



ILLUSTRATIVE PROJECTS

PROJECT SELECTION CRITERIA

In selecting projects for this JOURNEY TO 2030 Amendment, the MPO was guided by its visions and policies, as well as by up-to-date information from many sources. The visions and policies of the MPO are outlined in Chapter 4 of this document.

TRANSPORTATION NEEDS AND FINANCIAL CONSTRAINT

One important factor limiting project selection for the Amendment was the financial-constraint requirement of the long-range transportation plan. There will not be adequate financial resources to construct all of the projects identified in JOURNEY TO 2030, so the MPO was required to eliminate many worthy projects needed to achieve the visions and goals for the region that had been included in the original JOURNEY TO 2030. While the MPO has worked to use the available funding in a way that produces the optimal benefit, many projects that would help to maintain the existing system and also allow for future expansion or enhancement could not be included in this financially constrained Plan Amendment.

Taking into consideration the findings of the Transportation Finance Commission presented in its two reports—*Transportation Finance in Massachusetts: An Unsustainable System*, released in March 2007, and *Transportation Finance in Massachusetts: Volume 2 Building a Sustainable Transportation Financing System*, released in September 2007—the MPO believes that funding dedicated to transportation in the commonwealth and the MPO area, in particular, are inadequate in both the near term and long term. The reports estimated that over the next 20 years, the cost just to maintain our transportation system exceeds the anticipated resources available by \$15 to \$19 billion dollars. As part of this, the MBTA faces a \$2.7 billion maintenance backlog.

The reports findings indicate that the conditions of the commonwealth's roads, bridges, and transit are all in decline. The MBTA is struggling to achieve a state of good repair. It projects that \$570 million is needed every year to maintain such a state, but with its limited resources, it can only spend \$470 million per year. MassHighway has not been able to adequately fund upkeep and rehabilitation of its highways and bridges, which has led to a long list of postponed road and bridge maintenance and repair projects. The bridges and parkways of the Department of Conservation and Recreation also have immediate needs for maintenance and repair. In addition, the Massachusetts Turnpike Authority has been underinvesting in maintenance and rehabilitation of its facilities. Since the reports were published, MassHighway has implemented the Accelerated Bridge Program to address some of this backlog, but this program is funded entirely via debt, and the servicing of this debt will cut into not only federal transportation funds in future years, but also state gas tax revenue. The additional transportation funding provided by the legislature in Section 1 of Chapter 35 of the Acts of 2009 provides no net new revenue for expansion or enhancement projects.

Since the MPO cannot fund all of the projects that it believed necessary for maintenance of the existing system and for allowing for future expansion or enhancement of the transportation system, it voted to include illustrative projects as part of this Plan Amendment. Illustrative projects are defined as projects that meet the MPO's criteria for selection, but which are not included in the recommended list of projects because there is not sufficient revenue to fund them.

THE ROLE OF ILLUSTRATIVE PROJECTS

The MPO believes strongly that the region is best served by improving the transportation system in terms of both maintenance and expansion, and

it aspires to achieve much more than is permitted under the existing fiscal constraint. To stay competitive with other geographic regions across the country and throughout the world, the greater Boston region must fund enhancements that increase the capacity of the existing system as well as expanding it. These projects will foster quality of life improvements and economic prosperity by relieving traffic congestion, improving the movement of people and goods, and linking employment centers to provide employees with better mobility options.

The illustrative projects identified below, although unfunded in this Amendment, are important elements of the region's future transportation system. They include projects with significant regional benefits and projects that invest in important existing infrastructure. They are also needed to fully attain the region's visions and goals, discussed above. There are many other projects that were not included in the list that would improve safety and mobility and advance the region's visions and goals.

The MPO intends to continue working with state and federal partners to advance these projects through the planning process, in order to be prepared for the future.

ILLUSTRATIVE PROJECTS TO MAINTAIN THE EXISTING SYSTEM

Taking into consideration the significant cost of maintaining and upgrading the existing system, it is important to make sure that if a substantial portion of any transportation funding becomes available, it should be dedicated to maintaining and upgrading the existing system as needed. This would include the preservation of existing roadways and bridges, the maintenance and upgrade of the existing public transportation system, and the maintenance of our freight system, including rail and port facilities. Specific projects that the MPO voted to include in the illustrative proj-

ects list that would maintain the existing system include:

- A group of projects that would help the MBTA commuter rail system to operate more efficiently and allow for expansion of various commuter rail lines in the future. They include:
 - South Station Track Capacity Expansion
 - Grand Junction Connection Reconstruction
 - Attleboro Line Track Expansion
 - Midday and Overnight Layover Facilities
 - Ruggles Station Platform Expansion
- Massachusetts Turnpike – Bridge Deck Reconstruction of the Boston Viaduct
- Massachusetts Turnpike – Bridge Deck Widening/Reconstruction of the Mainline over Route 128/I-95 and Charles River
- Massachusetts Turnpike – Sumner Tunnel Plenum/Ceiling Rehabilitation

ILLUSTRATIVE PROJECTS THAT ADD CAPACITY

In addition, the MPO voted to include a list of expansion projects to allow for future expansion or enhancement of the transportation system if additional funding becomes available. They include:

Transit Projects:

- Compact Communities: Urban Ring, Phase 2
- Boston: Silver Line, Phase III
- Revere to Lynn: North Shore Transit Improvements

Highway Projects:

- Concord: Concord Rotary
- Marlborough and Hudson: Interstate 495/Interstate 290/Route 85 Connector Interchange Improvements

- Weymouth to Duxbury: Route 3 South Additional Lanes

The MPO is also dedicated to funding local road improvements and providing transportation enhancements to preserve and restore components of the surface transportation system, including bicycle and pedestrian projects. Under the current financial constraint, the MPO was also unable to fund as many projects under this category as it would have liked to advance its vision for the region.

The next section of this chapter provides a map of the projects listed above and a more detailed description of each.

