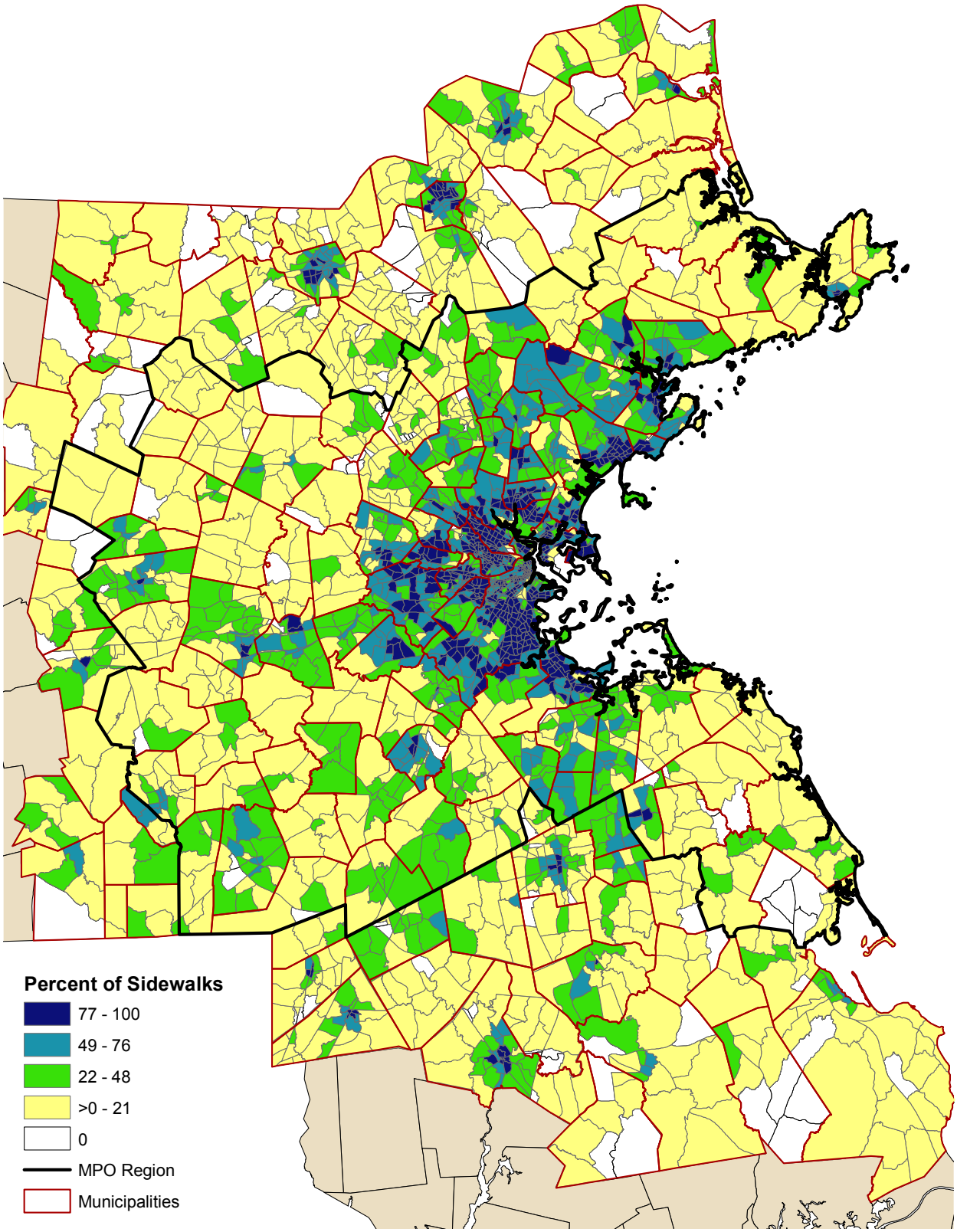
FIGURE 2-8

Percentage of Roads with Sidewalks by Transportation Analysis Zones



dance with the MBTA's Bikes on the T program. There are bicycle parking facilities at most MBTA stations, and they are now added as a matter of course during station reconstructions. The MBTA has also begun a systemwide expansion of bicycle parking facilities, using $50,000 of transit enhancement funding. The MBTA has worked with the Massachusetts Bicycle Coalition (MassBike) and other constituencies to identify bicycle rack locations. MassHighway continues to address nonmotorized-access issues through trail construction and roadway reconstruction projects. To promote bicycling, the MPO is funding bicycle parking at municipal locations through a program administered by MAPC.

Intercity Travel

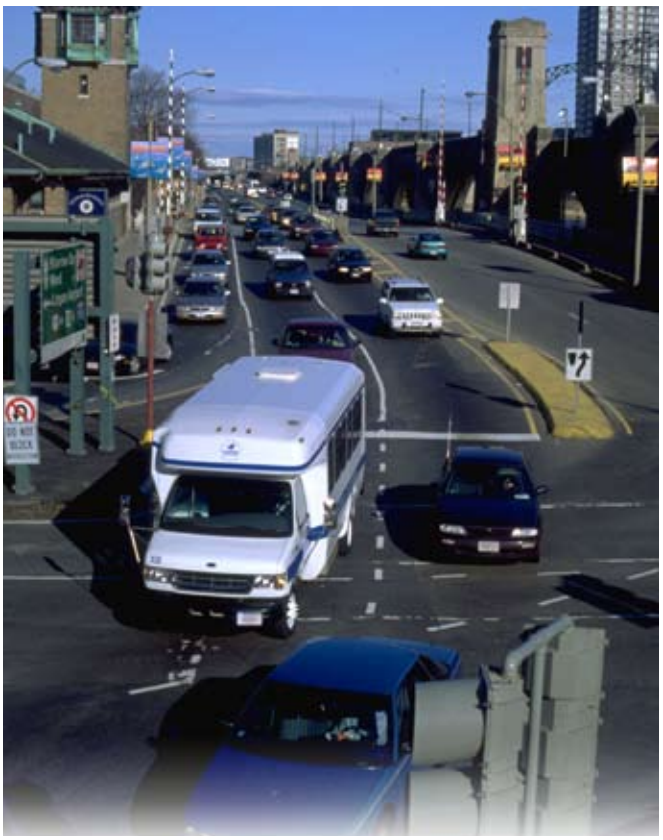
The importance of passenger travel between cities is particularly great in the densely populated New England region and the Northeast Corridor. The Boston region is the largest urbanized area in the six-state New England region. It is significant to intercity travel in New England, both as the major trip generator and as the transportation hub for many trips in which Boston is not the point of origination or destination. Boston's Logan International Airport carries approximately 64 percent of all commercial air passenger trips that pass through New England airports, although the Boston area population composes only about 25 percent of the six-state total.

The Boston region is also the northernmost major metropolitan area in the Northeast Corridor. This rail corridor, which encompasses Washington, D.C., Baltimore, Philadelphia, New York City, Providence, Boston, and the smaller urban areas in between, has historically generated more intercity rail travel than any other region in the nation. Even as the population of the U.S. has dispersed to the south and west, the Northeast Corridor has remained the nation's largest generator of intercity rail traffic.

Boston's location at the northern end of the Northeast Corridor has led to its being a terminus for most of the intercity bus and rail traffic coming through the region from New York City and points south. Boston's proximity to New York City, the nation's largest metropolitan area, has created a situation in which air, bus, and rail frequencies between the two cities surpass the levels seen in almost any U.S. city-pair outside of the Northeast Corridor. Automobile traffic on the major highway routes heading south along the corridor is also greater than that observed on other intercity highways between metropolitan areas outside of the region.

