



# APPENDIX C

## TRAVEL DEMAND FORECASTS AND NO-BUILD PROJECT DESCRIPTIONS

### TRAVEL DEMAND FORECASTS

In developing Paths to a Sustainable Region, the MPO conceptualized the region's transportation needs over the next 23 years. Land use patterns, growth in employment and population, and trends in travel patterns differ in how they affect demands on the region's transportation system. In order to estimate future demands on the system for this Long-Range Transportation Plan (LRTP), the MPO utilized a regional travel-demand forecast model. The model is a planning tool used to evaluate the impacts of transportation alternatives given varying assumptions with regard to population, employment, land use, and traveler behavior. The model is used to assess potential projects in terms of air quality benefits, travel-time savings, and congestion reduction.

#### Travel-Demand Model Characteristics

The travel model set simulates existing travel conditions and forecasts future-year travel on the eastern Massachusetts transit and highway systems. To get a more accurate picture of the travel demands in the Boston region, all communities within the commuting shed (the area from which people commute) for eastern Massachusetts are included in the modeled area. This area includes an additional 63 communities that are outside the 101-municipality MPO region.

The model represents all MBTA rail and bus lines, all private express-bus carriers, all commuter boat services, all limited-access highways and principal arterials, and many minor arterials and local roadways. The region is subdivided into over 2,700 transportation analysis zones (TAZs). The model set is made up of several models, each of which simulates a step in the travel decision-making process. The model set simulates transportation supply characteristics and transportation demand for travel from every TAZ to every other TAZ. This simulation is the result of several inputs (different categories of data); the most important include population, employment, auto ownership, transit fares, automobile operating costs, and highway and transit levels

of service. These inputs are updated on a regular basis to ensure the reliability of the forecasts. The model set, which is similar in nature to those used in most other large urban areas in North America, also incorporates many new procedures, including the ability to forecast nonmotorized trips and to limit trips based on parking capacities at MBTA stations.

### **Travel Demand under 2009 Base Year, 2035 No-Build, and 2035 Build Conditions**

The travel model analysis for the LRTP consisted of several steps. First, an existing conditions network was tested to simulate recent (2009) travel conditions. A list that describes all major highway and transit projects open for public use by December 31, 2009 is included in this appendix. Projects included for analysis in the model were “regionally significant” as defined by the federal government, because of their being regional in nature, adding capacity, and having air quality impacts for the region as measured by the model.

A 2035 No-Build alternative was then represented in the model. The 2035 No-Build alternative built upon the 2009 Base Year and added projects that were constructed between 2009 and 2011, projects that are currently under construction, and projects that were programmed in the first year of the 2011–2014 Transportation Improvement Program (TIP). Descriptions of the 2035 No-Build projects are also included in this appendix. The 2009 Base Year and 2035 No-Build scenarios provided a baseline against which the predicted effects of potential future investments in the transportation system were measured.

Next, an alternative set of projects (called the 2035 Build Scenario) was developed and then compared to the 2035 No-Build scenario as described under Project Selection. Several important travel statistics are reported for these forecasts, including:

- Total vehicle-miles of travel (VMT) and vehicle-hours of travel (VHT) on a typical weekday
- Average speed of highway traffic
- Amount of air pollution produced by automobiles and transit vehicles
- Total number of daily trips made by auto and transit
- Average daily fixed-route transit ridership by mode (rapid transit, bus, commuter rail, commuter boat, and express bus)
- Percentage of people traveling by each of the travel modes

Project descriptions for the 2035 Build Projects in the recommended plan are included in Chapter 8 – The Recommended Plan. Selected travel modeling results for the 2009 Base Year and 2035 No-Build and 2035 Build alternatives are shown in Table C-1 and in Chapter 8, The Recommended Plan.

