Massachusetts Department of Transportation
Massachusetts Bay Transportation Authority

State Implementation Plan – Transit Commitments
Monthly Status Report

May 17, 2012

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INTRODUCTION

This report is being submitted to the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) to provide an update on the status of the four outstanding State Implementation Plan (SIP) transportation control measure (TCM) projects: (1) improvements to the Fairmount Line, (2) the siting and construction of 1,000 new commuter parking spaces, (3) the design of the Red Line/Blue Line Connector, and (4) the construction of the Green Line Extension to College Avenue (Medford) and Union Square (Somerville). The U.S. Environmental Protection Agency (EPA) approved the projects as part of the SIP on July 31, 2008. A complete description of the process by which those projects were included in the SIP is provided in the Boston Region MPO's long-range transportation plan – JOURNEY TO 2030 Amendment adopted on September 24, 2009 and amended on November 19, 2009. As part of the approval of the JOURNEY TO 2030 Amendment, FHWA and FTA stated:

> *"The demonstration of timely implementation of TCMs in the SIP is required for a conformity determination. In order to ensure that the TCMs are completed as scheduled, the Executive Office of Transportation and Public Works shall prepare monthly progress reports to FTA, FHWA, and EPA. In addition to these progress reports EOT [MassDOT after November 1, 2009] shall convene monthly meetings with all interested parties to discuss the status of each TCM. This reporting requirement will be effective staring November 2009*."

This is the twenty-sixth update of the required monthly status reports, to be presented at the Boston MPO's Transportation Planning and Programming Committee at their May 17, 2012 meeting. This report builds on the *State Implementation Plan Transit Commitments 2011 Status Report*, submitted to the Massachusetts Department of Environmental Protection on July 27, 2011. This report will be posted on the website of the Massachusetts Department of Transportation.

I. FAIRMOUNT LINE IMPROVEMENT PROJECT

Project Description

The 9.2-mile Fairmount commuter rail line runs from South Station, currently serves four stations (Uphams Corner, Morton Street, Fairmount, and Readville) in the communities of Dorchester, Mattapan, and Hyde Park, and terminates in the Readville section of Boston. The line, which uses right-of-way entirely owned by the MBTA, also includes 41 bridges. It is the only commuter rail line that exclusively serves neighborhoods within the City of Boston, but ridership has historically been low and passenger facilities along the line do not meet modern standards.

The Fairmount Line Improvement Project includes the rehabilitation of the existing Uphams Corner and Morton Street Stations, construction of four new stations – Newmarket, Four Corners, Talbot Avenue, and Blue Hill Avenue – reconstruction of six existing railroad bridges (located over Columbia Road, Quincy Street, Massachusetts Avenue, Talbot Avenue, Woodrow Avenue, and the Neponset River), and construction of a new interlocking and upgraded signal system (required to advance the bridge reconstruction work). These upgrades will enhance future service, allowing for increased frequency on the line.

Project Funding & Cost

In August 2007, MassDOT and the MBTA executed a contract to transfer approximately $39 million in bond funds from MassDOT to the MBTA to support project costs of (1) signal work, (2) reconstructing the Columbia Road, Quincy Street, and Massachusetts Avenue Bridges, (3) designing the Talbot Avenue, Woodrow Avenue, and Neponset River Bridges, and (4) designing the Newmarket, Talbot, and Blue Hill Avenue Stations. A supplemental funding agreement providing $23,756,574 in Commonwealth bond funding was executed in June 2009 in order to advance construction of the station at Four Corners. An additional funding agreement, approved in June 2011 by the MBTA Board of Directors in the amount of $61,616,500, has allowed the remaining stations and bridges, including Blue Hill Avenue, to advance. The total cost of the project is estimated at $135 million.

SIP Deadline

"Before December 31, 2011, construction of the following facilities shall be completed and opened to full public use: Fairmount Line improvements consisting of enhancements of existing stations including without limitation: platform extensions; improved lighting and improved access; a new station in the general location of Four Corners, and a new station in each of the neighborhoods of Dorchester, Mattapan and Roxbury; and bridge upgrades and other measures to improve service and increase ridership (the Fairmount Line project)."