Automobile

The largest share of intercity travel is by automobile. I-95 provides the only direct highway connection to New York City from the Boston metropolitan area. Between Boston and New York, I-95 also serves Providence, Rhode Island, and New Haven, Connecticut. I-95 continues south through the Northeast Corridor to serve Philadelphia, Baltimore, and Washington, D.C. The Massachusetts Turnpike (I-90) provides an alternative route to New York City and the rest of the Northeast Corridor from the Boston region and points



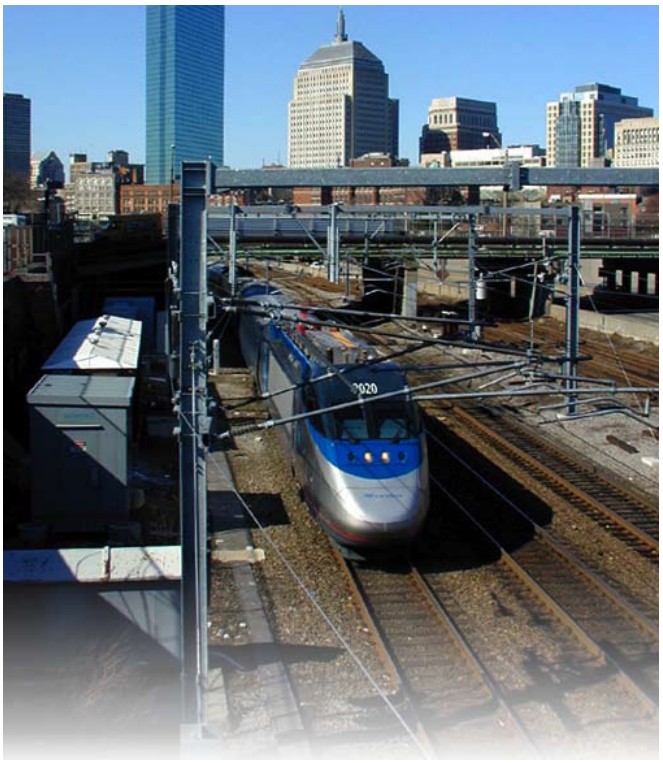
west. The primary variation of this route involves taking the Turnpike to Sturbridge and then using I-84 and I-91 to connect with I-95 in southern Connecticut. To the north, I-93 and I-95 provide access to New Hampshire and Maine.

Airports

The major airports in the Boston region are Logan International Airport and Hanscom Field. Logan Airport, located in East Boston, is owned and operated by MassPort and is the twentieth-busiest airport in the U.S. in terms of the number of passengers. Access to Logan is greatly facilitated by its location, less than two miles from downtown Boston. Currently, approximately 32 percent of people traveling to or from Logan use public transportation. Recently, the MBTA improved transit access to the airport by relocating and modernizing Airport Station, on the Blue Line, and by better connecting the airport with South Station, on the Red Line, via the Silver Line. Service is also provided through the Logan Express bus service and through water shuttles and water taxis.

Hanscom Field, located 20 miles northwest of downtown Boston in the towns of Bedford, Concord, Lexington, and Lincoln, is also owned and operated by MassPort. It is the busiest general-aviation airport in New England, handling business, charter, private, and air-taxi flights. Currently, one commercial carrier operates out of Hanscom. Located three miles from I-95 and Route 128, Hanscom Field is accessible by car and by MBTA bus Route 76 (out of Alewife Station).

In addition to Logan and Hanscom, the MPO includes other public-use airports: three municipally owned (Beverly, Norwood, and Marshfield) and two privately owned (Stow and Marlborough). These airports provide facilities for general aviation services—those not operated by a major airline. Some are termed "reliever" because they offer an alternative to Logan Airport, thereby reducing air traffic and congestion at Logan. The general aviation airports are used by businesses in the region and for flight instruction and recreation.