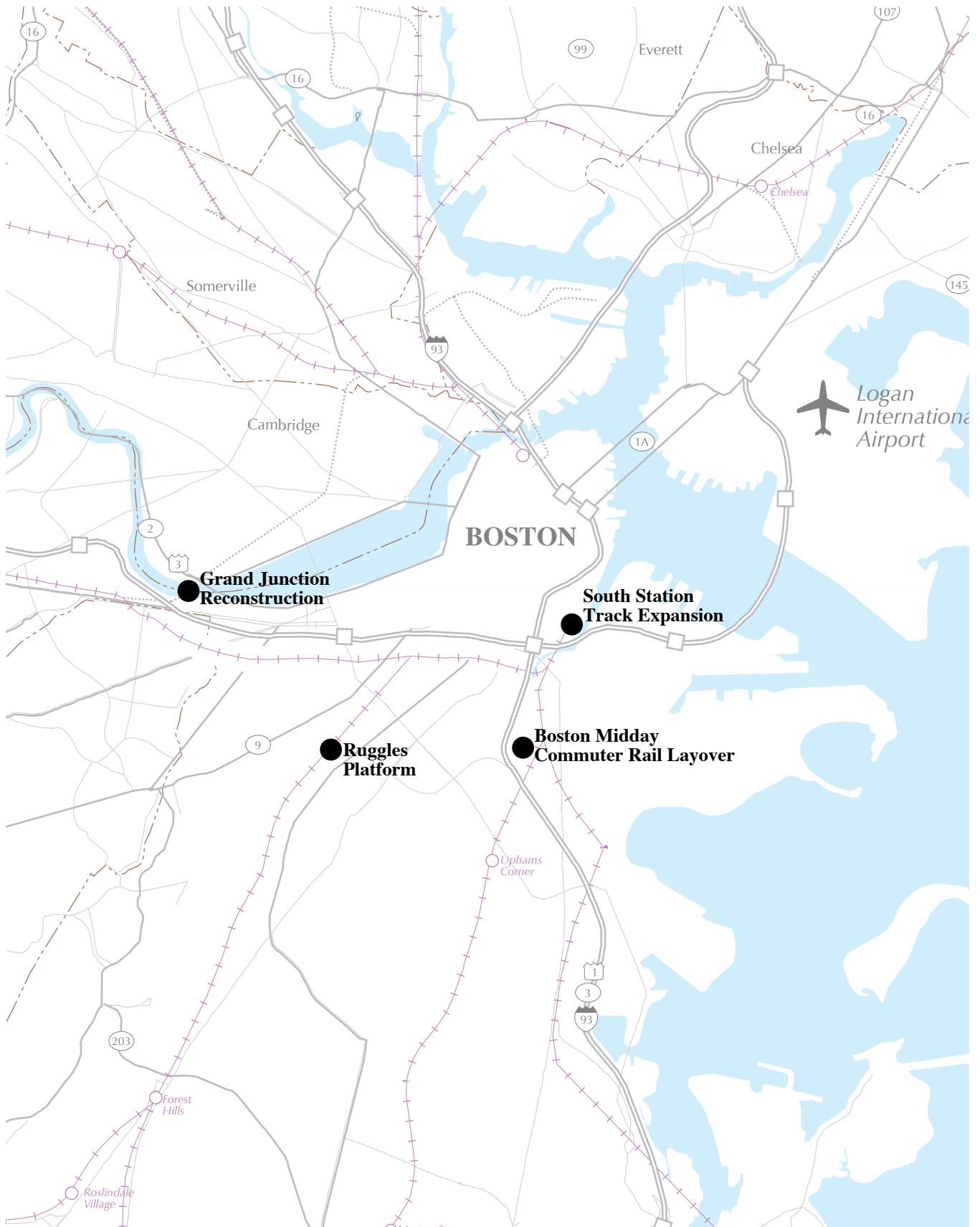
SOUTH SIDE COMMUTER RAIL CAPACITY IMPROVEMENTS (\$268,900,000)

Description

These improvements would include the following:

- South Station Track Expansion (\$150,000,000) – South Station is currently at capacity; additional track space is required to expand commuter rail service needed to accommodate future ridership demand. Up to 5 additional tracks are proposed and would be constructed after relocation of the U.S. Postal Service facility.
- Grand Junction (\$10,000,000) – Reconstruction of the Grand Junction Connection to link North and South Stations in Boston. The Commonwealth of Massachusetts is working on an agreement with CSX Inc. for purchase of the eastern Massachusetts freight rail lines, which includes the Grand Junction track that connects Boston's North Side and South Side service.
- Boston Midday Commuter Rail Layover (cost – to be determined) – Construction of a mid-day and overnight storage facility in Boston to minimize the deadheading of trains and accommodate growth of MBTA and Amtrak services.
- Ruggles Platform (\$12,900,000) – Construction of an additional commuter rail platform to enable trains using Track 2 to serve passengers at Ruggles Station. Track 2 does not currently have the ability to serve passengers, and therefore several inbound trips during the peak period on the Providence/Stoughton and Franklin commuter rail lines bypass Ruggles Station. The proposed platforms would allow existing riders to avoid the Back Bay Station detour and eliminate a track bottleneck on the Northeast Corridor.
- High Speed Rail Projects – Attleboro Third Track (\$96,000,000) -- Track expansion on the Attleboro commuter rail line to facilitate service growth of MBTA and Amtrak rail travel in the long term. The project includes the addition of a 1,500 to 2,000 foot main line pocket track at Canton Junction and a third track from Canton Junction to Readville. The pocket track would provide a place to hold westbound Providence/Stoughton Line trains while awaiting clearance to cross eastbound tracks. The project would also add passing siding at Sharon on the Attleboro commuter rail line.