Project Status

Systems

The upgrades to the interlocking and signal system have been completed and are currently in use, allowing for the reconstruction of structurally deficient bridges along the Fairmount Line.

Bridges

A construction contract to replace the Columbia Road, Quincy Street, and Massachusetts Avenue bridges was awarded in October of 2007, with the construction work completed in 2010. The design of the Talbot Avenue, Woodrow Avenue, and Neponset River bridges is completed and construction is beginning (see below). The Talbot Avenue and Woodrow Avenue bridges will be constructed under the same construction contract as Talbot Avenue Station, while three Neponset River bridges are being advertised separately (see below).

The project includes replacing three bridges over the Neponset River. Bids for replacement of the northernmost Neponset River Bridge (just north of Fairmount Station) were opened on November 3, 2010. The low bidder was Barletta Construction. Contract authorization was given at the January 2011 MBTA Board of Directors meeting, and the MBTA issued a notice to proceed on February 11, 2011. The project duration is approximately 30 months and is currently 54% complete, with project completion to occur in August 2013.

The two southern Neponset River Bridges (one just south of Fairmount Station, and one just north of Readville Yard) were packaged with environmental remediation of the Yard 5 area. Bids for this group of projects were opened on October 13, 2010. The low bidder was S&R Construction Enterprises, with contract award authorization given at the January 2011 MBTA Board of Directors meeting. The notice to proceed for this contract was issued March 1, 2011. The project duration is approximately 30 months and is currently 75% complete, with project completion to occur in September 2013.

Existing Stations

The MBTA held a station-opening at Uphams Corner on January 23, 2007. The reconstruction of Morton Street was celebrated at a station-opening on July 17, 2007. New elements at both stations include extended high-level passenger platforms, accessible walkways, canopies, benches, windscreens, signage, bicycle racks, variable messages signs, lighting, and landscaping. Work at both stations is now complete.

New Stations

Four Corners Station is under construction and is now 77% complete. A notice to proceed was issued to S&R Construction Enterprises, Inc. on January 28, 2010. Four Corners Station has experienced delays due to unforeseen geotechnical conditions, relocation of existing utilities and a redesign of the inbound sloped walkway structure at Geneva Avenue. The revised substantial completion date for Four Corners Station is

April 2013 with final completion to occur in May 2013. The delay in completion dates can be attributed to extra work required to construct the Washington Street outbound ramp structure, where the discovery of a rock vein, not identified in the engineer's test borings, required reengineering, installation of additional soil nails due to a difference in existing soil conditions, and construction of additional structural elements to support the inbound sloped walkway and retaining walls.

The construction of Talbot Avenue Station and the Talbot and Woodrow Avenue Bridges Rehabilitation projects were advertised and opened for bids in May 2010. The MBTA Board of Directors authorized a construction contract to Barletta Construction on September 10, 2010 and the notice to proceed was issued on November 22, 2010. The construction period is expected to last approximately twenty-six months, with substantial completion of the station and the bridges in October 2012 and anticipated final completion of work by January 2013. Construction is currently 85% complete. A groundbreaking was held on June 7, 2011. The replacement of the Woodrow Avenue Bridge occurred during the first weekend of November 2011; and it was completed one day ahead of the planned schedule. The Talbot Avenue Bridge was replaced during the third weekend of December 2011, which was also completed one day ahead of the planned schedule.

Construction of Newmarket Station was awarded to S&R Construction Enterprises at the MBTA Board of Directors meeting on October 6, 2010. The MBTA issued a notice to proceed on December 13, 2010. Construction is currently 50% complete. The Substantial Completion and Completion of Entire Work milestones have been extended to June 14, 2013 and August 13, 2013, respectively. The extension of the completion dates can be attributed to the discovery of an existing power duct bank for the South Bay Shopping Center not previously discovered or identified on any existing condition NStar plans; the soldier pile redesign for inbound and outbound retaining walls and the delay in manufacturing the precast concrete platform panels.