Intercity Passenger Rail

Amtrak, the nation's passenger rail system, offers daily departures from South Station and North Station in downtown Boston. Amtrak shares both North and South Station rail facilities with the MBTA's commuter rail service, and has connections with the MBTA's rapid transit system at those stations. The intercity bus terminal is also located at South Station. Amtrak trains departing from South Station operate either along the Northeast Corridor route, providing service to Providence, New Haven, New York City, Philadelphia, Baltimore, and Washington, D.C., or along the Lakeshore Limited route, through Framingham, Worcester, and Springfield—which is a stop along the Vermonter route—and then on through New York State and Ohio to Chicago. The trains departing from North Station are for the Downeaster service, which runs between Boston and Portland, Maine.

The MBTA's commuter rail system provides service to other New England cities; these trips are primarily scheduled to coincide with commuting patterns into and out of Boston. The largest cities

served by the commuter rail system are Providence and Worcester, from South Station, and Lowell, from North Station.

Intercity Bus

The vast majority of intercity bus trips that serve the Boston metropolitan area use the South Station bus terminal. Most of this travel consists of long intercity trips, but there are also some suburban commuter trips. Direct service is provided to most major cities and attractions within New England, as well as to New York City, Montreal, and Toronto.

Freight Transportation

A key component of a healthy, vibrant economy in the Boston region is the ability to efficiently move goods and freight within it. This ability requires an infrastructure that allows for the smooth transfer of goods to their final destination. Impediments to movement increase the delivery cost of goods and may adversely affect the economy of the region.

The main modes of freight movement within the region are truck, rail, water, and air; however, truck is the predominant mode.

Truck Freight

The trucking industry, composed of private operators, is highly competitive and depends upon state and local authorities to maintain a safe and efficient highway network. It comprises several major types of operators, including private fleets, for-hire long-distance truckload (TL) carriers, and regional less-than-truckload carriers. The economies of the U.S. and Massachusetts depend on the trucking industry for a majority of the shipments of goods to factories, stores, and households, and each of these types of carriers depends on having a roadway network that meets its needs. Of the freight currently being transported in Massachusetts, 94 percent is carried by truck.

A major problem facing the trucking industry in the Boston region is the lack of a coordinated truck-route policy. Because of the nature of the street patterns developed over the past 350 years, it is common for truck routes to pass through heavily populated residential corridors. This causes a conflict between the desire of residents for a quiet streetscape and the trucking industry's desire for a direct route between the origin and destination. Under Massachusetts law, a community must gain permission from MassHighway before restricting truck traffic.

Another issue affecting the trucking industry is bridge-weight restrictions. Currently, there are approximately 155 "posted" bridges in the region. Posted bridges have signs at both ends informing drivers of the bridge's vehicle-weight restrictions. A bridge is posted if it is either designated as "functionally obsolete" because it has not been designed to support modern trucks, or if it is designated as "structurally deficient" due to significant deterioration of the bridge deck, supports, or other major components. Closed and weight-restricted bridges sometimes require long detours, resulting in increased shipping costs and reduced efficiency.

In addition, more off-road parking facilities for trucks are needed to allow truckers to pull off the road to check their vehicles and/or to sleep.