**TABLE C-1**

**2009 BASE YEAR, 2035 NO-BUILD, AND 2035 RECOMMENDED PLAN TRANSPORTATION NETWORK MODEL RESULTS**

SOCIOECONOMIC MEASURES	2009 BASE YEAR	2035 NO-BUILD	PERCENTAGE CHANGE FROM 2009 TO 2035 NO-BUILD	2035 RECOMMENDED PLAN	PERCENTAGE CHANGE FROM 2035 NO-BUILD TO 2035 RECOMMENDED PLAN
Population	4,421,100	4,943,600	11.8%	4,943,600	0%
Households	1,771,300	2,013,500	13.7%	2,013,500	0%
Employment	2,324,600	2,528,200	8.8%	2,528,200	0%
Average household size	2.50	2.46	-1.6%	2.46	0%
<b>TRIP GENERATION RESULTS (AVERAGE WEEKDAY)</b>					
Person-trip total	16,987,600	18,979,800	11.7%	18,979,800	0%
Person-trips into and out of the region	1,699,300	2,131,900	25.5%	2,131,900	0%
Intraregional person trips within the region	15,288,300	16,847,900	10.2%	16,847,900	0%
<b>MODE CHOICE RESULTS (AVERAGE WEEKDAY)</b>					
Total person-trips	14,709,500	16,210,300	10.2%	16,210,300	0%
Linked transit trips	899,100	1,169,300	30.1%	1,190,800	2%
Walk access	774,700	1,036,200	33.8%	1,056,100	2%
Drive access	124,400	133,100	7.0%	134,700	1%
Auto person-trips	11,385,700	12,205,400	7.2%	12,196,600	0%
Nonmotorized trips	2,424,700	2,835,600	16.9%	2,822,900	0%
Transit mode share	6.11%	7.21%	18.0%	7.35%	2%
Auto mode share	77.40%	75.29%	-2.7%	75.24%	0%
Nonmotorized mode share	16.48%	17.49%	6.1%	17.41%	0%
<b>TRANSIT ASSIGNMENT RESULTS (AVERAGE WEEKDAY)</b>					
Unlinked transit trips	1,216,500	1,575,000	29.5%	1,607,000	2%
Rapid transit lines	692,400	881,500	27.3%	933,400	6%
Commuter rail lines	104,900	131,700	25.5%	132,500	1%
Local buses	355,500	461,100	29.7%	439,900	-5%
Downtown Shuttle Bus	8,500	9,200	8.2%	9,300	1%
Express buses	25,200	30,900	22.6%	30,200	-2%
Ferry	4,400	4,500	2.3%	4,500	0%
Bus rapid transit	25,600	56,100	119.1%	57,200	2%
Transfer rate (unlinked/linked trips)	1.35	1.35	-0.4%	1.35	0%
<b>HIGHWAY ASSIGNMENT RESULTS (AVERAGE WEEKDAY)</b>					
Vehicle-trips assigned	12,833,900	14,145,900	10.2%	14,139,300	0%
Vehicle-miles of travel	108,933,700	119,492,700	9.7%	119,549,600	0%
Average trip length	8.49	8.45	-0.5%	8.46	0%
Vehicle-hours of travel	3,186,800	3,782,200	18.7%	3,772,300	0%
Average travel time	15.68	16.01	2.1%	16.01	0%
Average speed	34.18	31.59	-7.6%	31.69	0%

## 2009 BASE YEAR PROJECTS

### Highway Projects

**Route 53, Phase I (Hanover):** Widening of Route 53 from Route 3 to Mill Street (Hanover) was completed by MassDOT in 1994. This project widened Route 53 from a two-lane to a five-lane roadway segment.

**Route 53, Phase II (Hanover):** This project widened the one-mile section of Route 53 between Mill Street and Rawson Road from two lanes to five lanes: two lanes in each direction and a two way center turn lane. It also added six-foot sidewalk to the west side of the roadway. Pond Street was relocated and realigned, approximately 210 feet north of its current location, to intersect Route 53 opposite Old Washington Street, creating a four-way intersection. The existing traffic signal at the Route 53/Old Washington Street intersection was upgraded to accommodate this new configuration.



#### **High-Occupancy Vehicle (HOV) Lane on I-93 (Mystic Avenue):**

This MassDOT project consisted of an extension of the existing southbound HOV lane to the Sullivan Square (Somerville) off-ramp. The HOV lane is for vehicles with two or more occupants and is a total of 2.03 miles in length. The extension was opened in September 1994.

#### **High-Occupancy Vehicle (HOV) Lane on the Southeast Expressway:**

This six-mile HOV lane is between Furnace Brook Parkway (Quincy) and Freeport Street (Dorchester-Boston). The facility opened in November 1995. It uses contra-flow technology, in which a travel lane is reallocated from the off-peak side of the expressway to the peak side for the duration of the peak period. The HOV lane is for vehicles with two or more occupants.