The proposed Blue Hill Avenue Station has been the subject of significant community controversy over the past two years. In early 2009, after design work for the station was well underway (60% design), concerns about negative impacts to surrounding residences were raised by a small number of abutters to the proposed station, which at the time was proposed to have two side platforms. In an effort to address these concerns, the MBTA conducted a new analysis of alternative station locations. This additional analysis determined that at least one alternative location (River Street) was infeasible due to track curvature, and that the two other alternative locations (north of Blue Hill Avenue and south of Cummins Highway) would have greater impacts to abutting residential properties than would the original design, while serving fewer riders at increased cost. The MBTA then developed an additional alternative that made use of a center-island platform at the original station site, therefore mitigating some abutter concerns by locating the platform further from homes and backyards; the MBTA also developed a conceptual design for this proposal. The MBTA continued to

encounter opposition from some abutters; however, who question the need for and appropriateness of any commuter rail station in this location. The MBTA responded to the immediate neighborhood concerns by completing an additional analysis of noise and vibration impacts and mitigation measures.

After this further review, the MBTA and MassDOT made a final determination on the Blue Hill Avenue station in May 2011. Station design will proceed at the original site with the center-island platform concept. The necessary redesign of the station is underway, and 100% design completion is anticipated by the summer of 2012. Currently outstanding is the coordination of mitigation for impacted immediate abutters. MassDOT and the MBTA are working cooperatively with residents and officials to expedite this process and finalize design, but the agreed mitigation requires detailed examination of 26 homes, which will add significantly to the duration of final design. Currently, at the request of the elected officials, an independent peer review of the station location, design and environmental impacts is being coordinated. The project is tentatively scheduled for construction advertisement in January 2013, with anticipated construction to start in the spring of 2013. This anticipated schedule will be revisited as the design of the station evolves. Construction duration for this contract will likely be approximately 24 months, so the anticipated project completion would occur by the end of fall 2015.

Potential Challenges

Community concerns (described above) regarding the construction of a station at Blue Hill Avenue, as well as construction challenges throughout the Fairmount Line, have resulted in a delay of the overall Fairmount Line Improvement Project beyond the December 31, 2011 SIP deadline. MassDOT anticipates that the Four Corners, Talbot Avenue, and Newmarket Stations and their attendant bridges and other infrastructure will be completed incrementally in 2012-2013, beyond the SIP deadline. A reliable completion date for Blue Hill Avenue station is evolving at this time, although the MBTA is working to advance the project as quickly as possible.

MassDOT recognizes that this delay triggers the Project Delay component of the SIP regulation and that MassDOT therefore needs to prepare a Petition to Delay and an Interim Emission Offset Plan, to be implemented for the duration of the delay. Both the Petition and Offset Plan were submitted to DEP on July 27, 2011.

In order to compensate for the delay, MassDOT has estimated the reduced emissions expected to be generated by the implementation of the new Fairmont Line stations. MassDOT and the MBTA, in consultation with Fairmount Line stakeholders, identified a set of potential interim emission reduction offset measures. MassDOT submitted these proposed measures to DEP in a July 27 petition, since which time MassDOT and the MBTA continued to work to refine these offsets for implementation, including a second letter to DEP (dated November 29) notifying them of changes to the proposed offsets. On January 1, 2012 (the first weekday following January 1), offset measures were

implemented – consisting of additional trips via a dedicated shuttle on the CT3 bus route between Andrew Station and Boston Medical Center; and increased weekday frequency on the Route 31 bus.

II. CONSTRUCTION OF 1,000 NEW PARKING SPACES

Project Description

To encourage commuters and other travelers to make use of the public transit network for trips into downtown Boston – and other locations as appropriate – the MBTA will construct 1,000 new parking spaces at MBTA stations within the 101 communities of the Boston Region Metropolitan Planning Organization (MPO).