MAP 16-1 SOUTH SIDE COMMUTER RAIL CAPACITY IMPROVEMENTS



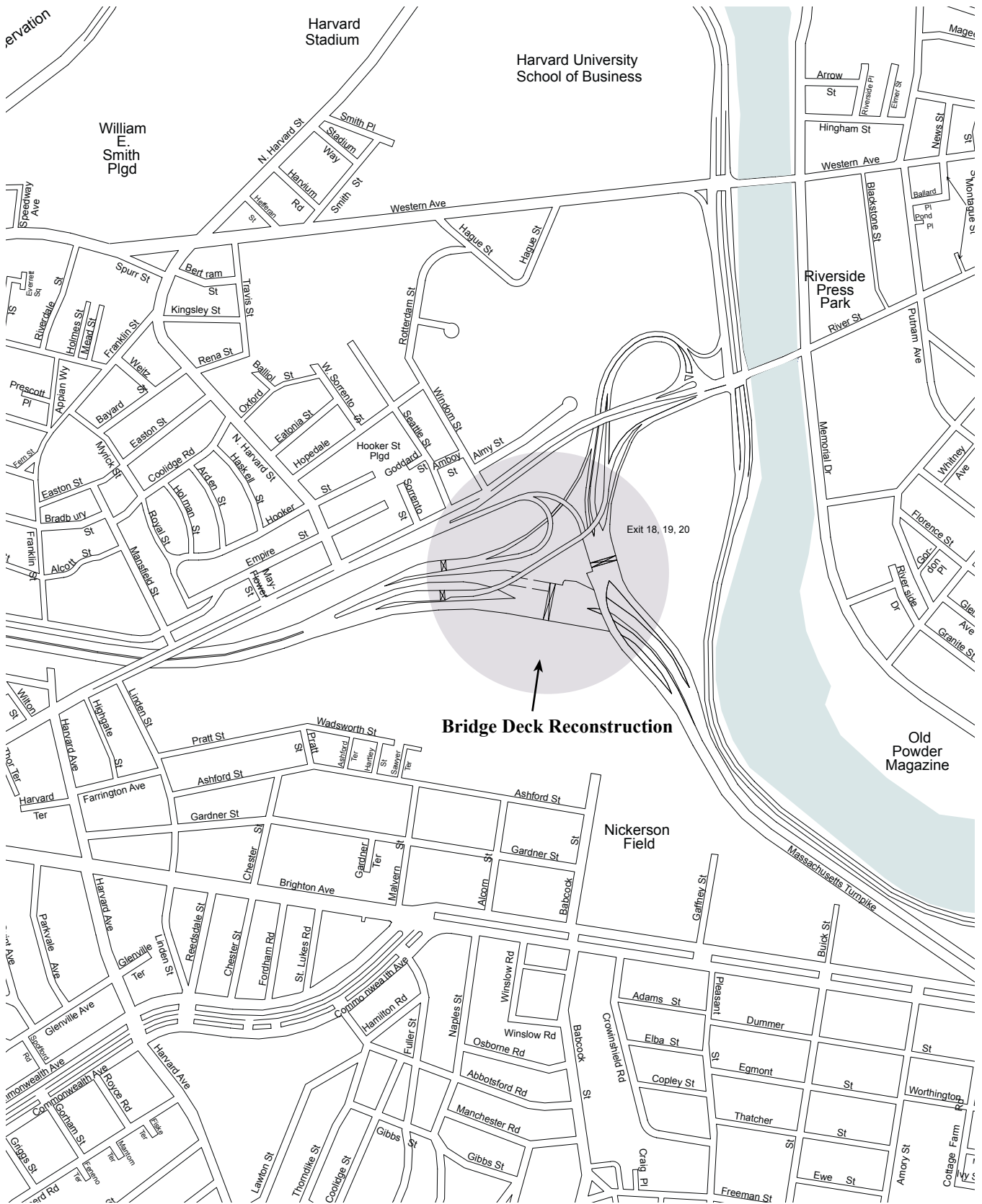
BOSTON: BRIDGE DECK RECONSTRUCTION BOSTON VIADUCT: STRUCTURE 111 (\$65,000,000)

Description

This project would replace the concrete deck structure and bridge joints and repair the structural steel, concrete piers, and abutments of the Boston Viaduct. The eight-lane structure was built in 1965, and the existing bridge deck surface was repaired in 1980. No work has been done since and the deck is currently rated 4 under the National Bridge Inventory program. A rating of 4 is considered poor and the bridge is classified as a structurally deficient structure.

MAP 16-2

BOSTON: BRIDGE DECK RECONSTRUCTION BOSTON VIADUCT: STRUCTURE 111



NEWTON AND WESTON: BRIDGE DECK WIDENING/RECONSTRUCTION MAINLINE OVER ROUTE 128/95 AND CHARLES RIVER (\$45,000,000)

Description

This project would replace the six-lane concrete deck structure and widen the eastbound side from three lanes to five lanes. The five-lane configuration would be separated into two sections, a three-lane section to accommodate the through traffic at the mainline toll plaza 15, and a two-lane section to accommodate Route 128/I-95 ramps and local roads. The five-lane section would transition back to three lanes just before the railroad underpass, approximately 1,600 feet to the east. No major deck work has been performed since the six-lane structure was built in 1965. The deck is rated 5 and the bridge joints are rated 4 under the National Bridge Inventory program. A rating of 4 is considered poor and the bridge is classified as a structurally deficient structure. A rating of 5 is nearing a deficient classification.