**Ted Williams Tunnel:** The Ted Williams Tunnel (aka/ Third Harbor Tunnel) extends 1.6 miles (0.75 miles under water) from South Boston (Boston) to Logan Airport property (East Boston). It opened for commercial traffic only on December 15, 1995. The approximate cost for the tunnel was \$1.5 billion.

**South Boston Bypass Road (aka/Haul Road):** The roadway segment runs from the Ted Williams Tunnel (South Boston) to near the I-93/Massachusetts Avenue interchange (Boston). The roadway is restricted to commercial vehicles only. It was opened in July 1993. Construction of this roadway project was part of the Central Artery project.

**Blue Hill Avenue Signal Coordination:** This MassDOT project involved the coordination of signals along the Blue Hill Avenue corridor in Boston.

**Brighton Avenue Signal Coordination:** This MassDOT project involved the coordination of signals along the Brighton Avenue corridor in Boston.

**Marrett Road Signal Coordination:** This MassDOT project consists of reconstructing Route 2A (Marrett Road) from I-95 (Route 128) west to beyond the Massachusetts Avenue extension.

**Beverly/Salem Bridge:** This project involved the replacement of a drawbridge over the Danvers River/ Beverly Harbor connecting the cities of Beverly and Salem with an elevated fixed structure. The bridge opened for traffic on August 2, 1996.

**Route 20, Segment 1 (Marlborough):** This project involved widening a 1.1-mile section of Route 20 from 2 lanes to 4 lanes. The project extended from just west of Farm Road to the Raytheon traffic lights just east of DiCenzo Boulevard. The project included the replacement of traffic signals at the intersection of Route 20 and Farm Road & Wilson Street, the installation of traffic signals at DiCenzo Boulevard (West), and the coordination of these two signals and existing signals at Hager Street and Raytheon Company Drive. This project opened to traffic in October 1999.



**Leverett Circle Bridge (Charlestown):** A part of the Central Artery/Tunnel project, these new ramps connect the Tobin Bridge via a parallel four-lane bridge with Storrow Drive and Leverett Circle area on the north-western edge of downtown Boston with points north of the Charles River.

**I-495 Interchange (Marlborough/Southborough):** This project involved the construction of an interchange to Interstate 495 between Route 9 and Route 20. Major elements of the work include the construction of four entrance/exit ramps for I-495 with two bridges and a connector road from the ramps to Crane Meadow Road, as well as the reconstruction and signalization of Crane Meadow Road.

**I-93/Industriplex Interchange (Woburn):** This project involved the construction of an interchange to Interstate 93 between Interstate 95 and Route 129. Major elements of the work included the construction of four entrance/exit ramps for I-93 with two bridges and a connector road from the ramps to Commerce Way, as well as the reconstruction and signalization of the Commerce Way intersection. This project opened to traffic in October 2000.

**Quincy Center Concourse, Phase I (Quincy):** This project involved the construction of the Quincy Center Concourse Bridge connecting Burgin Parkway to Parking Way. The work also included the reconstruction of sections of Burgin Parkway, the Granite Street Connector, and Parking Way, including the installation of an interconnected traffic signal system.

**Route 62 and Middlesex Turnpike (Burlington):** This project involved traffic safety improvements to Route 62 between the Route 3 overpass and Network Drive (formerly Kent Road) and to Middlesex Turnpike from Lexington Street to Terrace Hall Avenue and Network Drive. The improvements to Route 62 included the installation of a traffic signal and

the reconstruction of two others, widening of the roadway from two to four lanes, and installation of a sidewalk along one side of the roadway. Work on Middlesex Turnpike includes the installation of two traffic signals and the reconstruction of two others, the widening of the roadway from two to four lanes and an additional left turn lane at three separate locations, and the installation of a sidewalk along one side of the roadway.

**Route 9 (Wellesley):** This project widened Route 9 from 4 lanes to 6 lanes from Willow Street to the Interstate 95 (Route 128) northbound on-ramp. This project was completed in 2000.

**Route 138 (Canton):** This project widened Route 138 from 2 lanes to 4 lanes from the Route 128 Interchange (the northern limit of the Washington Street Bridge) to 200 meters north of the intersection of Route 138 and Royal Street/Blue Hill River Road. This project was open to traffic in October 2000.



**Bridge Street (Salem):** This project involved widening of Bridge Street from Flint Street to St. Peter Street to two lanes in each direction, including the reconstruction of the Washington Street rotary. The benefits of the project included a lessening of traffic congestion, operational improvements, improved access to the commuter rail station, and improved safety.