SIP Deadline

Before December 31, 2011, construction of the following facilities shall be completed and opened to full public use: 1,000 new park and ride parking spaces serving commuter transit facilities within the 101 cities and towns constituting the Boston Metropolitan Planning Organization.

Project Status

In prior reports submitted to DEP, MassDOT identified two major garage projects (at the Beverly and Salem Commuter Rail Stations) that it planned to construct in order to provide the 1,000 park and ride spaces required under the SIP regulation. While MassDOT was focused on developing these two projects for the SIP commitment, the MBTA was also advancing a series of other projects that would result in additional parking spaces in other locations. Following these two paths simultaneously, MassDOT and the MBTA would have constructed significantly more than the required 1,000 spaces.

However, unanticipated delays to the projects in both Beverly and Salem have extended the anticipated timelines for design and construction of those two facilities beyond the deadline required by the SIP. That being the case and as previously reported, MassDOT has established a revised list of parking projects (provided below) in order to fulfill the necessary SIP commitments and requirements.

Wonderland/Blue Line (Revere)

MassDOT, the City of Revere, and the MBTA are working together to advance a transit-oriented development (TOD) project at Wonderland Station. The master plan for the TOD project calls for residential, retail, office, and hotel space to be built on a portion of the existing surface parking lots at the site currently used by transit riders. In exchange, the developer will build for the MBTA a new 1,465-car parking garage to not only replace the parking lost due to the development but also to increase overall transit parking supply. This project will result in 612 net new transit spaces.

In November 2009, with the garage substantially designed, the City of Revere and MassDOT secured funding under ARRA for construction of the garage. This unanticipated funding source substantially expedited the development of the project. The MBTA entered into a Memorandum of Understanding with the City of Revere to

award a construction contract using a municipal earmark. On September 9th, 2010, the MBTA authorized the City of Revere to award a Design/Build contract to Suffolk Construction. Notice to proceed was issued September 9th, 2010 to Suffolk Construction, and a project groundbreaking occurred on September 13th, 2010.

Construction is currently 97% complete. The final pieces of the garage precast were erected on November 1, 2011. The final Butler Circle and Route 1A paving was completed on November 4, 2011. Erection and detailing of the structural steel at the station has been completed. The exterior ramps and plaza were completed on February 7, 2012. The Stair #2 glazing and fireproofing has been completed. Glazing for the main elevator shaft was completed on February 11, 2012. The remainder of the curtain wall framing and installation of the remaining glazing has been completed. The remaining fireproofing at the station, located at the Outbound side of the Station (East Side), was completed during a weekend shutdown on May 12, 2012. Stair #1 steel has been installed and the concrete infill slabs have been placed. Elevators construction is ongoing, and will continue through the beginning of June 2012. The final signage and wayfinding package has been procured. The shop drawings for the aluminum and tactile Braille have been submitted. These signs will be installed by June 30, 2012 to support the start of revenue service for the garage. The porcelain enamel wayfinding signage will be installed as part of the larger system-wide wayfinding and Signage Pilot Program. This work will be completed after June 30, 2012.

The latest recovery project schedule, prepared by Suffolk, shows a June 12, 2012 substantial completion date. Start of Revenue Service for the garage has been delayed to June 30, 2012 to coincide with the switch-over of the bus services to the garage. A Change Order is being processed to incorporate these new dates in to the contract.

The delays to the critical path of the project are due to issues with the relocation of a major third-party utility, removal of unforeseen asbestos at the existing station, inadequate time allowed for fireproofing in the baseline schedule, and the delayed re-inspection of the interim elevator that failed its initial inspection.

Beverly Depot/Commuter Rail

As part of the proposed parking garage project in downtown Beverly, the MBTA purchased a parcel of land for use for a portion of the project. In the fall of 2009, the MBTA added 102 surface level spaces on the purchased parcel, which are currently open for use by commuters. Future development on this site will include a parking garage, replacing and supplementing the current surface parking.

