT8 NR SNDSFD&TOLLND	Otis
070	O05018	WATER DIMMOCK BROOK	HWY GIBBS RD	N OF RT23 1M E OF RT8	Otis
1GY	O06004	WATER FRENCH RIVER	HWY CLARA BTN RD	0.2 MI WEST OF RTE -12	Oxford
1D3	O06011	WATER FRENCH RIVER	HWY DUDLEY RD	.5 MI SW OF CHARLTON ST	Oxford
1D2	O06012	WATER FRENCH RIVER	HWY HARWOOD ST	.6 MI SW OF RTE 12	Oxford
17B	P01014	WATER WARE RIVER CANAL	HWY E MAIN ST	100' E. CHRCH ST IN THRDK	Palmer
17C	P01016	WATER WARE RIVER CANAL	HWY CHURCH ST	N OF HIGH ST BY PLMR CNTR	Palmer
1AP	P01024	ST 67 BOSTON RD	US 20 BRIMFIELD RD	US 20/ST 67	Palmer
2QC	P03006	RR MBTA/BMRR	HWY WARREN ST	NEXT TO WARREN STREET CAF	Peabody
2QD	P03009	RR MBTA/BMRR	HWY ENDICOTT ST	.1 MI SW OF RTE 114	Peabody
2RJ	P03013	WATER NORTH RIVER	HWY HOWLEY ST	.1 MI NO. OF MAIN STREET	Peabody
0RM	P04006	WATER AMETHYST BROOK	HWY MEETNGHSE RD	.5 KM N JCT AMHERST ROAD	Pelham
0RK	P04007	WATER HARRIS BROOK	HWY MEETNGHSE RD	.2 KM N JCT AMHERST ROAD	Pelham
25V	P06003	WATER NISSITISSIT RIVER	HWY MILL ST	.1MI. S. E. OF ST-111	Pepperell
25W	P06004	WATER NASHUA RIVER	HWY GROTON ST	.2 MI. N. OF RT. 113	Pepperell
17E	P08002	WATER E BR SWIFT RIVER	HWY GLN VALLY RD	N OF CARTER PD NEAR BARRE	Petersham
17G	P08004	WATER BROWNS POND	HWY EAST ST	1M E OF RT32 1M S OF 101	Petersham
0E1	P10021	RR CSX	US 20 W HOUSATONIC	6.3 MI W OF LENOX TL	Pittsfield
073	P10034	WATER W BR HOUSATONIC R	HWY MILL ST	N OF 20,W OF 7,S OF WEST	Pittsfield
07C	P10049	WATER ONOTA LAKE	HWY LAKEWAY DR	S OF PCKS RD E OF ONTA LK	Pittsfield
077	P10053	WATER SW BR HOUSATONIC R	HWY HUNGERFORD	N OF HSATNC ST&W OF GL AV	Pittsfield
079	P10060	WATER SW BR HOUSATONIC R	HWY HUNGERFORD	BTWN HSTNC AV&LBNN DRV	Pittsfield
445	P14001	WATER WINNETUXET RIVER	HWY WINNETUXT RD	1.3 MI. NE MIDDLEBORO LIN	Plympton
1H8	P16003	WATER WACHUSETT BROOK	HWY BALL HILL RD	2.1 MI. N. OF RT. 31	Princeton
1YM	P16014	WATER WARE RIVER	ST 62 HBBRDSTN RD	1 MILE EAST OF STATE 68	Princeton
6V8	P16019	WATER S WACHUSETT BROOK	HWY CLMNT HIL RD	500 M NTH OF BALL HILL RD	Princeton
399	Q01009	COMB SGMRE ST&MBTA&REDS	HWY HANCOCK ST	1.3KM SE OF JET I93&NEPON	Quincy
3M4	R02003	WATER TAUNTON RIVER	HWY SOUTH ST E	RAYNHAM-TAUNTON TOWNLINE	Raynham