**Central Artery:** The Central Artery/Tunnel project was the largest, most complex and technologically challenging highway project in American history. The project cost approximately \$14 billion and was completed in 2005. This project is highlighted by the construction of an 8-to-10 lane, limited access, 1.5 mile underground expressway to replace

the existing elevated I-93 highway. Other components of the project include the Ted Williams Tunnel from South Boston to Logan Airport, an extension of I-90 from near South Station to Logan Airport and Route 1A in East Boston, four major highway interchanges, a cable-stayed bridge across the Charles River, and the reconstruction of an additional 2.1 mile segment of I-93. The project built or rebuilt 161 lane miles of urban highway, about half in tunnels, in a 7.5 mile corridor. Approximate completion dates were:

- Ted Williams Tunnel - December 15, 1995
- South Boston Bypass Road - 1993
- Charlestown/Leverett Circle Bridge - October 7, 1999
- I-90 Extension to the Ted Williams Tunnel - January 2003
- I-93 Northbound - March 2003
- I-93 Southbound - April 2004

**Massachusetts Avenue/Lafayette Square, (Cambridge):** This project realigned the intersection of Massachusetts Avenue, Main Street, and Columbia Street. The signalized intersection was moved to a realigned 4-way intersection opposite Sidney Street on the south.

**Cambridgeport Roadways (Cambridge):** Street patterns in Cambridgeport from Massachusetts Avenue to Memorial Drive were realigned. The streets involved were Sidney Street, Waverly Street, Albany Street and Brookline Street. The benefits of the project include the diversion of traffic away from neighborhood streets, traffic flow improvements, and economic development opportunities.

**I-95 (SB)/Dedham Street Onramp (Canton):** This project built a new southbound ramp to I-95 from Dedham Street. There is no signal at the onramp. This project will provide direct access to Interstate 95 (South) from Westwood's University Avenue industrial area. The benefits of the project include a reduction in congestion and delays at the current access point (Blue Hill Drive) and improved access for commuters wishing to use the Route 128 commuter rail station.

**Route 140 (Franklin):** Route 140 was widened from one lane in each direction to two lanes from I-495 to Garelick Farms. The alignment of Route 140 was altered to accommodate an improved diamond interchange. The length of Route 140 affected is 1.2 miles. The benefits of the project include a lessening of traffic congestion, operational improvements at the affected interchange, associated travel time savings, and economic development opportunities.

**Route 139 (Marshfield):** This MassDOT project consisted of the reconstruction, widening and installation of traffic signals on Route 139 in Marshfield from the Route 3 off-ramp to the Pembroke town line.

**Route 20, Segments 2&3 (Marlborough):** From Farm Road to the Sudbury line, Route 20 was widened from one lane in each direction to two. The 0.9-mile portion of Route 20 from Felton Street to Ames Street was also widened from one lane in each direction to two lanes in each direction. A new signal was installed at the intersection of Route 20 and Williams Street.

**Bridge Street Bypass (Salem):** This project involved construction of a new road along the North River from Veteran's Memorial Bridge to the vicinity of St. Peter Street and Bridge Street.

**Route 38 (Wilmington):** This MassDOT project consisted of widening and reconstructing Route 38 from Route 129 (Richmond Street) to Middlesex Avenue. Signalization improvements were made at the intersections of Route 38/Clark Street, Route 38/Wilmington Plaza and Route 38/Richmond Street.

**Route 1 and Associated Improvements (Foxborough):** This project improved the area from the intersection between Route 1 and North Street to the intersection of Route 1 and Pine Street in the town of Foxborough. It involved a grade-separated interchange at the north end of the stadium on Route 1 and a flyover bridge/ramp on the south side of the stadium to Route 1. A new access drive was built from North Street into the stadium. A second contract dealt with improvements along Route 1 between the two nearest interstate highways including a new slip ramp at the Route 1/Interstate 95 interchange in Sharon. New sidewalks were built on North Street from the access road to the Walpole town

line. The shoulder along Route 1 in Foxborough and the Route 1/Interstate 495 ramps in Plainville were widened. Regional and local signage improvements were also part of this contract.



**Route 3 North:** The project widened Route 3 along a 21-mile stretch from Burlington to the New Hampshire border. The affected towns were Bedford, Billerica, Chelmsford, Westford, Tyngsborough, and Burlington. The highway was expanded from 2 to 3 lanes in each direction with full right and left shoulders. All of the bridges along the corridor were reconstructed to accommodate a potential fourth lane in each direction. This project was programmed in the Northern Middlesex Council of Governments' Transportation Plan.