Savin Hill/Red Line (Dorchester)
The MBTA purchased a parcel of land adjacent to the Savin Hill Red Line Station for the purpose of staging and related uses during construction. Upon completion of the project, the parcel was converted to a surface lot, which is currently open for use by commuters. The Savin Hill lot has 26 total spaces, with 20 available for use by daily commuters (the remaining spaces are reserved for MBTA employees and Zipcar users). This number has been adjusted as usage changes at Savin Hill Station.

Woodland/Green Line (Newton)
100 spaces were built as part of a joint development project in this area. These spaces were opened and made available to the public in 2007.

Quincy Shipyard/Ferry
The MBTA purchased a site previously occupied by a series of abandoned buildings associated with the Quincy Shipyard. The buildings were deemed a safety hazard and subsequently razed. Construction of a 168-space commuter parking lot is complete and open to the public.

Location	Spaces	Status
Wonderland/Blue Line (Revere)	612	Expected Completion March 2012
Beverly Depot/Commuter Rail	102	Complete
Savin Hill/Red Line (Dorchester)	20	Complete
Woodland/Green Line (Newton)	100	Complete
Quincy Shipyard/Ferry	168	Complete
Total	**1,002**	

Project Funding
Of the 1,004 spaces reported, 392 are complete and the 612 at Wonderland/Blue Line (Revere) have identified funding sources. The following table provides detail on the funding sources for the reported locations:

Location	Funding Source (Percentage)
Wonderland/Blue Line (Revere)	ARRA (46) Federal Earmark (6) MBTA (23) State MORE[1] Grant (20) State TOD Grant (5)
Beverly Depot/Commuter Rail	Federal Earmark (80) MBTA (20)
Savin Hill/Red Line (Dorchester)	MBTA (100)
Woodland/Green Line (Newton)	MBTA (100)
Quincy Shipyard/Ferry	Federal Earmark (80) MBTA (20)

Potential Challenges

With 392 spaces of the identified 1,004 parking spaces complete, and the Wonderland/Blue Line (Revere) garage currently under construction, it is anticipated that MassDOT will complete this SIP commitment. However, with the construction of the Wonderland garage taking longer than anticipated, MassDOT will not meet the full 1,000-space commitment in time for the December 31, 2011 deadline.

MassDOT recognizes that this delay triggers the Project Delay component of the SIP regulation and that MassDOT therefore needs to prepare a Petition to Delay and an Interim Emission Offset Plan, to be implemented for the duration of the delay. MassDOT believes that the delay in the Wonderland parking garage causes no measurable loss of air quality improvement at the opening date, as described in the Petition to Delay submitted to DEP on July 27, 2011. MassDOT nonetheless proposed increased Saturday bus service on Route 111—the highest ridership route serving the communities to the northeast of Boston—as interim mitigation. MassDOT proposed this mitigation as a result of public comment and in recognition that the SIP regulation is silent on the issue of de minimis impacts. This additional service began on January 7, 2012, the first Saturday following the January 1, 2012 deadline.

[1] Massachusetts Opportunity Relocation and Expansion Jobs Capital Program

III. RED LINE-BLUE LINE CONNECTOR - DESIGN

Project Description

The proposed Red Line/Blue Line Connector consists of an extension of the MBTA Blue Line under Cambridge Street to the Red Line station at Charles/MGH. As currently envisioned, the project consists of two major components: (1) a new tunnel extending the Blue Line under Cambridge Street from Government Center to Charles Circle and (2) a new underground Blue Line station connected to the existing Charles/MGH Station. The project will also consider whether and how to relocate Bowdoin Station.

The SIP regulations require only that MassDOT complete final design for the project. Construction of the Red Line/Blue Line Connector is not required.