MAP 16-3 NEWTON AND WESTON: BRIDGE DECK WIDENING/ RECONSTRUCTION MAINLINE OVER ROUTE 128/95 AND CHARLES RIVER

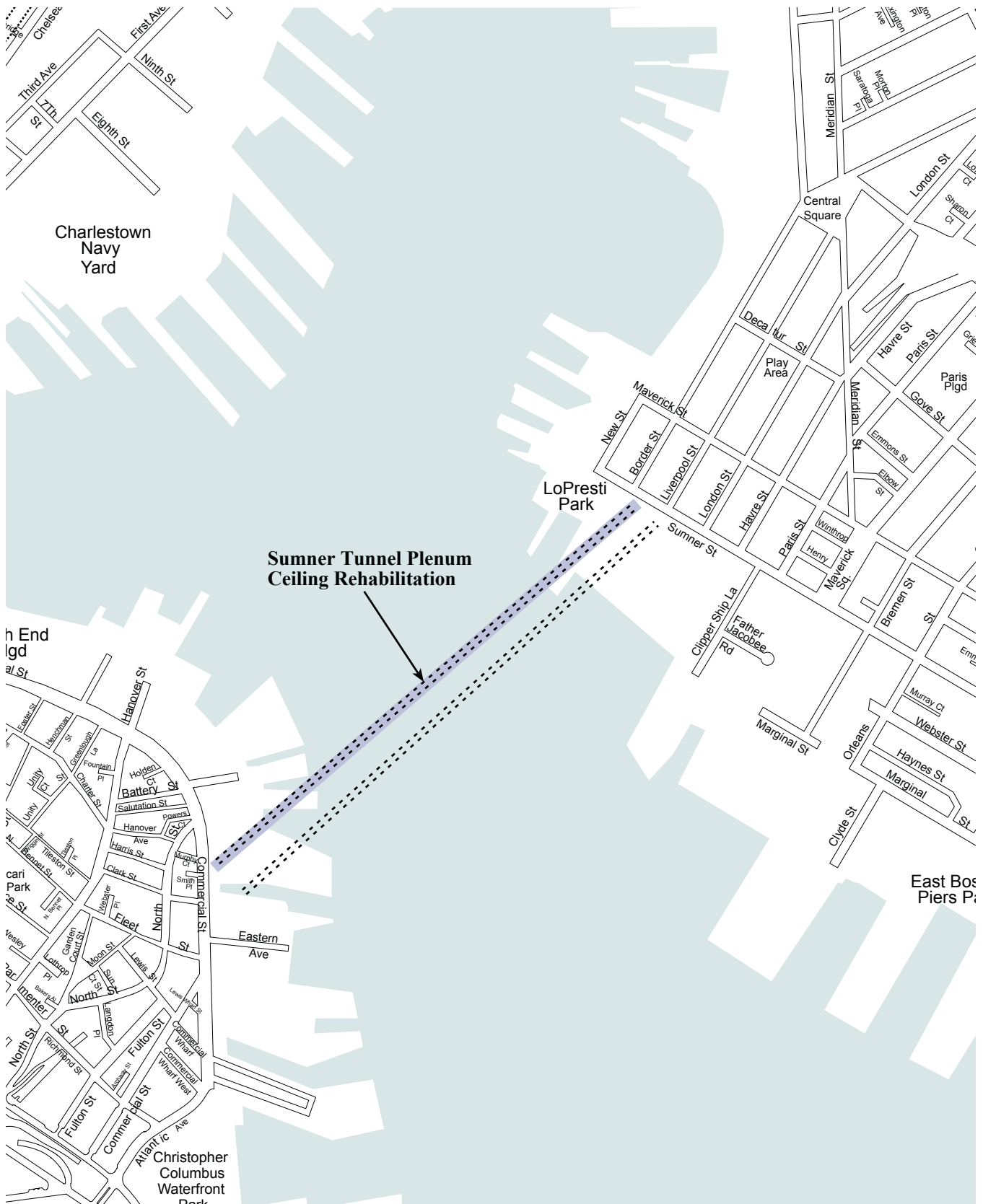


BOSTON: SUMNER TUNNEL PLENUM/CEILING REHABILITATION (\$25,000,000)

Description

This project would repair the ceiling and the deck surface of the Sumner Tunnel. The concrete exhaust plenum lining would be repaired to prevent further spalling that could lead to future anchor safety issues. The project would also replace the roadway deck surface, which contains the original concrete from 1934 and is showing signs of major deterioration.

MAP 16-4 BOSTON: SUMNER TUNNEL PLENUM/CEILING REHABILITATION



COMPACT COMMUNITIES: URBAN RING PHASE 2 (\$2,706,000,000)

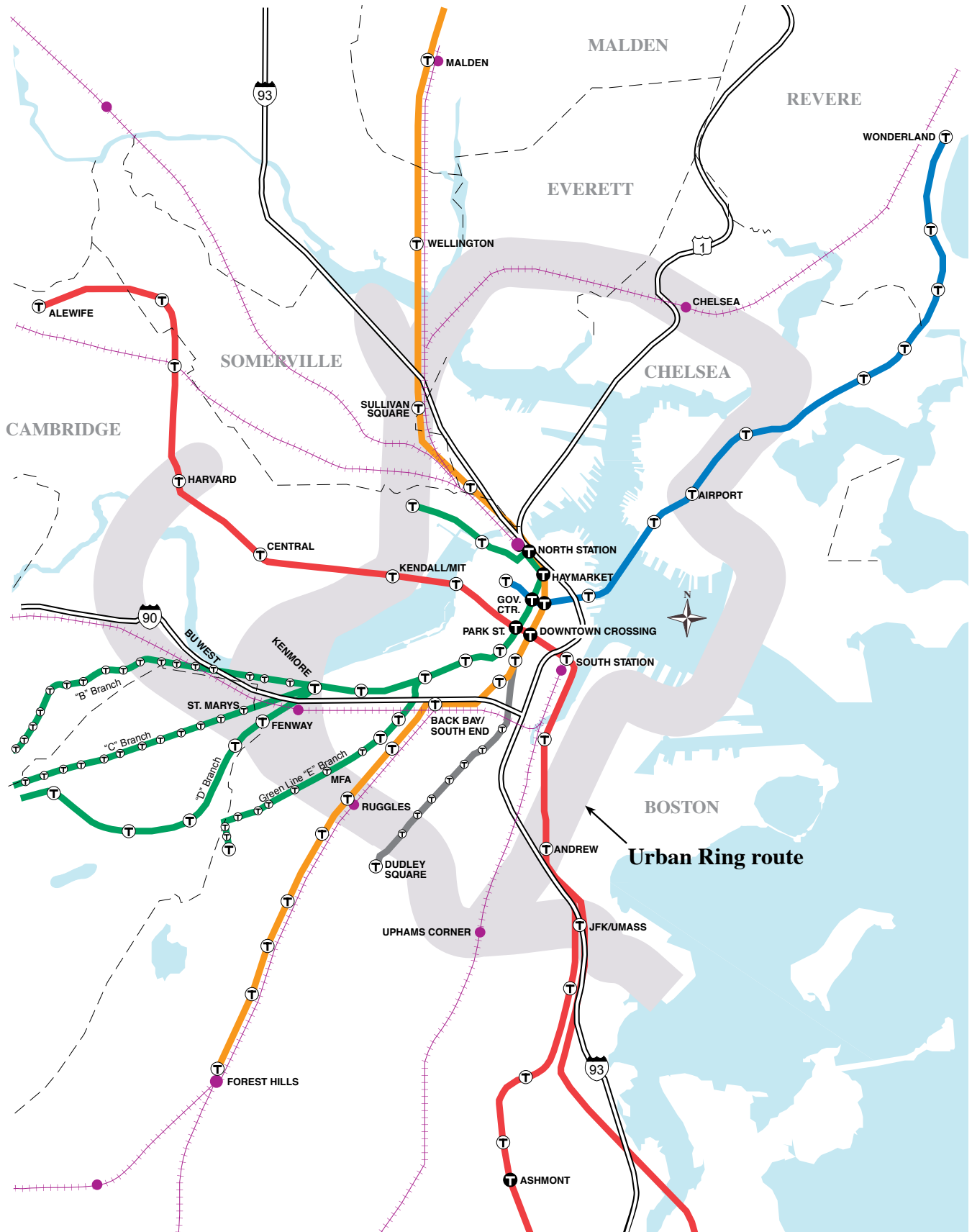
Description

The Urban Ring Phase 2 is a proposed major new bus rapid transit (BRT) system that would run in a roughly circular corridor through employment centers, residential neighborhoods, and major educational and medical institutions in Boston, Brookline, Cambridge, Chelsea, Everett, Medford and Somerville. The Urban Ring would provide faster and more direct transit connections between points in the ring and from the MBTA's existing radial rapid transit system to destinations in the ring. The project would also include BRT service enhancements to enable buses to operate more like rapid transit; these include segments of dedicated busway, bus lane, and tunnel; high-frequency service on high-capacity, low-emission 60-foot articulated buses; widely-spaced, substantial transit stations with a strong transit identity; and advanced communications and technology, including transit signal priority and real-time traveler information. As a result, the Urban Ring would improve transit access, travel times and capacity, while also reducing crowding in the central subway system and offering opportunities for transit oriented and smart growth development.