**Burgin Parkway (Quincy):** The project created new ramps at the Route 3/Burgin Parkway interchange and a grade separation for the Burgin Parkway southbound movement (toward Route 3) over Centre Street. Beginning on Burgin Parkway just south of Penn Street, the

outbound roadway splits. Southbound traffic staying left continues to the existing at-grade intersection at Centre Street. Traffic bearing right and continuing south along Burgin Parkway passes over Centre Street en route to the Route 3/Route 128/I-93 ramp system. The grade-separated section provides two travel lanes and will be constructed with a maximum grade of less than 7%. A viaduct section will be constructed over Centre Street. The viaduct will merge with the existing viaduct carrying outbound traffic from the Quincy Adams MBTA station.

A new ramp from Crown Colony Drive at its intersection with Congress Street carries traffic from Centre Street to I-93 north and Route 128. The ramp joins the southbound flow from Burgin Parkway downstream of the MBTA ramp and the Burgin Parkway merge location. Traffic using this ramp will not be required to weave with other traffic using Burgin Parkway, which will minimize traffic weaving conditions on the Route 128/I-93 ramps. Construction of a channelized ramp allows northbound Crown Colony Drive traffic to bypass the Crown Colony Drive/Centre Street and Burgin Parkway/Centre Street intersections and connect with southbound Burgin Parkway ramps.

**Route 53/228 (Hingham & Norwell):** This project reconstructed the Route 53/Route 228 intersection in Hingham (Queen Anne's Corner) to widen all four approaches to three-lane roadways, including a center left-turn lane. Improvements were also made at the High Street/Grove Street intersection in Norwell. A center left-turn lane was added between the two intersections (approximately one-half mile).

**Crosby Drive (Bedford):** This project involved widening of Crosby Drive from one to two lanes in each direction with a shared center left-turn lane. The roadway cross-section width increased to 66 feet, and the total right-of-way width to 80 feet. Each direction consists of a 14-foot outside travel lane and a 12-foot inside lane, with a 14-foot shared



turning lane. The north side of the roadway has a 3-foot grass strip with a 5-foot sidewalk. The south side has a 6-foot grass strip.

**Interstate 93/Ballardvale Interchange (Wilmington):** The project involved the construction of a new northbound I-93 on-ramp from Route 125 west. Route 125 was widened to accommodate the new ramp between Ballardvale Street and the interchange.

## Transit Projects

**Urban Ring bus service:** This MBTA cross-town bus service began in 1994. It consists of three limited stop bus routes providing connections among the Red Line, the Orange Line and the Green Line branches. The three services are:

- CT1: Central Square (Cambridge) to B.U. Medical Center (Boston)
- CT2: Kendall Square (Cambridge) to Ruggles Station (Boston) via Longwood Medical area. The service extension to Sullivan Square began in 2000.
- CT3: Andrew Station (South Boston) to Longwood Medical area (Boston) via Ruggles Station.

**Additional Park and Ride Spaces:** 20,330 parking spaces were added between January 1, 1991 and April 28, 2001 at stations on rapid transit and commuter rail lines in the MBTA service area, including along the Old Colony, Worcester, and Newburyport commuter rail lines.

**South Station Transportation Center:** An intercity bus terminal was added above the commuter rail tracks and platforms at South Station. The facility was opened in October 1995. The facility serves intercity bus carriers, major regional carriers and commuter bus operators. The bus concourse has 23 sawtooth docks, four pull-through docks and two airport link docks.

**Amtrak Northeast Corridor Electrification:** This Federal Railroad Administration/Amtrak project involves the electrification of the Northeast Corridor rail line from Boston to New Haven, CT; the purchase of high-speed train sets; and expansion of passenger train service between Boston and New York. Acela high-speed service began in December 2000.

**Newburyport Commuter Rail Service:** This project involved the extension of the MBTA commuter rail line from Ipswich station (Ipswich) to Newburyport, a total length of 9.6 miles. There is an intermediate stop with a new station and associated parking at Rowley. The service opened in October 1998. The additional parking at Rowley and Newburyport stations is included in the 20,330 New Parking Spaces. The service includes 13 inbound and 13 outbound trips during the week and 6 inbound and 6 outbound trips on the weekend.