416	R02007	RR MBTA (ABANDONED)	HWY BRIDGE ST	.2 MI WEST OF RTE 138	Raynham
4DB	R05001	RR MBTA/BMRR	ST145 REV BCH PKWY	.1 MI E OF ST 1A	Revere
4DC	R05016	COMB BLUE LN & STATE RD	ST145 REV BCH PKWY	.1 MI N OF WINTHROP AVE	Revere
3FP	R05055	RR MBTA/BMRR	HWY RAILROAD AVE	.4 MI SW OF JCT SR1A&145	Revere
0E4	R06002	RR CSX	HWY SLPY HLLW RD	0.7 MI E OF ST 41	Richmond
AMK	R07012	WATER SIPPICAN RIVER	HWY BATES RD		Rochester
32P	R11001	RR MBTA	ST 1 A/MAIN ST	1.6 MI N ROWLEY TOWN HALL	Rowley
17M	R12001	WATER LAWRENCE BROOK	HWY STOCKWELL RD	0.5M S OF RT68&BROWN RD	Royalston
17L	R12004	WATER LAWRENCE BROOK	HWY NE FITZWM RD	1M N OF RT68 NR BROWN RD	Royalston
698	R12010	WATER BOYCE BROOK	ST 68 WARWICK RD		Royalston
699	R12019	WATER TOWNE BROOK	HWY OLD TNPKE RD		Royalston
69A	R12020	WATER BOYCE BROOK	HWY FALLS RD		Royalston
69B	R12023	WATER FALLS BROOK	HWY FALLS RD		Royalston
07E	R13007	WATER BRADLEY BROOK	HWY OLD WSTFIELD	N OF RT20 @ RUSSELL CTR	Russell
6V9	R14013	WATER MILL BROOK	HWY CHARNOCK HLL		Rutland
6VA	R14015	WATER LONG POND OTLT	ST122 A/COUNTY ST		Rutland
32T	S01018	COMB ST107/BRG ST&MBTA	ST114 NORTH ST	.1 MI W SALEM CENTER	Salem
028	S03001	WATER BUCK RIVER	ST 57 SANDISFLD RD	.6 MI NW OF BEECH PLAIN R	Sandisfield
07F	S03005	WATER W BR FARMINGTON R	HWY CLARK RD EXT	OFF OLD RT 8 @ N END	Sandisfield
07H	S03011	WATER N BR SILVER BROOK	HWY FOX RD	BET VEITS RD&N BOS.SNF.RD	Sandisfield
07K	S03013	WATER CLAM RIVER	HWY BEECH PLAIN	N OF 57@WEST NEW BOSTON	Sandisfield
07R	S03014	WATER RIISKA BROOK	HWY SANDY BRK T	S OF ROOD RD NEAR CONN	Sandisfield
07L	S03019	WATER S BR SILVER BROOK	HWY FOX RD	S OF VEITS RD S OF RT57	Sandisfield
07M	S03021	WATER S BR SILVER BROOK	HWY ELK RD	E OF FOX RD S OF RT57	Sandisfield
07N	S03023	WATER SANDY BROOK	HWY NORFOLK RD	S.SANDISFP NEAR NEW MLBRO	Sandisfield
081	S06013	WATER BLACK BROOK	HWY BRIER RD	S OF RT2&E OF BLK BRK RD	Savoy
42C	S07004	WATER TIDAL INLET	HWY ED FOSTER RD	.6 MI E OF SCITUATE CTR	Scituate
40N	S09003	RR AMTRAK/MBTA	HWY MASKWONICUT	.2 MI NW OF NO MAIN ST	Sharon
02J	S10008	WATER IRONWORKS BROOK	HWY COUNTY RD	.8 MI E OF RTE 7	Sheffield
088	S10015	WATER SCHENOB BROOK	HWY KELSEY RD	W OF RT41 1M N OF CONNTCT	Sheffield
02G	S10018	WATER HUBBARD BROOK	HWY S EGRMNT RD	.25 MI SE OF EGREMONT LN	Sheffield
08A	S10019	WATER SCHENOB BROOK	HWY BERK SCHOOL	W OF GIBERSON RD&E OF 41	Sheffield
02F	S10029	WATER IRONWORKS BROOK	HWY COUNTY RD	2.2 MI E OF RTE 7	Sheffield
0J4	S11006	WATER DRAGON BROOK	HWY BARDWLL FRRY	1M S OF RT2 E OF ORCHD RD	Shelburne
3PC	S16003	WATER LEES RIVER	ST103 WILBUR AVE	AT SWANSEA T.L.	Somerset
3GF	S17016	RR MBTA/BMRR	HWY WEBSTER AVE	OVER RAILROAD	Somerville
12L	S18007	WATER BACHELOR BROOK	ST 47 HADLEY ST	1 M N JCT ST 116	So.Hadley
0RT	S19006	WATER MANHAN RIVER	HWY RUSSLVLE RD	RUSLVL NEAR WSFLD&MT6MRY	Southamp.
0RV	S19010	WATER MANHAN RIVER	HWY EAST ST	0.5M E OF RT10 NR RR	Southamp.
0RU	S19011	WATER MANHAN RIVER	HWY GUNN RD	0.5M S OF RT10 NR EHPTN	Southamp.
0RW	S19024	WATER MOOSE BROOK	HWY VALLEY RD	0.7 M E OF RT10 NR WSTFLD	Southamp.
23K	S20006	RR CSX	HWY NORTHBORO RD	.1MI. E. OF I 290	Southboro
4CY	S20012	WATER SUDBURY DAM SPLLWY	HWY ACCESS RD	.2 MI N OF ST30	Southboro
1HB	S21003	WATER QUINEBAUG RIVER	HWY MILL ST	N OF RT131 NR STURBRIDGE	Southbridge
1D9	S21005	WATER QUINEBAUG RIVER	HWY CENTRAL ST	.3MI. N. OF MAIN ST.	Southbridge

1Y9	S21014	RR PWRR (ABANDONED)	ST169 N WOODSTK RD	.1MI. S. OF ST-131 SPLIT	Southbridge
0RX	S22001	WATER MUNN BROOK	HWY LOOMIS ST	2MI N OF RT57 NEAR GRNVLL	Southwick
0V6	S22005	WATER JOHNSON BROOK	US202 /ST10/COLLGE	1.1 M N JCT ST 168	Southwick
1XW	S23002	WATER SEVEN MILE RIVER	ST 31 N SPENCER RD	1MI. N. OF ST-9	Spencer
7DH	S23010	WATER TURKEY HILL BROOK	HWY HASTINGS RD	120586 STATUTORY *	Spencer
6W5	S23015	WATER SHAW BROOK	HWY DONNLY CROSS		Spencer
1HL	S23016	WATER FIVE MILE RIVER	HWY BROOKS PD RD	200FT. E. OF N.BRKFLD.T.L	Spencer
6W6	S23018	WATER SEVEN MILE RIVER	HWY BROWNING PND		Spencer
6W7	S23019	WATER CRANBERRY RIVER	HWY S SPENCR RD		Spencer
6W4	S23020	WATER MUZZY MEADOW BROOK	ST 9 DEWEY ST		Spencer
6W8	S23023	WATER CRANBERRY RIVER	HWY GAUTHIER RD		Spencer
14N	S24028	RR CONRAIL (ABANDNED)	HWY ST JAMES AVE	.1 M S JCT ALBANY ST.	Springfield
13H	S24066	I 291 CONN A,B,C,D&RMP F	HWY CHESTNUT ST	AT I-291 RMPS	Springfield
0NA	S24090	RR CSX SPUR	HWY ROOSEVELT AV	0.05 MI S OF RTE 291	Springfield
0NB	S24091	RR CSX	HWY ROOSEVELT AV	.7 MI S OF RTE 291	Springfield
6WB	S25002	WATER BARTLETT POND BRK	HWY LUCAS RD		Sterling
6WC	S25003	WATER STUARTS POND	HWY JUSTC HIL RD		Sterling
1HP	S25008	WATER STILLWATER RIVER	HWY MUDDY PND RD	.2 MI. E. OF I-190	Sterling
6WH	S25014	WATER WEKEPEKE BROOK	ST 12 LEOMNSTER RD		Sterling
6WD	S25015	WATER CONNELLY BROOK	ST 12 WORCESTER RD		Sterling
6WE	S25017	WATER CONNELLY BROOK	HWY GREENLAND RD		Sterling
6W9	S25018	WATER WEKEPEKE BROOK	HWY PRPTS JCT RD		Sterling
6WA	S25019	WATER WEKEPEKE BROOK	HWY PRPTS JCT RD		Sterling
6WF	S25020	WATER BROOK	HWY CAMP GRND RD		Sterling
6WG	S25021	WATER ROCKY BROOK	HWY BEAMAN RD		Sterling
02L	S26002	WATER HOUSATONIC RIVER	HWY GLENDALE MDL	.7 MI W OF RTE 7	Stockbridge
0E8	S26006	RR HRR	US 7 SOUTH ST	1.5 MI N OF GT BAR TL	Stockbridge
264	S29003	WATER ASSABET RIVER	HWY SUDBURY RD	0.9 MI. E. OF RT. 62	Stow
262	S29004	WATER ASSABET RIVER	HWY SUDBURY RD	0.8 MI. E. OF RT. 62	Stow
7Q8	S29006	WATER ELIZABETH BROOK	HWY WHEELER RD	.5 MILES SOUTH OF ST -117	Stow
7Q9	S29009	WATER BROOK	HWY TAYLOR ST		Stow
4WD	S30003	WATER QUINEBAUG RIVER	HWY FARQUHAR RD	.5 MI SW OF RTE 131	Sturbridge
1HQ	S30006	WATER QUINEBAUG RIVER	HWY STALLION HLL	S OF RT20 @ OL STUR VLLGE	Sturbridge
1HR	S30007	WATER QUINEBAUG RIVER	HWY HOLLAND RD	.5MI. S. OF U.S.20&ST-148	Sturbridge
A4H	S30019	WATER LONG POND	HWY CHAMPEAUX RD	.3 MILES. WEST OF ST. 148	Sturbridge
1HU	S33004	WATER BLACKSTONE RIVER	HWY DEPOT ST	0.1M N OF RT122A @GRAFTON	Sutton
3WF	T01012	WATER MILL RIVER	ST138 WEIR ST	.1 MI S OF US 44	Taunton
3K8	T01020	WATER MILL RIVER	HWY WHITTENTN ST	AT WHITTENTON MILL	Taunton
3K1	T01021	WATER MILL RIVER	HWY BAY ST	BAY STREET AT MILL RIVER	Taunton
69L	T02045	WATER STONE BRIDGE POND	HWY STONE BRG RD		Templeton
2L5	T03013	I 495	HWY NORTH ST	0.6 MI SWLY RT 133	Tewksbury
2Y3	T06004	WATER IPSWICH RIVER	ST 97 HIGH ST	.8 MI E US1	Topsfield
26Y	T07004	WATER SQUANNACOOK RIVER	ST119 MAIN ST	0.2 MI WLY RT 13	Townsend