EOT filed a Revised Draft Environmental Impact Report/Draft Environmental Impact Statement (RDEIR/DEIS) in November 2008. This document included EOT's recommendation for a bus rapid transit (BRT) alignment through the 25-mile Urban Ring corridor, with 184,000 projected daily transit riders. Given the significant capital costs associated with the project (\$2.7 billion in 2009 dollars) and the competition for limited state and federal transportation funds, EOT is currently exploring options for a phased implementation approach for this project. Under this approach,

a segment or segments of the recommended alignment could be targeted for further advancement through additional technical studies or full or partial implementation of capital improvements and BRT service identified in the RDEIR/DEIS.

MAP 16-5 COMPACT COMMUNITIES: URBAN RING PHASE 2

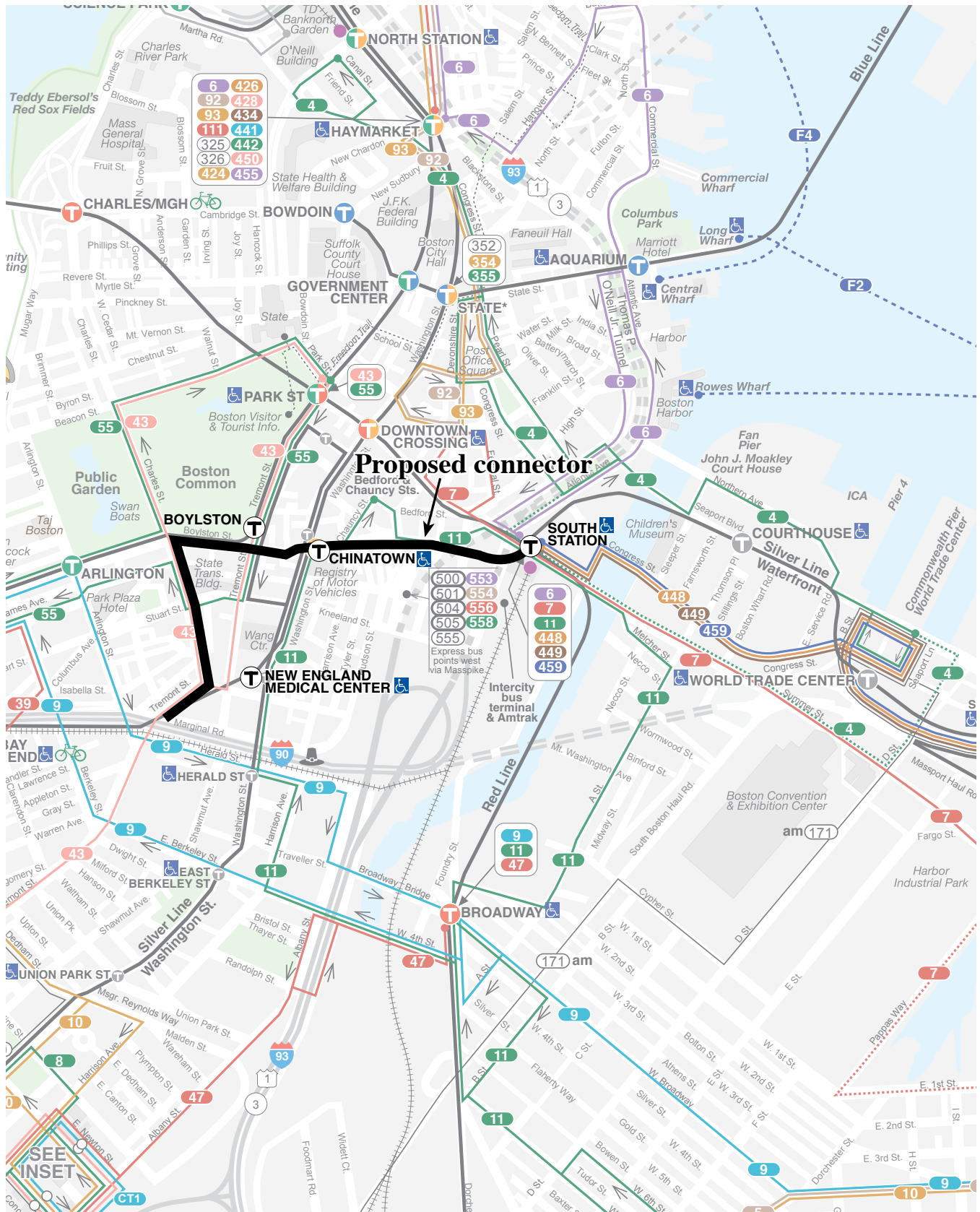


BOSTON: SILVER LINE PHASE III: SOUTH STATION-BOYLSTON CONNECTOR (CONSTRUCTION COST - \$1,800,000,000)

Description

The third phase of the Silver Line is composed of a bus-rapid-transit (BRT) tunnel that would connect the existing Silver Line service on Washington Street (which opened in 2002) to the existing Silver Line service on the South Boston Waterfront (which opened in 2004). The project would include two stations: one to connect to the Green Line at Boylston Street Station and one to connect to the Orange Line at Chinatown Station. Upon its completion, transit customers in Lower Roxbury and the South End will have direct access to the existing subway systems (with connections to the Green, Orange, and Red Lines) as well as direct access to the South Boston Waterfront and Logan International Airport.

MAP 16-6 BOSTON: SILVER LINE PHASE III: SOUTH STATION-BOYLSTON CONNECTOR



REVERE TO LYNN: NORTH SHORE TRANSIT IMPROVEMENTS (\$695,600,000)

Description

Blue Line Extension via Eastern Route Mainline

This project would consist of maintaining the existing Wonderland Station and constructing a connection to the Eastern Route Main Line (ERML) right-of-way that runs from north of the station to Lynn. This alternative utilizes a portion of the former Narrow Gauge right-of-way (the former Boston, Revere Beach, and Lynn Railroad) to a point just north of Revere Street, where a new set of elevated tracks would be constructed, running northwest for approximately 2,400 feet before joining the ERML approximately 250 feet south of Bridge Street. Through the Rumney Marsh area, the Blue Line would be constructed on a separate trestle approximately 80 feet east of the ERML embankment. At the Saugus River, the Blue Line extension alignment would cross the Saugus River on a new high-level, fixed-span bridge.

North of the Saugus River, the Blue Line extension would share the ERML right-of-way through Lynn with the two existing MBTA commuter rail tracks. The Blue Line tracks would remain elevated after crossing the Saugus River to enable a grade-separated crossing of the General Electric (GE) Riverworks complex. Immediately north of the GE Riverworks complex, the Blue Line tracks would descend to grade on the east side of the commuter rail tracks, sharing the embankment with the two commuter rail tracks. New bridges at Commerce Street, Shepard Street, Blossom Street, and Pleasant Street would be needed to accommodate the new tracks.