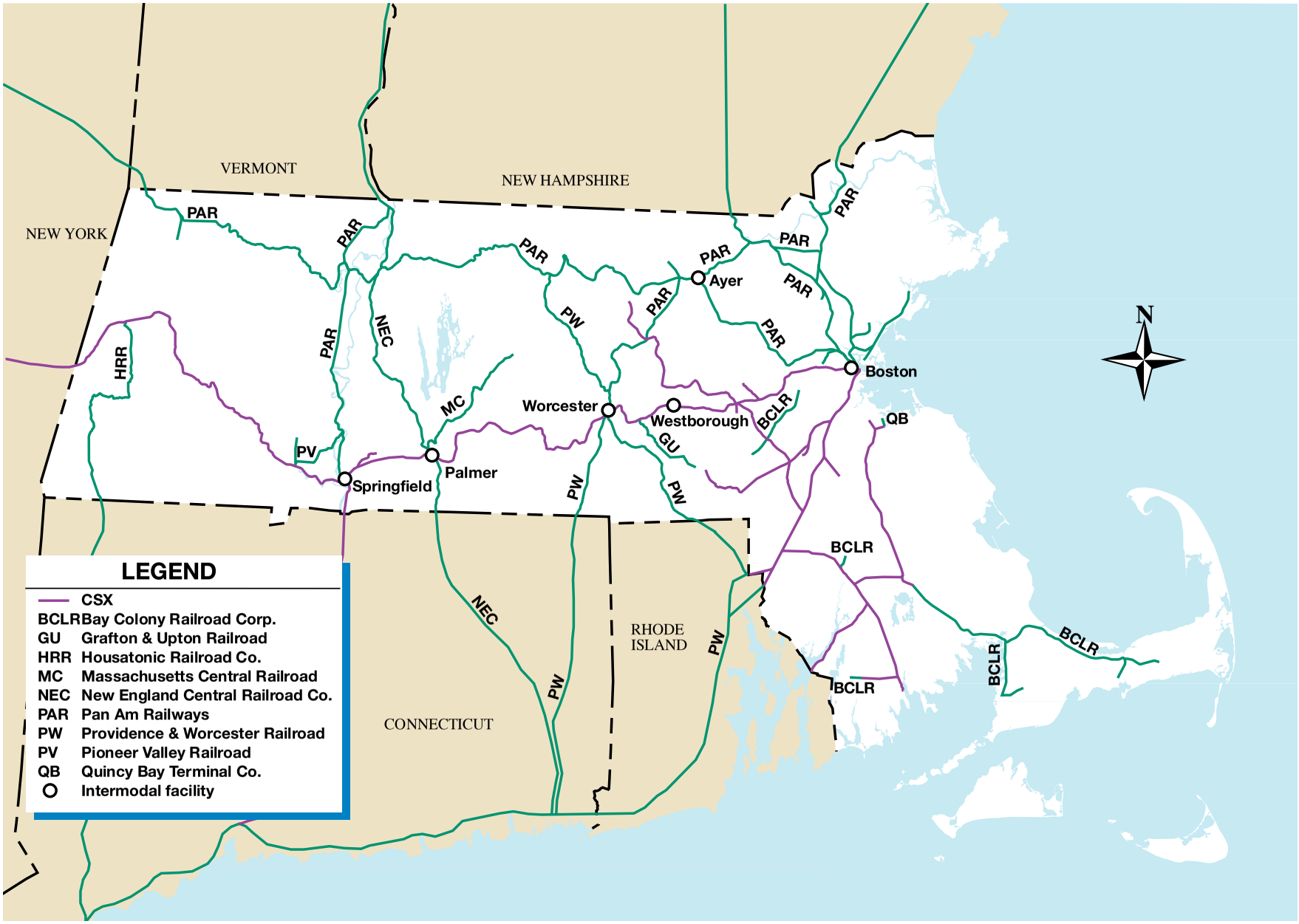
Rail Freight

The rail industry is also an important operator of freight transportation within the Boston MPO area. Four rail freight carriers operate within the region: CSX Transportation, Pan Am Railways, Bay Colony Railroad Corporation, and Fore River Transportation Company. CSX is the only Class I railroad in the Boston region and in Massachusetts. A Class I railroad is a line-haul freight railroad with annual operating revenues in excess of $289 million.

Figure 2-9 shows the freight rail lines and operators within the Boston Region MPO area and throughout Massachusetts. The CSX Transportation main line runs from Boston to Albany, New York, and serves as a major east–west rail corridor for interstate service in Massachusetts. It

FIGURE 2-9

MASSACHUSETTS FREIGHT RAIL LINES: OPERATIONAL JURISDICTION



connects the national system to most of the other rail lines. Pan Am (formerly Guilford Rail System) operates on the former Boston & Maine Railroad routes and provides access to northern New England and upstate New York. The Bay Colony Railroad engages in line-haul (fixed- or dedicated-route) services in southeastern Massachusetts and Cape Cod. Fore River Transportation Company (formerly Quincy Bay Terminal Railroad) operates from Quincy to Braintree, where it interchanges with CSX.