267	T07008	WATER WILLARD BROOK	HWY WHEELER ROAD	AT CORNER OF RT.119	Townsend
26B	T07011	WATER PEARL HILL BROOK	HWY VINTON PD RD	0.1 MI W OF N.FITCHBURGRD	Townsend
2EN	T09001	WATER MERRIMACK RIVER	ST113 /ST3A/KENDLL	TYNGSBOROUGH	Tyngsboro
02P	T10002	WATER HOP BROOK	HWY MAIN RD	2.5 MI S OF LEE	Tyringham
1DJ	U01005	WATER WEST RIVER	HWY PLEASANT ST	.2MI. WST. OF MAPLE AVE.	Upton
6WW	U01011	WATER CENTER BROOK	HWY MENDON ST	AT WEST RIVER ST.	Upton
1J0	U01013	WATER WEST RIVER	HWY GLEN AVE	200 FT.SOUTH OF ST.140	Upton
6WX	U01014	WATER PRATT POND INLT	HWY HOPKINTON RD		Upton
6X0	U01016	WATER MILL BROOK	ST140 MILFORD ST		Upton
6WY	U01018	WATER WARREN BROOK	HWY FOWLER ST	FOWLER ST OVER WARREN BRK	Upton
6X5	U02002	WATER EMERSON BROOK	HWY MILL ST		Uxbridge
6X2	U02003	WATER IRONSTONE BROOK	HWY OLD PROV TKP		Uxbridge
6X6	U02017	WATER WEST RIVER	HWY E HARTFRD AV		Uxbridge
1DM	U02020	WATER MUMFORD RIVER	HWY HARTFORD AVE	.4 MI E OF RTE 122	Uxbridge
1L9	U02021	WATER MUMFORD RIVER	ST122 N MAIN ST	.1MI N OF HRTFD AV N UXBR	Uxbridge
1J5	U02030	WATER IRONSTONE BROOK	HWY RIVER RD	BTWN 146A&122 NR MILLVILL	Uxbridge
6X3	U02034	WATER ROCK MEADOW BROOK	HWY ROCK MEADOW		Uxbridge
3WL	W03033	I 95	HWY CONEY ST	.5 MI SE OF US 1	Walpole
3KC	W03037	WATER WILLETT POND OTLT	HWY BULLARD ST	JCT W OF RTE 1A	Walpole
3KE	W03040	WATER MEMORIAL POND OTLT	HWY SCHOOL ST	.2 MI S OF RTE 27	Walpole
2C8	W04001	WATER CHARLES RIVER	HWY FARWELL ST	AT CHARLES RIVER	Waltham
2NJ	W04010	RR MBTA/BMRR	HWY NEWTON ST	0.16 KM SOUTH JCT RT 20	Waltham
2NK	W04011	RR MBTA/BMRR	HWY JACKSON ST	0.16 KM S CENTRAL ST	Waltham
0T3	W05008	WATER FLAT BROOK	HWY MALBOUEF RD	0.5MI S OF RT32 NR WRE RV	Ware
0T2	W05011	WATER MUDDY BROOK	HWY HARDWICK PND	0.5MI S OF HDWK LINE	Ware
449	W06057	WATER MAPLE SPRING BROOK	HWY MAPLE SPRING	1.5 MI N OF RTE 25	Wareham
17V	W07001	WATER QUABOAG RIVER	HWY OLD W BRKFLD	0.5M N JCT RTS19&67	Warren
61R	W08009	WATER KIDDER BROOK	ST 78 WINCHSTER RD		Warwick
0EA	W09006	RR CSX	HWY SUMT HILL RD	0.3 MI E OF ST 8	Washington
08J	W09012	WATER DEPOT BROOK	HWY LOWER VALLEY	E OF RT8 NEAR BECKET	Washington
2P7	W13007	RR CSX/MBTA	HWY ROCKLAND ST	.08 KM NLY RTE 16	Wellesley
44A	W14006	WATER LOAGY BAY	HWY LT ISLAND RD	1 MI W OF RTE 6	Wellfleet
4BE	W14008	US 6 MID CAPE HWY	HWY LNG PND RD	.2 MI E OF MAIN ST	Wellfleet
46E	W18001	WATER TOWN RIVER	ST 28 S MAIN ST	0.2 M S OF RTE 106	W. Brdgewtr.
44Q	W18002	WATER TOWN RIVER	HWY ARCH ST	.2 MI S OF RTE 28	W. Brdgewtr.
3WW	W18019	ST 24	HWY WEST ST	.8 MI NORTH OF ST106	W. Brdgewtr.
1AY	W19006	RR CSX	HWY LONG HILL RD	0.3 MI S RT 9 WBRKFLD CTR	W. Brkfield.
188	W19008	WATER SUCKER BROOK	HWY WICKABG VLLY	0.1 MI S OF SNOW RD	W. Brkfield.
189	W19009	WATER COYS BROOK	HWY FOSTER HL RD	0.1 MI E OF RT9	W. Brkfield.
14W	W21011	RR PVRR	HWY PROSPECT AVE	.1 M E WESTFIELD T.L.	W. Sprngfld.
628	W21012	WATER SPILLWAY	HWY BRIDGE ST		W. Sprngfld.
08P	W22012	WATER CONE BROOK	HWY CONE HILL RD	E OF RT41 NR RICHMOND	W. Stokbrdg.
6XJ	W24012	WATER ASSABET RIVER	HWY FISHER ST		Westboro
0V7	W25006	WATER LITTLE RIVER	US202 /ST10/STHWCK	JCT MILL ST.	Westfield
14Q	W25011	COMB ACCESS RD & PVRR	HWY POCHASSIC ST	0.1 MI W OF US 202	Westfield