Project Funding & Cost

The 'immediate needs' Transportation Bond Bill of 2007 provides state bond funding for the design of the Red Line/Blue Line Connector project. The estimated funding needed to complete design has increased from the previous $29 million estimate to $52 million, according to the new cost estimates completed during the development of the DEIR.

SIP Deadline

Before December 31, 2011, complete final design of the Red Line/Blue Line Connector, from the Blue Line at Government Center to the Red Line at Charles/MGH Station.

Project Status

On September 14, 2007, MassDOT filed an Expanded Environmental Notification Form with the Massachusetts Environmental Policy Act Office. A public scoping session was held on October 17, 2007, and the Secretary of Energy & Environmental Affairs issued a certificate on the project on November 15, 2007. Based on the project scope as defined in the MEPA Certificate, MassDOT issued a Request for Proposals on March 27, 2008 for a consultant to complete the necessary environmental reviews and engineering for the project. MassDOT awarded a consultant contract during the summer of 2008.

MassDOT has completed the following environmental reviews and conceptual engineering for the project:

Draft Environmental Impact Report

- The Draft Environmental Impact Report (DEIR) was filed on March 31, 2010
- A MEPA Certificate for the DEIR was issued on May 28, 2010

Public Outreach

- Six Working Group meetings were held
- A public hearing on the DEIR was held on May 3, 2010
- A project website has been launched and is maintained at: www.mass.gov/massdot/redblue

Refinement of Alternatives/Conceptual Engineering

- Refinement of potential alternatives was performed for three options: (1) a no-build option, (2) a tunnel option with a relocated Bowdoin Station, and (3) a tunnel option with Bowdoin Station closed. The refinement of alternatives also included an evaluation of potential construction options (a mined tunnel vs. a cut-and-cover tunnel) and construction phasing schemes.
- A *Definition of Alternatives/Conceptual Engineering Report* was completed in November 2009.

Design Criteria

- A draft *Design Criteria Report* was prepared and was included with the *Definition of Alternatives Report*.

Alternatives Analysis

- An *Alternatives Analysis Technical Report* was completed on March 31, 2010.

Design

- The conceptual design of the project is complete.

Cost Estimates

- Conceptual cost estimates were included in the *Definition of Alternatives Report*.

Construction Staging and Sequencing Plans

- Construction staging and sequencing plans were included in the DEIR.

Real Estate Requirements

- Potential real estate impacts were identified as part of the DEIR.

Potential Challenges

As part of the environmental review and conceptual design process, MassDOT determined that the ultimate construction costs for the project will far outstrip the cost projections in place at the time that the SIP regulation was promulgated: $290 million at the time of the SIP regulation versus the current best estimate of $748 million (escalated to year of expenditure). MassDOT has already spent $3 million to advance the project through environmental review and conceptual design, but the current $52 million estimate to complete final design substantially exceeds the $29 million previously identified for the effort in the 2009 Regional Transportation Plan for the Boston Region. Furthermore, MassDOT has been unable to identify funding with which to construct the Red Line/Blue Line Connector at any point in the next 20 years. As a matter of policy, MassDOT believes that it is irresponsible to spend precious public funds to design and permit transportation projects for which there are no identified construction funds, particularly given the need to continually refresh planning and permitting materials for major projects. To pursue final design of the Red Line/Blue Line Connector project at

this point would be to squander resources that could otherwise be spent on projects for which construction funds are already committed.

Therefore, MassDOT has initiated a process to amend the SIP to permanently and completely remove the obligation to perform final design of the Red Line/Blue Line Connector. To this end, MassDOT will continue to work with DEP and with the general public on the amendment process. MassDOT has not proposed to substitute any new projects in place of the Red Line/Blue Line Connector commitment, given the absence of any air quality benefits associated with the current Red Line/Blue Line commitment (final design only). Correspondence from MassDOT to DEP formally initiating the amendment process was submitted on July 27, 2011, and is posted to the MassDOT website.