Products shipped by rail include automobiles, chemicals, containers (with and without chassis), and bulk products. Over the last two decades, the trucking and rail industries have created a closer link to one another through the use of container shipping and double-stacking on rail. Primarily used over long routes, double-stacking has increased the potential competitive advantage for rail shipping. In the Boston region, bridge clearances over railroad rights-of-way do not allow for double-stack rail cars. A minimum of 21 feet of vertical clearance is required to allow for double-stacking. There are approximately 56 bridges with less vertical clearance than that. Also, as discussed below, the Port of Boston has no direct rail access.

Water Freight

The ports of the MPO region and Massachusetts (shown in Figure 2-10) have played a key role in the economic development of New England since the 1600s. The main ports are located in Boston, Gloucester, and Salem.

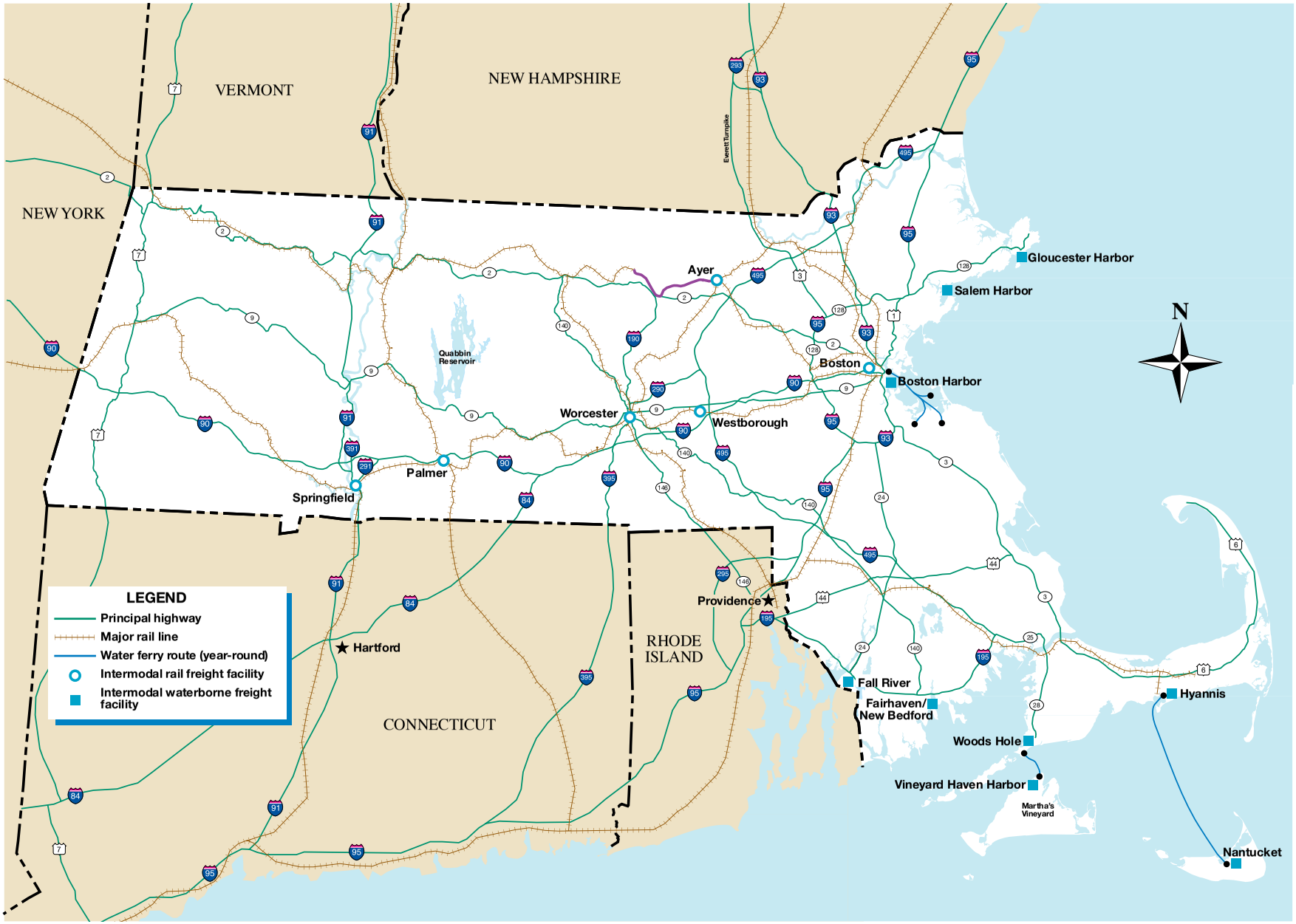
The Port of Boston is the major gateway in Massachusetts for international shipping. It includes a number of terminals and other port facilities. Conley Container Terminal is a 101-acre, multi-berth terminal with 50 acres of storage space. All cargo is unloaded from the ships onto trucks. On average, 900 to 1,000 trucks move in and out of Conley Terminal daily. Currently there is no rail service directly into or out of Conley Terminal. For rail connections, trucks take cargo to rail transfer facilities such as the one at Beacon Park Yards in Allston, four miles from the terminal.