14U	W25021	RR PVRR	HWY LOCKHOUSE RD	.2 M N JCT US 202	Westfield
0T7	W25032	WATER MOOSE MEADOW BROOK	HWY POCHASSIC RD	S OF MASPKE OPASS NR RSSL	Westfield
0NU	W27002	WATER N BR MANHAN RIVER	HWY EASTHMPTN RD	.9 MI NW OF NORTHAMPTON	Wthampton.
0NT	W27004	WATER N BR MANHAN RIVER	HWY NORTH RD	.1 MI SW OF KINGS HWY	Wthampton.
0TB	W27005	WATER N BR MANHAN RIVER	HWY KINGS HWY	W OF JCT RESERVOIR RD	Wthampton.
11P	W27010	WATER SODOM BROOK	ST 66 MAIN RD	.1 MI E OF JCT SOUTH RD	Wthampton.
0TE	W27018	WATER BREWER BROOK	HWY CHESTFLD RD	1M E PINE ISLAND LAKE	Wthampton.
62M	W27022	WATER BROOK	HWY LAUREL HILL		Wthampton.
1J8	W28010	WATER WHITMAN RIVER	HWY WHITMNVIL RD	2.5 MI. N. OF RT. 2	Westminster
1JB	W28011	WATER WHITMAN RIVER	HWY WHITMNVIL RD	2.5 MI. N. OF RT. 12	Westminster
1LK	W28017	WATER PHILLIPS BROOK	ST 12 ASHBURNHM ST	1.2 MI. N OF FITCBRG. C.L	Westminster
1JA	W28019	WATER ROUND MEADOW BROOK	HWY DEPOT RD	.1 MI. S. OF RT. 2A	Westminster
6XK	W28024	WATER WHITMAN RIVER	HWY OAKMOUNT AVE		Westminster
2NM	W29001	RR MBTA/BMRR	HWY MERRIAM ST	0.48 KM S RT 117	Weston
2M9	W29030	I 95 /ST128	HWY RECREATN RD	0.5 MI SLY MASS PIKE	Weston
3KK	W30002	WATER E BR WESTPORT RIV	HWY HIX BRDGE RD	.7 MI E OF RTE 88	Westport
3M3	W30004	WATER E BR WESTPORT RIV	HWY FORGE RD	.3 MI S OF RTE 177	Westport
405	W30007	RR BCRR	HWY HIGHLAND AVE	OVER RAILROAD	Westport
3W6	W30016	WATER WESTPORT RIVER	ST 88	.8 MI S OF DRIFT RD.	Westport
8L6	W32003	WATER HERRING BROOK	HWY COMMRCIAL ST	AT JACKSON SQ	Weymouth
37D	W32006	RR MBTA	HWY IDLEWELL ST	.32 KM NW COMMERCIAL ST	Weymouth
0TM	W33004	WATER MILL RIVER	HWY CHRISTIAN LN	0.2 MI W OF ST 5	Whately
0NY	W33009	WATER WEST BROOK	HWY HAYDNVLE RD	.3 MI W OF MASTERSON RD	Whately
0JB	W36003	WATER BANDFORD BROOK	HWY HEMENWAY RD	100 FT S. JCT ASHFIELD RD	Williamsburg
0FE	W36011	WATER MILL RIVER	HWY BRIDGE ST	JUST S OF RTE 9	Williamsburg
0J9	W36017	WATER MILL RIVER	HWY S MAIN ST	SW OF RT9 .5MI N OF NHPTN	Williamsburg
0J7	W36018	WATER MILL RIVER	HWY SKNRVLE RD	W OF RT9 1MI N OF NHPTN	Williamsburg
08T	W37009	WATER GREEN RIVER	HWY HOPPER RD	S OF RT43 @ SWEETS CRNR	Williamstown
0C1	W37017	WATER GREEN RIVER	ST 43 GREEN RIV RD	0.8 MI N OF US 7	Williamstown
0A8	W37018	WATER W BR GREEN RIVER	US 7 NEW ASHFORD	2.3 MI N OF N ASHFORD TL	Williamstown
090	W37019	WATER HOPPER BROOK	HWY HOPPER RD	1M S OF RTE 43	Williamstown
0A6	W37028	WATER GREEN RIVER	US 7 NEW ASHFORD	0.5 MI N OF N ASHFORD TL	Williamstown
2NQ	W38002	RR MBTA/BMRR	ST 38 MAIN ST	1.1 KM SELY RT 129	Wilmington
2NV	W38003	RR MBTA/BMRR	HWY BUTTERS ROW	0.1 MI W RT 38	Wilmington
2KV	W38029	I 93	ST129 LOWELL ST	RT 129 AT RT 93	Wilmington
183	W39001	WATER TARBELL BROOK	HWY HARRIS RD	0.5M W OF RT12 BY WEST ST	Winchendon
182	W39015	WATER W BR MILLERS RIVER	HWY N ROYLSTN RD	1.5M W OF RT12 BULLARDVLL	Winchendon
1A6	W39018	WATER N BR MILLERS RIVER	US202 GLENALLAN ST	US202/MILLERS RIV	Winchendon
2D8	W40029	WATER ABERJONA RIVER	HWY SHORE RD	45 M W. OF SKILLING RD	Winchester
098	W41020	WATER WESTFIELD BROOK	HWY HIGH ST	S OF RT9&N OF OLD RT9	Windsor
2NX	W43003	RR MBTA/BMRR	HWY SALEM ST	1.9 KM S RTE 93	Woburn
1JF	W44006	WATER BEAVER BRK/SEWER	HWY MAY ST	.25 MILES WEST OF PARK AV	Worcester
1DX	W44013	WATER MIDDLE RIVER	HWY MILLBURY ST	.1 M/STH. BALLARD ST.	Worcester
213	W44093	I 290	HWY LAUREL ST	.2MI.EST.OF SUMMER ST.	Worcester
1L2	W44094	I 290	ST 9 BELMONT ST	.2 MI. EAST OF LINCOLN SQ	Worcester
09D	W45011	WATER M BR WESTFIELD RIV	HWY RIVER RD	2 MI E OF PERU T.L.	Worthington
09E	W45012	WATER M BR WESTFIELD RIV	HWY RIVER RD	1M N OF MIDDLEFIELD T.L.	Worthington
09F	W45013	WATER M BR WESTFIELD RIV	HWY RIVER RD	0.5M N OF MDLFD NEAR PERU	Worthington