**Old Colony Commuter Rail (two lines):** This MBTA commuter rail project involved the restoration of two of the Old Colony lines. Service runs from South Station to Middleborough/Lakeville with six intermediate stops and from South Station to Kingston and Cordage/Plymouth with six intermediate stops. Service on the two lines began in September 1997. The additional parking at the stations is included in the 20,330 New Parking Spaces. This project does not include the Greenbush branch of the Old Colony commuter rail line.

**Greenbush Commuter Rail Service:** This project restored rail service on a third branch of the Old Colony lines, diverging from the route of the Middleborough/Lakeville and Plymouth/Kingston lines in Braintree and following a combination of active and inactive rail freight routes to the Greenbush section of Scituate.



**Route 128 Amtrak Station:** This joint Amtrak and MBTA project consisted of a new station for the Northeast Corridor Amtrak service and the MBTA Attleboro service. Electrified trains (Amtrak) began serving the station in 2000. Full build was completed in 2005 with the completion of an access road to Route 128.

**Hingham Ferry:** The Hingham Ferry provides commuter boat service from the Hingham Shipyard to Rowes Wharf in downtown Boston. Service has been provided since the late 1970s, and in the late 1990s, high-speed catamarans were introduced to the service.

**Improved service on the Haverhill Commuter Rail Line:** In July 1997, increased service was enacted on the Haverhill commuter rail line. Increased service included the running of eight additional trains each day, including express trains that shorten peak period travel time.

**Salem-Boston Express Bus:** Express bus service between Salem and Boston was introduced in the fall of 1997. Service is provided from the North Shore via Lynn Central Square and Logan Airport's Terminal C providing direct, one-seat service between the North Shore and the South Boston Piers area, the Financial District, and Downtown Crossing.

**North Station Improvements:** This MBTA project includes the relocation of the above ground portion of the Green Line to Lechmere to underground. The new rapid transit station includes a superstation platform with direct transfers between the Green and Orange lines.

**Worcester Commuter Rail, full service including new stations:** This MBTA service includes intermediate stops in Westborough, Southborough, Ashland, and Grafton. Each stop includes a new commuter rail station with associated parking. This service replaced the interim service provided between Framingham and Worcester. The stations were opened in 2002.

**Silver Line – Washington Street, Phase 1:** The MBTA's Silver Line runs along Washington Street from Dudley Square in Roxbury to Downtown Crossing in the city of Boston. The vehicles used on the route are 60-foot articulated compressed natural gas buses and their

low-floor design makes them handicapped accessible. The buses operate in mixed traffic from Dudley Square to Melnea Cass Boulevard where they then enter a reserved lane. At the Massachusetts Turnpike, the reserved lane ends and the vehicles enter mixed traffic again. Silver Line stations include Dudley Square, Melnea Cass Boulevard, Lenox Street, Newton Street, Union Park Street, and East Berkeley Street. Additionally, the vehicle makes stops at Herald Square, New England Medical Center, Chinatown, and Downtown Crossing. This project was a Central Artery/Tunnel commitment.

**Silver Line – Transitway, Phase 2:** This MBTA transitway provides service via tunnel from South Station (Boston) to the World Trade Center (in the vicinity of Viaduct Street) with an intermediate station stop at Courthouse Station (in the vicinity of Northern Avenue and Farnsworth). Service began in 2003. It also includes a surface route from the D Street portal to City Point (South Boston).



**Silver Line Service to Logan Airport (formerly called the Airport Intermodal Transit Connector):** This project provided a new transit service in Boston from South Station Intermodal Center to the Logan Airport terminals. The service uses the MBTA South Boston Piers Transitway tunnel from South Station to South Boston and then the Ted Williams Tunnel to the four Logan Airport terminals. The service enhances the connection between the Red Line and Logan Airport.

**Mattapan Refurbishment:** This MBTA project involved the refurbishment of the existing PCC (Presidential Conference Committee) cars currently running on the Mattapan High-Speed line (Boston-Mattapan-Milton). There were no scheduled run time or frequency improvements associated with this project.

**Industriplex Intermodal Center (Woburn):** This is a joint agency (MassDOT, Massport, MBTA) project. The Industriplex in Woburn provides an intermodal facility for the northern suburbs that combines MBTA commuter rail, Massport's Logan Express shuttles, a 2,400-space parking lot, and a station on Amtrak's service to Portland, Maine. The project also included a new interchange with Interstate 93 that improved access to the facility.