Moran Container Terminal and Mystic Pier One in Charlestown are used for the importing and processing of automobiles. Moran Terminal has the potential for rail service over the Mystic Wharf Branch rail line, a 1.45-mile track in Charlestown. Massport purchased this rail line from Pan Am Railways (formerly Guilford Rail System) in 2002 to preserve rail access to the port. Pan Am Railways has discontinued service and this branch is now considered inactive.

The Massport Marine Terminal/North Jetty is located on the waterfront in the Marine Industrial Park in South Boston (site of the former South Boston Army Base). Approximately 10 acres of the site is dedicated to modern seafood processing or related facilities that support the region's fishing industry. Massport recently awarded a bid for the redevelopment of the remaining 30 acres of the North Jetty area. The redevelopment will allow for the handling of bulk and conventional

FIGURE 2-10

MASSACHUSETTS COMMERCIAL PORTS



cargo and for refrigerated warehousing. This site has access to the highway system via designated truck routes. There is also a potential rail connection to this site.

Other facilities in the Port of Boston include the East Boston Shipyard and Marina; Mystic Piers and Medford Street Terminal in Charlestown; and the Boston Fish Pier, International Cargo Port, and Fargo Street Terminal in South Boston.

The Port of Boston annually handles more than 1.3 million tons of general cargo, 1.5 million tons of nonfuel bulk cargo (salt, gypsum, cement, automobiles), and 12.8 million tons of bulk fuel cargos (petroleum and liquefied natural gas). Approximately 95 percent of all freight shipped into the Port of Boston has a final destination within 75 miles. Major trade routes from Boston include barge service to New York and Canada and scheduled container ship service from Europe and Asia.

The Port of Salem is owned and operated by the New England Power Company. More than one million tons of coal and three million barrels of oil are delivered to the port annually. Landside access to the port is by truck. Existing rail service is one mile from the port.

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 connects to Route 128 via local roadways 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.

Air Freight

Logan Airport currently serves as the only significant air freight terminal in the Boston region. In 2005, Logan Airport ranked 18th in the nation in terms of cargo handled. The major intermodal freight movement to and from Logan is by truck. Freight transported by air usually has at least one of the following characteristics: time sensitivity, high value-to-weight ratio, and perishability. There is no freight rail access to Logan Airport, and no provisions for it are likely to develop. Currently, little freight is handled at Hanscom Field.

Further information on all modes of travel as they relate to the policies adopted by the MPO is included in Chapters 5 through 11.