0CR W45015 WATER WARDS STREAM

ST112 HUNTINGTON RD 2.7 MI N OF HUNTINGTON TL

Worthington

APPENDIX 3

Bridges to be Rebuilt in the Boston Region MPO Area, 2006–2010

REGION	COMMUNITY	BRIDGE	OVER	UNDER
Metropolitan Boston	Acton	A02035	HWY ARLINGTON ST	ST 2
Metropolitan Boston	Arlington	A10012	ST 60 PLEASANT ST	ST 2
Metropolitan Boston	Arlington	A10021	ST 2	HWY LAKE ST
Metropolitan Boston	Ashland	A14002	ST135 UNION ST	WATER SUDBURY RIVER
Metropolitan Boston	Bedford	B04001	ST 4 GREAT RD	WATER SHAWSHEEN RIVER
Metropolitan Boston	Bedford	B04002	ST225 BEDFORD RD	WATER CONCORD RIVER
Metropolitan Boston	Bedford	B04008	HWY PAGE RD	WATER SHAWSHEEN RIVER
Metropolitan Boston	Bedford	B04017	HWY SUMMER ST	WATER SHAWSHEEN RIVER
Metropolitan Boston	Bellingham	B06001	HWY PEARL ST	WATER CHARLES RIVER
Metropolitan Boston	Bellingham	B06011	ST126 S MAIN ST	RR CSX (ABANDONED)
Metropolitan Boston	Belmont	B07004	HWY TRAPELO RD	RR MBTA/BMRR
Metropolitan Boston	Boston	B16009	ST 3 CAMBRIDGE ST	COMB ST3 & CHARLES RIV
Metropolitan Boston	Boston	B16020	CHELSEA ST	CHELSEA RIVER
Metropolitan Boston	Boston	B16029	ST 99 ALFORD ST	WATER MYSTIC RIVER
Metropolitan Boston	Boston	B16111	HWY MILTON ST	RR AMTRAK/MBTA
Metropolitan Boston	Boston	B16118	HWY CENTRE ST	RR MBTA
Metropolitan Boston	Boston	B16163	HWY MORTON ST	RR MBTA
Metropolitan Boston	Boston	B16165	HWY BLUE HILL AV	RR MBTA
Metropolitan Boston	Boston	B16167	HWY RIVER ST	RR MBTA
Metropolitan Boston	Boston	B16217	HWY AMER LEG HWY	ST203 MORTON ST
Metropolitan Boston	Boston	B16237	ST 2 A/MASS AVE	ST 2 COMMONWEALTH AVE
Metropolitan Boston	Boston	B16256	HWY DORCHSTR AVE	I 93 /US1/ST3
Metropolitan Boston	Boston	B16261	HWY SAVIN HLL AV	I 93 /US1/ST3
Metropolitan Boston	Boston	B16266	HWY BOSTON ST	I 93 /US1/ST3
Metropolitan Boston	Boston	B16270	I 93 /US1/ST3	HWY THEATRE ACCESS RD
Metropolitan Boston	Boston	B16272	HWY SOUTHMPTN ST	I 93 /US1/ST3
Metropolitan Boston	Boston	B16686	HWY BROADWAY	COMB MBTA, ST & FT PT C
Metropolitan Boston	Boxborough	B18002	ST111 MASS AVE	I 495
Metropolitan Boston	Braintree	B21025	ST 3	COMB MBTA/CSX & REDS
Metropolitan Boston	Braintree	B21064	HWY RAMP F	HWY RAMP B NB QA ON RP
Metropolitan Boston	Burlington	B29007	I 95 NB/ST128 NB	HWY MIDDLESEX TPK
Metropolitan Boston	Cambridge	C01013	HWY WALDEN ST	RR MBTA/BMRR
Metropolitan Boston	Cambridge	C01014	HWY MT AUBURN ST	RR BMRR
Metropolitan Boston	Canton	C02028	ST138 WASHINGTON ST	I 93 /US1