At Lynn Station, the existing commuter rail tracks and center-island platform would be retained. A new center island platform east of the existing platform would serve the Blue Line extension. To make the transfer between commuter rail and the Blue Line, passengers would descend from one platform to street level and then ascend to the other platform.

MAP 16-7 REVERE TO LYNN: NORTH SHORE TRANSIT IMPROVEMENTS



CONCORD: CONCORD ROTARY/ROUTE 2 (\$43,264,000)

Description

This proposed project will remove the rotary at the intersection of Route 2, Route 2A, Barrett's Mill Road, and Commonwealth Avenue in Concord. On the basis of a February 2003 feasibility study, three design alternatives are progressing: a full-diamond interchange, a half-diamond interchange on the north side of Route 2 with a quarter cloverleaf in the south quadrangle, and a quarter cloverleaf in the south quadrangle with ramps further north on Route 2. Each alternative includes grade separation of Route 2 from Route 2A and the local roads.

Project's Context/Possible Impacts, by MPO Policy Area

Land Use

The project area in Concord is zoned mainly for residential, limited business, and some industrial uses.

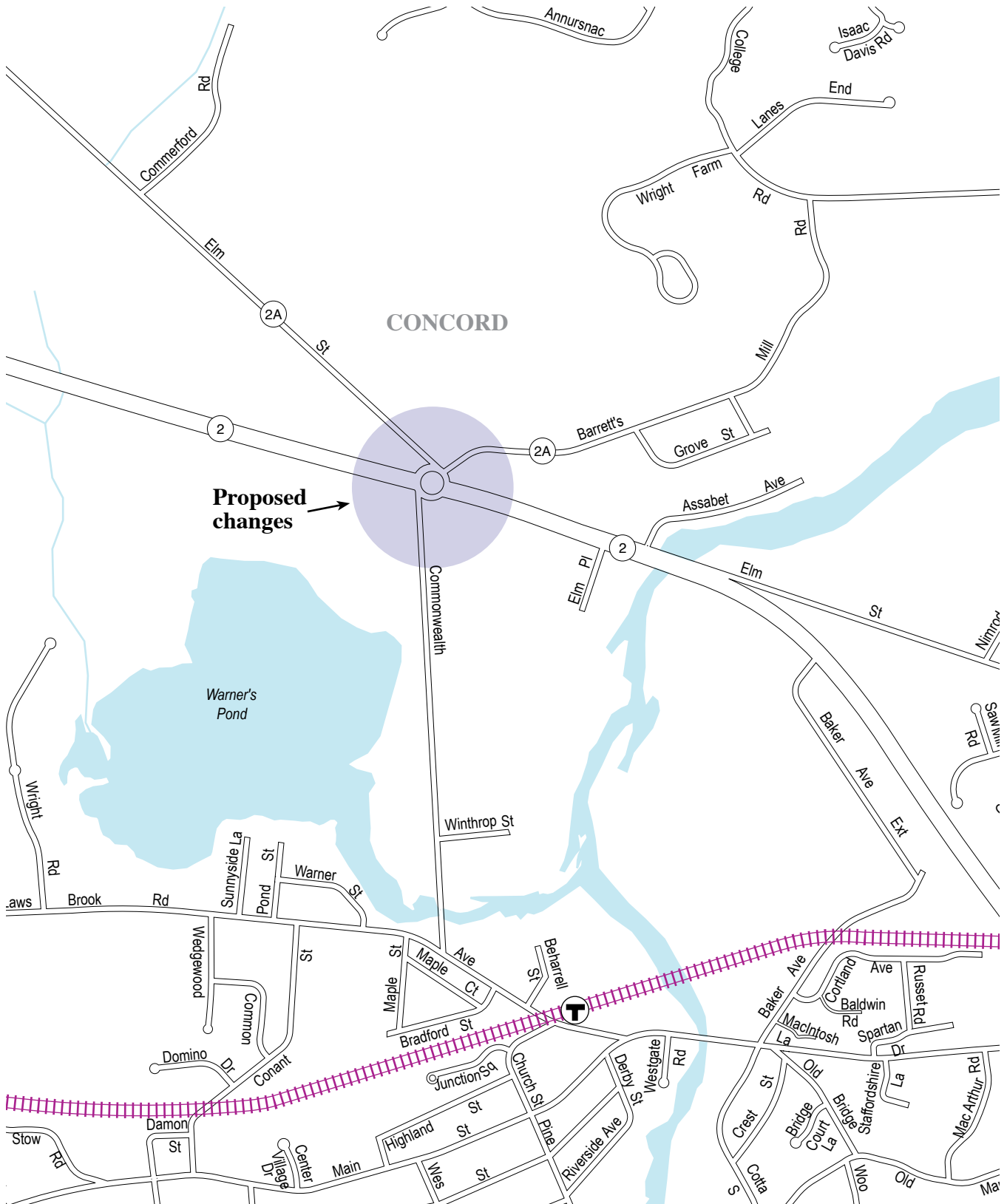
Safety

This project is located at a high-crash location: between 1999 and 2001, the Concord Rotary was the site of 202 crashes, of which 165 involved only property damage, 37 involved bodily injury. As such, it ranked #99 on the list of the state's high-crash intersections.

Mobility

According to the Route 2/Crosby's Corner draft environmental impact report and environmental assessment done in 1998, Route 2 is one of the five busiest radial routes extending towards Boston within eastern Massachusetts and is used as a radial commuter route during the week. The inbound peak hour traffic flow in the AM and the outbound flow in the PM represent approximately 60 percent of the two-way traffic. Based on 2003 MassHighway traffic counts, the average daily traffic on Route 2 east of the Concord Rotary was approximately 47,100 vehicles.

MAP 16-8 CONCORD: CONCORD ROTARY/ROUTE 2



MARLBOROUGH AND HUDSON: I-495/I-290/ROUTE 85 CONNECTOR INTERCHANGE (\$29,852,000)

Description

Construct a flyover ramp from I-495 northbound to I-290 westbound and a flyover ramp from I-290 eastbound to I-495 northbound. Specifically, the changes will include:

- The replacement of the current ramp from I-495 southbound to I-290 westbound with a two-lane ramp, realigned to provide a safer turning radius.
- The replacement of the existing clover-loop ramp from I-495 northbound to I-290 westbound with a two-lane flyover from I-495 to I-290 on the left side, well past the I-495 southbound/I-290 westbound merging area.
- The replacement of the existing clover-loop ramp from I-290 eastbound to I-495 northbound with a two-lane flyover, designed to provide a safer turning radius. Also, the existing loop ramp in the northwest corner of the interchange will be realigned to accommodate the new ramp configuration.