IV. GREEN LINE EXTENSION TO SOMERVILLE AND MEDFORD

Project Description

This project – the purpose of which is to improve corridor mobility, boost transit ridership, improve regional air quality, ensure equitable distribution of transit services, and support opportunities for sustainable development – will extend the MBTA Green Line from a relocated Lechmere Station in East Cambridge to College Avenue in Medford, with a branch to Union Square in Somerville.

Proposed Stations

New Green Line stations are currently proposed for:

- **College Avenue, Medford** – Located at the intersection of College Avenue and Boston Avenue in Medford, adjacent to Tufts University. The station platform will be located on the north side of the College Avenue Bridge, which crosses over the MBTA Lowell Line. Access to the station will be provided from both Boston Avenue and College Avenue, as well as from the Burget Avenue neighborhood, which lies northeast of the station site.

- **Broadway/Ball Square, Medford/Somerville** – Located at the intersection of Broadway and Boston Avenue on the north side of Ball Square. The station platform will be located on the north side of the Broadway Bridge, which crosses over the MBTA Lowell Line. Access to the station will be provided from both Boston Avenue and Broadway. A traction power substation, needed to support the Green Line Extension, will be installed at this location.

- **Lowell Street, Somerville** – Located at the Lowell Street Bridge, which crosses over the MBTA Lowell Line adjacent to the proposed extension of the Somerville Community Path. The station platform will be located on the north side of the Lowell Street Bridge. Access to the station will be provided from Lowell Street.

- **Gilman Square, Somerville** – Located in the vicinity of the Medford Street crossing of the MBTA Lowell Line, behind Somerville City Hall, Public Library, and High School. The station platform will be located on the north side of the Medford Street Bridge, which crosses over the MBTA Lowell Line. Access to the station will be provided from Medford Street. The proposed extension of the Somerville Community Path will be located in close proximity to the station, and a traction power substation needed to support the Extension will also be installed adjacent to the Community Path on the south side of the corridor.

- **Washington Street, Somerville** – Located within the footprint of the Washington Street Bridge, proximate to Somerville's Brickbottom, Inner Belt, and Cobble Hill areas. The station platform will be located south of the

Washington Street undergrade crossing of the MBTA Lowell Line. Access to the station will be provided via entrances located under or adjacent to the south abutment of the bridge, in conjunction with improved sidewalk and street-crossings in the area. The proposed extension of the Somerville Community Path will be located in close proximity to the station.

- **Union Square, Somerville** – Located east of Prospect Street in the vicinity of Union Square in Somerville. The station platform will be located within the MBTA Fitchburg Line right-of-way east of Prospect Street. Access to this station will be provided from both the street and bridge levels of Prospect Street.

Details of the design of the stations, including the relationship of the stations to the pedestrian, bicycle, and bus networks around them, are now being more fully developed. The MBTA completed in late spring / early summer 2011, a series of public Design Workshops, held to engage the public in developing the 'look and feel' of the stations and the areas around the stations. The MBTA has used the information collected at the Workshops and from work with the Green Line Extension Design Working Group to inform the ongoing station design and engineering work and has now completed a second round of public Station meetings to present the latest concepts and receive feedback , which has mainly been very positive.

Vehicle Storage and Maintenance Facility

The Green Line Extension will also require the construction of a new light rail vehicle storage and maintenance facility in the vicinity of the Green Line Extension. MassDOT has identified a location known as 'Option L' in the Inner Belt area of Somerville as its preferred alternative for the location of the vehicle support facility. The MBTA has completed the programming and is advancing the design of the civil/site components of the maintenance facility and its associated vehicle storage areas. The MBTA must acquire certain parcels of private property and relocate select businesses in order to clear the site and construct the vehicle facility at the Option L location. Further, steps to acquire these parcels will start when a FONSI is received from the FTA, which is expected by the end of May.

Somerville Community Path Extension

In addition, the Green Line Extension project includes the design of the proposed extension of the Somerville Community Path (not part of the SIP commitment).