Metropolitan Boston	Chelsea	C09001	HWY WASHINGTON AV	RR MBTA/BMRR
Metropolitan Boston	Chelsea	C09013	HWY COUNTY RD	US 1 NE XWAY
Metropolitan Boston	Concord	C19003	HWY SUDBURY RD	WATER SUDBURY RIVER
Metropolitan Boston	Concord	C19004	ST 62 /ST2A/MAIN	WATER SUDBURY RIVER
Metropolitan Boston	Concord	C19008	ST 62 MAIN ST	WATER ASSABET RIVER
Metropolitan Boston	Concord	C19013	HWY MONUMENT ST	WATER CONCORD RIVER
Metropolitan Boston	Concord	C19018	ST 2	WATER NASHOBA BROOK
Metropolitan Boston	Concord	C19019	HWY PINE ST	WATER ASSABET RIVER
Metropolitan Boston	Concord	C19021	ST 2 CONCORD TPK	WATER SUDBURY RIVER
Metropolitan Boston	Danvers	D03013	ST 35 WATER ST	WATER WATERS RIVER
Metropolitan Boston	Danvers	D03016	US 1 SB/NEWBRY ST	ST 62 MAPLE ST
Metropolitan Boston	Danvers	D03016	US 1 NB/NEWBRY ST	ST 62 MAPLE ST
Metropolitan Boston	Danvers	D03017	US 1 SB/NEWBRY ST	ST114 ANDOVER ST
Metropolitan Boston	Danvers	D03017	US 1 NB/NEWBRY ST	ST114 ANDOVER ST
Metropolitan Boston	Danvers	D03022	ST128	WATER PORTER RIVER
Metropolitan Boston	Dedham	D05004	ST109 BRIDGE ST	WATER CHARLES RIVER
Metropolitan Boston	Dedham	D05005	HWY AMES ST	WATER CHARLES RIVER
Metropolitan Boston	Dedham	D05027	US 1 PROVDNCE HWY	I 95 NB/ST128 NB
Metropolitan Boston	Dedham	D05038	I 95 NB/ST128 NB	WATER CHARLES RIVER
Metropolitan Boston	Dedham	D05039	I 95 SB/ST128 SB	WATER CHARLES RIVER
Metropolitan Boston	Dedham	D05040	I 95 NB/ST128 NB	ST135 WEST ST
Metropolitan Boston	Dedham	D05041	I 95 SB/ST128 SB	ST135 WEST ST
Metropolitan Boston	Dedham	D05042	ST109 HIGH ST	I 95 NB /ST128 NB
Metropolitan Boston	Dedham	D05043	ST109 HIGH ST	I 95 SB/ST128 SB
Metropolitan Boston	Dedham	D05044	ST 1 A/WASHINGTON	I 95 NB/ST128 NB
Metropolitan Boston	Dedham	D05045	ST 1 A/WASHINGTON	I 95 SB/ST128 SB
Metropolitan Boston	Dedham	D05046	US 1 PROVDNCE HWY	I 95 SB/ST128 SB
Metropolitan Boston	Dover	D10004	HWY WILLOW ST	WATER CHARLES RIVER
Metropolitan Boston	Duxbury	D14010	ST 3 NB/PLGRM HWY	HWY FRANKLIN ST
Metropolitan Boston	Duxbury	D14010	ST 3 SB/PLGRM HWY	HWY FRANKLIN ST
Metropolitan Boston	Everett	E12001	ST 99 SB/MAIN ST	RR MBTA/BMRR/CSX
Metropolitan Boston	Framingham	F07003	HWY WINTER ST	WATER SUDBURY RIVER
Metropolitan Boston	Framingham	F07005	HWY MAIN ST	WATER SUDBURY RIVER
Metropolitan Boston	Framingham	F07006	ST 9 /ST30/WRCSTR	WATER SUDBURY RIVER
Metropolitan Boston	Framingham	F07009	HWY CENTRAL ST	WATER SUDBURY RIVER
Metropolitan Boston	Framingham	F07016	HWY FOUNTAIN ST	RR CSX/MBTA
Metropolitan Boston	Framingham	F07063	HWY DANFORTH ST	WATER SUDBURY RIVER
Metropolitan Boston	Framingham	F07064	HWY WICKFORD RD	WATER SUDBURY RIVER
Metropolitan Boston	Framingham	F07065	HWY WINTER ST	WATER SUDBURY RIVER
Metropolitan Boston	Franklin	F08022	HWY WASHINGTON ST	I 495