As part of this project, Celluci Highway (Route 85 Connector) will be widened from two lanes to four lanes from I-495 to Fitchburg Street.

Project's Context/Possible Impacts, by MPO Policy Area

Land Use

The primary land use in the project area is residential, although commercial and industrial uses are also present. According to the Executive Office of Environmental Affairs/Metropolitan Area Planning Council buildout analysis, the area has a large amount of developable land around the project area. The Route 85 Connector Transportation Study by MassHighway (November 2001) identified seven proposed developments and eighty proposed single-family houses in the study area.

Safety

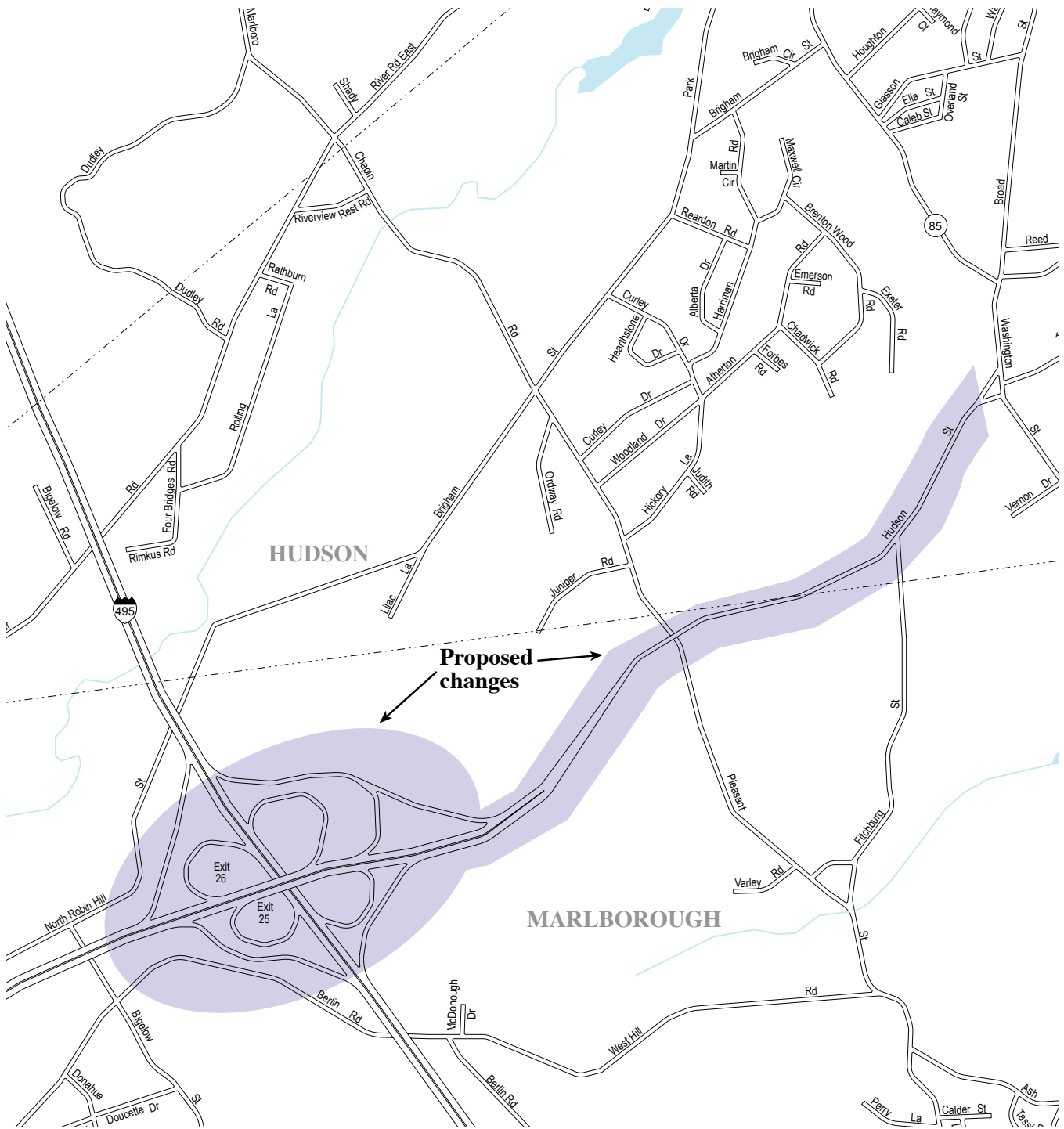
This project is located at a high-crash location—between 1999 and 2001, the I-495/I-290 interchange has been the site of 246 crashes, of which 162 involved only property damage and 84 involved bodily injury. It ranked #42 on the list of the state's high-crash intersections.

According to the Route 85 Connector Transportation Study by MassHighway (November 2001), historically there has been a high incidence of truck rollovers at the interchange. These rollovers predominately occur on the ramp from I-290 eastbound to I-495 northbound. This is due in large part to the combination of the tight turning radius of the ramp and the excessive speeds of vehicles entering the interchange.

Mobility

According to traffic counts performed by MassHighway, the average daily traffic for I-290 west of I-495 was 72,000 vehicles in 2003, for I-495 north of I-290 it was 82,200 vehicle in 2004, and for I-495 south of I-290 it was 88,150 vehicles in 2004. According to the Route 85 Connector Transportation Study, the ramps connecting I-290 to I-495 northbound and southbound have failing or almost failing levels of service.

MAP 16-9 MARLBOROUGH AND HUDSON: I-495/I-290/ROUTE 85 CONNECTOR INTERCHANGE



WEYMOUTH TO DUXBURY: ROUTE 3 SOUTH ADDITIONAL LANES (\$227,785,000)

Description

Widen Route 3 from two lanes in each direction to three lanes in each direction from Weymouth (Exit 16 at Route 18) to Duxbury (Exit 11 at Route 14). It will restore the shoulder breakdown lanes, provide safety recovery zones, and upgrade interchange acceleration and deceleration lanes. The project also involves design configuration improvements at the interchange ramps at Exit 12 (Route 139 in Pembroke); related intersection improvements at highway ramps at Exits 11, 12, 13, and 15; and upgrades and expansions of the park-and-ride lots at Exits 12 and 14.

Project's Context/Possible Impacts, by MPO Policy Area

Land Use

More than 65 percent of the total land area in the Route 3 corridor communities is categorized as already developed, public open space, or land within water bodies; 34 percent is categorized as "remaining developable" land.