**New Commuter Rail Station at JFK/UMASS Station:** This station was added to the Old Colony commuter rail service lines and provides connections to the MBTA Red Line, local bus service, and shuttle service. Access is also provided to UMASS and the JFK Library.

**Mishawum Station Open for Outbound Service:** Outbound service was added at Mishawum Station at 7:07 AM, 7:49 AM, and 8:34 AM and inbound service was added at 4:36, 5:31, and 6:06 PM.

## 2035 NO-BUILD PROJECTS

### Highway Projects

**Route 128 Additional Lanes (Randolph to Wellesley):** This project involves widening Route 128 from three lanes in each direction to four lanes from Randolph to Wellesley. The lane volumes for this corridor are the highest on any portion of Route 128.

**Massachusetts Turnpike U-Turn:** This project constructed a new U-turn ramp at the Allston exit of the Massachusetts Turnpike that allows westbound Turnpike drivers to reverse direction traveling eastbound toward Downtown Boston and Logan Airport.

**Middlesex Turnpike Improvements Phases I and II:** This project included widening Middlesex Turnpike from a two-lane to a five-lane roadway with two travel lanes in each direction. The improvements were from approximately 375 feet north of Route 62 to the Crosby Drive/Middlesex Turnpike intersection.

**East Boston Haul Road (Boston):** This project reduces truck and airport-related traffic such as shuttles and buses in East Boston by creating a new grade-separated roadway connecting the City of Chelsea and the harbor tunnels/Logan Airport using an abandoned below-grade railroad right-of-way. It will provide a roadway passing beneath Neptune Road, Bennington Street, and Saratoga Street, and connect to Chelsea Street south of the Chelsea Street Bridge.



**Crosby's Corner:** The project involves the construction of a bridge for Route 2 over the congested Crosby's Corner area. The current Route 2 will be converted into a frontage road for local homes and businesses.

**Route 128/Route 35 and Route 62 (Danvers):** This project involves the reconstruction of two interchanges on Route 128 in Danvers (Routes 35 and 62) and replacement of a bridge.

**Route 85 (Hudson):** This project involves widening and/or reconstructing 1.52 miles of Route 85 from the Hudson/Marlborough line to Route 62 (Main St.). Sidewalk upgrades associated with

the project will improve connectivity to the Assebet River Rail Trail.

**Route 139 (Marshfield):** This project removes a congested bottleneck on Route 139 between School and Furnace Streets through roadway widening, and adds bicycle and pedestrian accommodations.

**Quincy Center Concourse (Quincy):** This project continues work from Phase 1, which was the construction of a bridge over the MBTA tracks between Burgin Parkway and Parkingway completed in 2002. Phase 2 of this project consists of a new roadway from Parkingway to Hancock Street, the realignment of Revere Road between Hancock Street and Mechanic Street, and the reconstruction of Revere Road from Mechanic Street to just beyond Miller Style Road where the road will link up with Concourse Phase 3 (McGrath Highway reconstruction). The new four-lane road will improve east-west

vehicular access through Quincy Center while promoting economic development and revitalization of the city's urban core.

**Assembly Square Roadway (Somerville):** This project consists of the reconstruction of a 1.2 mile road (Assembly Square Drive) that will serve as the primary north-south thoroughfare within the Assembly Square District, and a series of intersection and roadway improvements that will address vehicular access and public safety associated with new development opportunities planned within Assembly Square in Somerville.

**South Weymouth Naval Access Improvements (Weymouth):** This project involves several improvements that will support the redevelopment of the South Weymouth Naval Air Station. The improvements include a new East-West Parkway to connect Routes 18 and 3. It will be a median-divided, limited-access boulevard consisting of four lanes in each direction from Route 18 to approximately Union Street and two lanes from Union Street to Weymouth Street. Reservoir Park Drive and Hingham Street will be widened to Commerce Drive. There will be minor changes to the Route 3/Route 228 interchange ramps to create a consistent four-lane cross-section between the proposed parkway and Route 3. Also included in the project is the relocation and improvement of the South Weymouth commuter rail station.

**Logan Airport Intermodal Transportation Initiative, Including a Consolidated Rental Car Facility (Boston):**

The Logan Airport Intermodal Transportation Initiative features constructing a Consolidated Rental Car Facility (ConRAC) served by an alternative-fuel shuttle bus system connecting it with MBTA transit service (at the Airport MBTA station), as well as with airline terminals. The ConRAC will be a four-level garage for 3,200 vehicles and will be constructed on airport property known as the Southwest Service Area.