Metropolitan Boston	Gloucester	G05005	ST127 WASHINGTON ST	WATER HODGKINS COVE
Metropolitan Boston	Gloucester	G05009	ST127 A/THATCHER	WATER GOOD HRBR BCH CRK
Metropolitan Boston	Gloucester	G05010	ST127 A/THATCHER	WATER MARSH CREEK
Metropolitan Boston	Gloucester	G05021	ST128	HWY CONCORD ST
Metropolitan Boston	Gloucester	G05025	ST128	HWY MAPLEWOOD AVE
Metropolitan Boston	Hingham	H15012	HWY DERBY ST	ST 3 PILGRIM HWY
Metropolitan Boston	Holliston	H20012	HWY COURTLAND ST	WATER WESTON POND OUTLET
Metropolitan Boston	Hopkinton	H23008	I 495 NB	I 90
Metropolitan Boston	Hopkinton	H23008	I 495 SB	I 90
Metropolitan Boston	Hopkinton	H23011	I 495 SB	HWY W MAIN ST
Metropolitan Boston	Hopkinton	H23011	I 495 NB	HWY W MAIN ST
Metropolitan Boston	Hopkinton	H23012	I 90 RAMP ON&OFF	I 495
Metropolitan Boston	Hudson	H25003	ST 85 WASHINGTON ST	WATER ASSABET RIVER
Metropolitan Boston	Hudson	H25004	HWY HOUGHTON ST	WATER ASSABET RIVER
Metropolitan Boston	Hudson	H25007	ST 62 MAIN ST	WATER ASSABET RIVER
Metropolitan Boston	Ipswich	I01007	ST 1 A/HIGH ST	RR MBTA
Metropolitan Boston	Lexington	L10014	ST 4 BEDFORD ST	I 95 /ST128
Metropolitan Boston	Littleton	L13008	ST119 GREAT RD	WATER BEAVER BROOK
Metropolitan Boston	Littleton	L13017	ST 2	HWY FOSTER ST
Metropolitan Boston	Littleton	L13018	ST 2	RR MBTA/BMRR
Metropolitan Boston	Littleton	L13021	HWY TAYLOR ST	I 495
Metropolitan Boston	Littleton	L13022	I 495 SB	ST 2
Metropolitan Boston	Littleton	L13022	I 495 NB	ST 2
Metropolitan Boston	Littleton	L13023	I 495 SB	RR MBTA/BMRR
Metropolitan Boston	Littleton	L13024	HWY HARWOOD AVE	I 495
Metropolitan Boston	Littleton	L13026	ST 2 A/ST110/KING	I 495
Metropolitan Boston	Littleton	L13028	HWY RUSSELL ST	I 495
Metropolitan Boston	Littleton	L13030	ST119 GREAT RD	I 495
Metropolitan Boston	Lynn	L18016	ST107 WESTERN AVE	WATER SAUGUS RIVER
Metropolitan Boston	Lynn	L18017	HWY BOSTON ST	WATER SAUGUS RIVER
Metropolitan Boston	Lynnfield	L19006	US 1 NEWBRPRT TPK	I 95 /ST128
Metropolitan Boston	Lynnfield	L19014	ST129 SALEM ST	US 1 NEWBURYPORT TPNK
Metropolitan Boston	Marlborough	M06003	HWY ROBIN HLL ST	WATER ASSABET RIVER
Metropolitan Boston	Marlborough	M06004	HWY BOUNDARY ST	WATER ASSABET RIVER
Metropolitan Boston	Marshfield	M07001	HWY UNION ST	WATER NORTH RIVER
Metropolitan Boston	Marshfield	M07003	HWY SEA ST	WATER SOUTH RIVER
Metropolitan Boston	Marshfield	M07004	ST 3 A/MAIN ST	WATER SOUTH RIVER
Metropolitan Boston	Marshfield	M07019	HWY JULIAN ST	WATER SOUTH RIVER
Metropolitan Boston	Maynard	M10002	ST117 GREAT RD	WATER ASSABET RIVER
Metropolitan Boston	Maynard	M10004	ST 62 MAIN ST	WATER ASSABET RIVER

Metropolitan Boston	Maynard	M10007	ST 27 /ST62/WALTHM	WATER ASSABET RIVER
Metropolitan Boston	Medford	M12027	I 93	ST 60 EB/SALEM ST
Metropolitan Boston	Medford	M12028	I 93	ST 60 WB/SALEM ST
Metropolitan Boston	Medford	M12034	HWY FELLSWAY WST	I 93
Metropolitan Boston	Medford	M12036	I 93	WATER MYSTIC RIVER
Metropolitan Boston	Medford	M12044	I 93 RP TO I93 NB	I 93
Metropolitan Boston	Middleton	M20003	ST 62 MAPLE ST	WATER IPSWICH RIVER
Metropolitan Boston	Milford	M21018	I 495 SB	HWY HAVEN ST
Metropolitan Boston	Milford	M21018	I 495 NB	HWY HAVEN ST
Metropolitan Boston	Millis	M23005	ST115 NORFOLK RD	WATER CHARLES RIVER
Metropolitan Boston	Millis	M23006	HWY PLEASANT ST	WATER CHARLES RIVER
Metropolitan Boston	Milton	M25019	HWY WOOD ST	I 93 /US1/ST3
Metropolitan Boston	Milton	M25020	HWY ANTWERP ST	I 93 /US1/ST3
Metropolitan Boston	Natick	N03010	HWY SPEEN ST	RR CSX/MBTA
Metropolitan Boston	Natick	N03011	HWY MILL ST	RR CSX/MBTA
Metropolitan Boston	Needham	N04011	HWY GRT PLN AVE	RR MBTA
Metropolitan Boston	Needham	N04021	HWY HIGHLAND AVE	I 95 SB/ST128 SB
Metropolitan Boston	Needham	N04022	I 95 SB/ST128 SB	HWY CENTRAL AVE
Metropolitan Boston	Needham	N04022	I 95 NB/ST128 NB	HWY CENTRAL AVE
Metropolitan Boston	Needham	N04026	HWY HIGHLAND AVE	I 95 NB/ST128 NB
Metropolitan Boston	Needham	N04027	HWY KENDRICK ST	I 95 /ST128
Metropolitan Boston	Needham	N04029	HWY GRT PLN AVE	I 95 /ST128
Metropolitan Boston	Newton	N12053	HWY PARKER ST	ST 9 BOYLSTON ST
Metropolitan Boston	Newton	N12054	I 95 /ST128	WATER CHARLES RIVER
Metropolitan Boston	Newton	N12056	HWY GROVE ST	I 95 /ST128
Metropolitan Boston	Newton	N12058	ST128 SERVICE RD	WATER CHARLES RIVER
Metropolitan Boston	North Reading	N18008	ST 28 MAIN ST	WATER IPSWICH RIVER
Metropolitan Boston	Peabody	P03001	US 1 SB/NEWBURY	HWY LOWELL ST
Metropolitan Boston	Peabody	P03001	US 1 NB/NEWBURY	HWY LOWELL ST
Metropolitan Boston	Peabody	P03024	I 95 RAMP G	I 95 RAMP F
Metropolitan Boston	Peabody	P03025	I 95 RAMP D	I 95 RAMP C
Metropolitan Boston	Peabody	P03026	I 95 RAMPS A&B	US 1 NEWBURY ST
Metropolitan Boston	Peabody	P03040	I 95 NB	HWY LOWELL ST
Metropolitan Boston	Peabody	P03046	I 95	I 95 RAMP FROM US 1 NB
Metropolitan Boston	Quincy	Q01039	HWY ROBERTSON RD	I 93 /US1/ST3
Metropolitan Boston	Randolph	R01005	I 93 NB/US1SB	ST 24 NB
Metropolitan Boston	Randolph	R01006	ST 24 NB CURVE G	ST 24 SB CURVE S
Metropolitan Boston	Randolph	R01009	I 93 NB/US1NB	ST 28 N MAIN ST
Metropolitan Boston	Randolph	R01012	HWY MDC ACCSS RD	ST 24
Metropolitan Boston	Reading	R03002	ST129 LOWELL ST	RR MBTA/BMRR