There is substantial existing commercial, office, and industrial development along the highway, particularly at the interchanges and where proximity to the highway provides visibility. Much of the land near the interchanges is zoned for these non-residential uses. There are wetlands in some areas along the roadway and also some residential development. Retail commercial uses are in place near all but the Exit 11 interchange in Duxbury, where wetland and open water exist. In addition, Exit 14 in Rockland has substantial industrial and office space in nearby industrial office parks and areas. Exit 15 has a nearby industrial park. Land use in Weymouth north of Exit 15 is both residential (including apartment and condominium complexes) and industrial.

Safety

Between 1999 and 2001, this project area included four interchanges that were classified

as high-crash locations—Route 3/Derby Street, Route 3/Route 139, Route 3/Route 228, and Route 3/Route 18.

- The Route 3/Derby Street interchange (in Hingham) was the site of 116 crashes, of which 72 involved only property damage and 44 involved bodily injury. It ranked #152 on the list of the state's high-crash intersections.
- The Route 3/Route 139 interchange (in Pembroke) was the site of 121 crashes, of which 83 involved only property damage and 38 involved bodily injury. It ranked #175 on the list of the state's high-crash intersections.
- The Route 3/Route 228 interchange (in Rockland) was the site of 117 crashes, of which 71 involved only property damage and 46 involved bodily injury. It ranked #142 on the list of the state's high-crash intersections.
- The Route 3/Route 18 interchange (in Weymouth) was the site of 200 crashes, of which 108 involved only property damage and 92 involved bodily injury. It ranked #45 on the list of the state's high-crash intersections.

Mobility

According to MassHighway traffic counts, the average daily traffic volumes on Route 3 along this stretch of roadway are as follows:

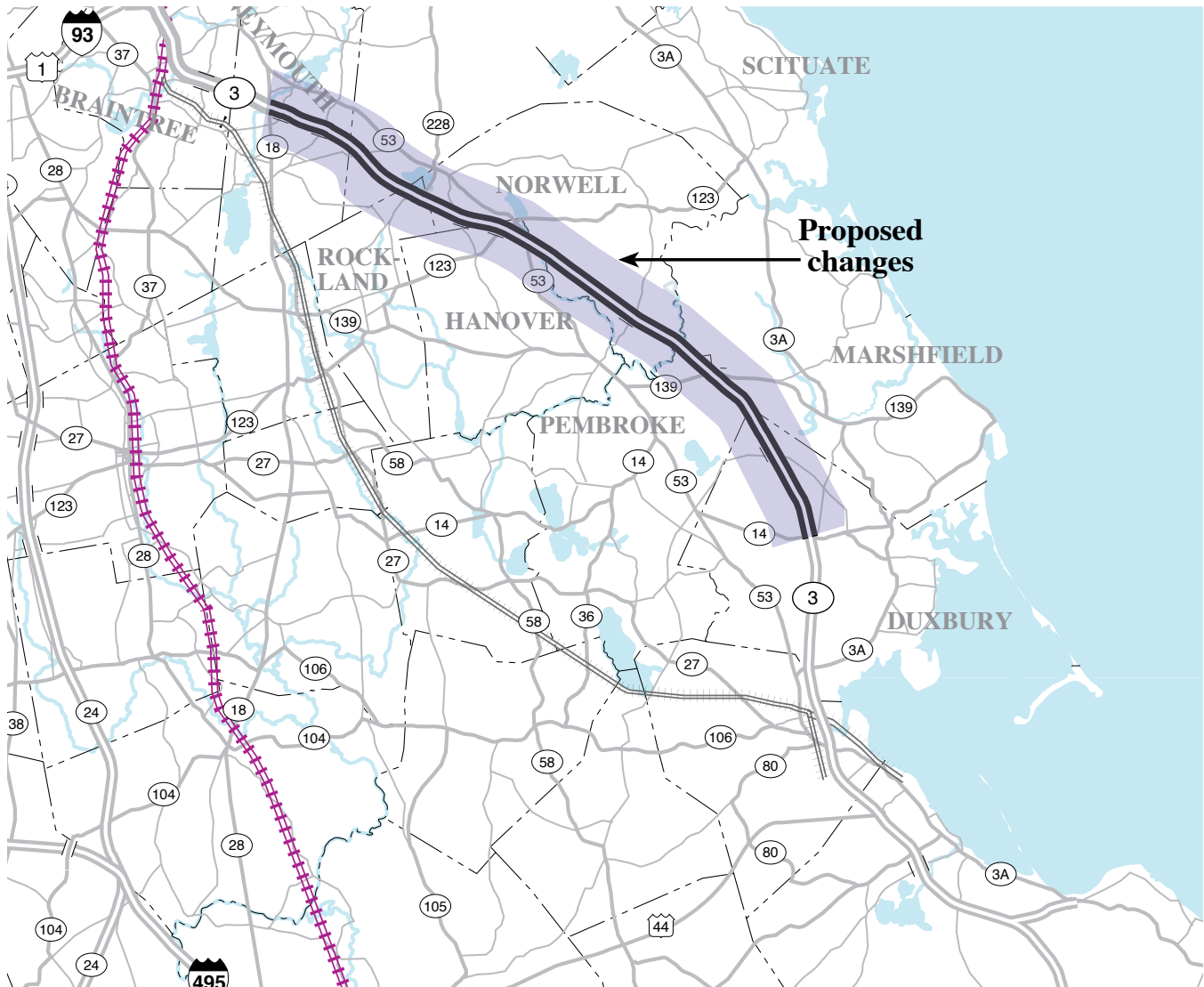
Weymouth:

- North of Route 18 Exit 16 (2004 counts)
– 138,400 vehicles
- South of Route 18 Exit 16 (2003 counts)
– 98,200 vehicles

Hingham:

- North of Derby Street Exit 15 (1998 counts)
– 97,900 vehicles
- Between Exits 14 and 15 (2004 counts)
– 103,800 vehicles

MAP 16-10 WEYMOUTH TO DUXBURY: ROUTE 3 SOUTH ADDITIONAL LANES



Norwell:

- Between Exits 13 and 14 (2001 counts) – 76,000 vehicles
- South of Exit 13 (2001 counts) – 60,300 vehicles

Pembroke:

- At the Marshfield town line (2003 counts) – 62,300 vehicles

Duxbury:

- North of Exit 11 (2001 counts) – 53,900 vehicles

According to traffic analyses performed for the supplemental draft environmental impact report, existing levels of service are E or F over much of the project area in both the AM and PM peak hours. Congestion has increased to the point that the State Police, MassHighway, and the Federal Highway Administration agreed to allow the use of the breakdown lane as a travel lane during peak periods.