Other components of this project include:

- A unified shuttle bus system for Logan, employing 28 new 60-foot articulated diesel-electric buses
- A green bus depot to service 50 alternative-fuel buses
- Bicycle and pedestrian paths with connections to the existing Logan Airport and East Boston path systems
- Expansion of the Airport Edge Buffer

Massport will be seeking federal Transportation Infrastructure Finance and Innovation Act (TIFIA) financing assistance for this project.

## Transit Projects

**Blue Line Modernization:** This program is a modernization program to allow for six-car operation on the Blue Line.

**Assembly Square Orange Line Station:** This project will add a new Orange Line station at Assembly Square. The station will support the redevelopment project at Assembly Square in Somerville.

**Fairmount Line Improvements:** This project will include improvements to the Uphams Corner and Morton Street stations and adds four new stations – Newmarket, Four

Corners, Talbot Avenue, and Blue Hill Avenue. It also includes the reconstruction of six bridges, a new interlocking, and an upgraded signal system.

**1000 Parking Spaces:** The addition of 1,000 new parking spaces at Wonderland Station on the Blue Line, Beverly Depot on the Newburyport Line, Savin Hill on the Red Line, Woodland Station on the Green Line, and Quincy Shipyard for ferry service.

## **CAPITAL INVESTMENTS NOT AFFECTING THE TRAVEL MODEL**

**Green Line Vehicles-Type 8:** In 2006, the MBTA completed the procurement of 85 new Green Line vehicles. The vehicles feature a low-floor design that allows mobility-impaired riders to access them at any of the Green Line stations that have been designated as key stations. The Type 8 vehicles also feature interior message displays, electronic exterior route indicators, and recorded station announcements.

**Blue Line Vehicles:** The MBTA purchased new six-car train sets for the Blue Line for use once the reconstruction of stations was completed. Reconstruction of the existing stations involved the lengthening of platforms so that the longer trains could be accommodated.



**Low Emission Buses:** The MBTA is committed to the purchase of 314 compressed natural gas (CNG) buses for use systemwide.

**Dorchester Branch Modernization:** The MBTA reconstructed four stations on the Dorchester branch of the Red Line. The four stations included in the project were Savin Hill, Field's Corner, Shawmut, and Ashmont, all located within the Boston neighborhood of Dorchester. In addition to the station work, some older bridges along the Ashmont branch will be rehabilitated.

**Charles Street Station Modernization:** This project involved the reconstruction of the Charles Street station on the Red Line. The project made the station accessible and improved its relationship to the surrounding Charles Circle/Cambridge Street area.

**Bus Maintenance Facilities:** The MBTA's purchase of 314 new CNG buses marks the first time this type of vehicle will be used in the system. In order to service these alternative fuel vehicles, the MBTA will build new and retrofit existing facilities to maintain the CNG fleet.

**Automated Fare Collection:** This project replaced the MBTA's fare collection equipment on all subway, trolley, trackless trolley and bus vehicles. The new automated fare collection (AFC) equipment provides several benefits to the MBTA and its riders. In addition to the monthly pass system, riders were able to purchase stored value cards (CharlieCard). They reduced the amount of cash transactions in the system. Additionally, AFC turnstiles are better able to provide accurate data on fare collection and revenue for the MBTA. They also made transfers more convenient.

**Green Line Accessibility:** This project involves the completion of the Green Line's key station program. The key station program will put the Green Line in compliance with the Americans with Disabilities Act (ADA). Copley and Arlington stations have been made accessible, and Government Center station will soon be improved. In addition, several key stations along the Green Line's surface routes will be made accessible through elevated platforms.

**AMTRAK Service to Portland, Maine:** In 2001, Amtrak reintroduced service between Boston and Portland, Maine. The service uses North Station as its Boston terminus. Other stops include Haverhill, MA; Exeter, Dover and Durham, NH; and Old Orchard Beach, Wells and Saco, ME. Travel time between Boston and Portland is approximately two and half hours.

**Orange Line Signal Improvements and Additional Coaches:** Signal improvements along the Orange Line to allow for an additional 18 coaches have been completed by the MBTA. The MBTA is looking into options for additional Orange Line coaches.