Metropolitan Boston	Revere	R05002	US 1 CUTLER HWY	COMB BMRR & LINDEN CRK
Metropolitan Boston	Revere	R05007	ST107 SALEM TPK	WATER PINES RIVER
Metropolitan Boston	Revere	R05009	ST107 BROADWAY	WATER DIAMOND CREEK
Metropolitan Boston	Revere	R05027	US 1 NE XWAY	ST 16 REVERE BCH PKWY
Metropolitan Boston	Revere	R05029	HWY PARK AVE	US 1 NE XWAY
Metropolitan Boston	Revere	R05038	US 1 NE XWAY	ST 60 EB/SQUIRE RD
Metropolitan Boston	Revere	R05039	US 1 NE XWAY	US 1 RAMP & ST60
Metropolitan Boston	Rockland	R08004	ST 3 SB PLGRM HWY	ST228 HINGHAM ST
Metropolitan Boston	Rockland	R08004	ST 3 NB PLGRM HWY	ST228 HINGHAM ST
Metropolitan Boston	Salem	S01006	HWY JEFFRSON AV	RR MBTA/BMRR
Metropolitan Boston	Salem	S01018	ST114 NORTH ST	COMB ST107/BRG ST&MBTA
Metropolitan Boston	Saugus	S05003	ST107 SALEM TNPK	WATER E BR PINES RIVER
Metropolitan Boston	Sharon	S09001	HWY S MAIN ST	RR AMTRAK/MBTA
Metropolitan Boston	Sharon	S09012	I 95 NB	HWY OLD POST RD
Metropolitan Boston	Sharon	S09013	I 95 SB	HWY OLD POST RD
Metropolitan Boston	Sharon	S09014	HWY S WALPOLE ST	I 95 NB
Metropolitan Boston	Sharon	S09015	I 95 SB	HWY S WALPOLE ST
Metropolitan Boston	Sharon	S09016	HWY S MAIN ST	I 95 NB
Metropolitan Boston	Sharon	S09016	HWY S MAIN ST	I 95 SB
Metropolitan Boston	Sherborn	S12003	HWY WHITNEY ST	RR CSX
Metropolitan Boston	Somerville	S17005	HWY CROSS ST	RR MBTA/BMRR
Metropolitan Boston	Southborough	S20006	HWY NORTHBORO RD	RR CSX
Metropolitan Boston	Southborough	S20018	I 495 SB	COMB MDC AQUEDUCT & CSX
Metropolitan Boston	Southborough	S20018	I 495 NB	COMB MDC AQUEDUCT & CSX
Metropolitan Boston	Stoneham	S27007	I 93	HWY BORDER RD ACCESS
Metropolitan Boston	Stoneham	S27008	HWY MARBLE ST	I 93
Metropolitan Boston	Swampscott	S34002	HWY ESSEX ST	RR MBTA/BMRR
Metropolitan Boston	Topsfield	T06001	HWY ROWLY BRG ST	WATER IPSWICH RIVER
Metropolitan Boston	Topsfield	T06004	ST 97 HIGH ST	WATER IPSWICH RIVER
Metropolitan Boston	Topsfield	T06006	US 1 BOSTON ST	HWY HOWLETT ST
Metropolitan Boston	Wakefield	W01015	I 95 /ST128	ST129 WB MAIN ST
Metropolitan Boston	Wakefield	W01018	I 95 /ST128	HWY NORTH AVE
Metropolitan Boston	Wakefield	W01019	I 95 /ST128	RR MBTA/BMRR
Metropolitan Boston	Walpole	W03015	ST 27 ELM ST	RR CSX
Metropolitan Boston	Walpole	W03031	HWY CONEY ST	WATER TRAPHOLE BROOK
Metropolitan Boston	Walpole	W03037	HWY BULLARD ST	WATER WILLETT POND OTLT
Metropolitan Boston	Waltham	W04002	HWY NEWTON ST	WATER CHARLES RIVER
Metropolitan Boston	Waltham	W04024	HWY TRAPELO RD	I 95 /ST128
Metropolitan Boston	Waltham	W04028	RT117 MAIN ST	I 95 /ST128
Metropolitan Boston	Waltham	W04032	US 20 WB/WESTON ST	I 95 /ST128

Metropolitan Boston	Wayland	W11001	US 20 BOSTN PST RD	WATER SUDBURY RIVER
Metropolitan Boston	Wayland	W11002	HWY PELHAM IS RD	WATER SUDBURY RIVER
Metropolitan Boston	Wellesley	W13007	HWY ROCKLAND ST	RR CSX/MBTA
Metropolitan Boston	Wellesley	W13015	HWY CEDAR ST	ST 9 WORCESTER ST
Metropolitan Boston	Wellesley	W13023	I 95 NB/ST128 NB	ST 9 WORCESTER ST
Metropolitan Boston	Wellesley	W13023	I 95 SB/ST128 SB	ST 9 WORCESTER ST
Metropolitan Boston	Wenham	W16003	HWY GRAPEVINE RD	ST128
Metropolitan Boston	Weston	W29017	HWY RIVER RD	I 95 /ST128
Metropolitan Boston	Weston	W29030	HWY RECREATN RD	I 95 /ST128
Metropolitan Boston	Westwood	W31006	HWY EAST ST	US 1 PROVIDENCE HWY
Metropolitan Boston	Weymouth	W32025	ST 3 SB	HWY PLEASANT ST
Metropolitan Boston	Wilmington	W38003	HWY BUTTERS ROW	RR MBTA/BMRR
Metropolitan Boston	Wilmington	W38026	I 93 NB	WATER IPSWICH RIVER
Metropolitan Boston	Wilmington	W38028	I 93 NB	RR MBTA/BMRR
Metropolitan Boston	Wilmington	W38029	ST129 LOWELL ST	I 93
Metropolitan Boston	Wilmington	W38031	I 93	HWY CONCORD ST
Metropolitan Boston	Woburn	W43003	HWY SALEM ST	RR MBTA/BMRR
Metropolitan Boston	Woburn	W43044	HWY OLYMPIA AVE	RR MBTA/BMRR
Metropolitan Boston	Wrentham	W46008	ST121 WEST ST	I 495
Metropolitan Boston	Wrentham	W46009	I 495 SB	RR PCRR (ABANDONED)