Project Funding & Cost

MassDOT and the MBTA continue to work with the FTA to seek funding for the Green Line Extension project under the FTA New Starts capital funding program. In January of 2010, MassDOT and the FTA initiated formal collaboration on the development of a complete New Starts application for the Green Line Extension project, including oversight and assistance from a Project Management Oversight Consultant (PMOC). This effort is and will be ongoing. The MBTA, MassDOT, FTA, and the PMOC held a

week-long 'Cost and Schedule Risk Assessment' Workshop in March 2011, which was crucial to moving ahead with the New Starts application process and the application for approval to enter Preliminary Engineering

In addition to the use of any federal funding, MassDOT and the MBTA will use Commonwealth funds to support the design and construction of the Green Line Extension project. These funds will be raised with the backing of authorizations made to support the SIP projects in Transportation Bond Bills of the past several years. At present, MassDOT has $800 million (less funds already spent on planning, design, and construction) in active Transportation Bond Bill authorizations for the SIP projects.

As needed, MassDOT will seek additional Transportation Bond Bill authorization to cover the costs of the Green Line Extension project, as well as other SIP projects. At the present time, the cost of the Green Line Extension project is estimated at approximately $1.115 billion. This estimate results from an additional project cost and schedule risk analysis which indicates that, based on the current array of cost and schedule risks facing the project, there is a 50% probability that the project will be completed for this estimated amount or less. The MBTA is working to mitigate those identified risks and complete the project for an amount less than that project estimate.

SIP Deadline

Before December 31, 2014, construction of the following facilities shall be completed and opened to full public use: 1. The Green Line Extension from Lechmere Station to Medford Hillside; 2. The Green Line Union Square spur of the Green Line Extension to Medford Hillside.

Project Status

State-level environmental review (MEPA) was completed in July 2010. Federal-level environmental review (NEPA) documents were submitted to the Federal Transit Administration (FTA) in September 2011, and a public hearing was held on October 20, 2011 (to accompany a 45-day public comment period). The comment period is now closed and MassDOT has completed comment compilation and responses for FTA review.

The Green Line Extension project team is currently performing Advanced Conceptual Engineering for the Green Line Extension project, while awaiting approval from FTA to enter into the Preliminary Engineering phase. The team is also pursuing a revised project delivery approach and the division of the project into (at least) four phases.

A draft New Starts submittal was first presented to FTA in September 2011 for its review. A second, near final, New Starts submittal, including the updated Operations & Maintenance (O&M) modeling information, was submitted to FTA for formal evaluation and rating on December 27 2011. The last remaining O&M information, completing the application package, was submitted in late January 2012. The O&M

model itself was approved by FTA staff in February and the financial plan has been reported to be thru the final review by the FTA's financial oversight consultant, with overall review and ranking expected shortly. These actions will allow completion of two critical activities, the FTA action to approve the requested permission to enter the Preliminary Engineering phase and the FTA issuance of the Finding of No Significant Impact (FONSI). Our best projection now has receipt of these which we had hoped to receive by the end of 2011 is now in the middle of May 2012.

Procurement of 24 new Green Line vehicles designated the 'Type 9' and needed to support the operation of the Green Line Extension, is now underway. The MBTA advertised for the new vehicles in January 2011 and held a pre-bid meeting for prospective bidders in February 2011. Proposals were submitted to the MBTA by potential car builders on June 13, 2011 and are currently under review by the MBTA Technical Selection Committee and on schedule for approval at a MBTA board meeting in late summer 2012.

As reported earlier, completion of an agreement with Pan Am Railways allowed the Commonwealth to acquire land and track vital to the construction of the project in the red bridge and Lechmere area. In order to ensure that the design of new Lechmere Station and its accompanying roadways and pedestrian crossings is done in such a way that is suitable both for the existing abutting neighborhoods at the future NorthPoint area, active coordination is ongoing between the MBTA, the developers of the NorthPoint site (HYM Investments), MassDOT, and the City of Cambridge.

MassDOT and the MBTA are collaborating on necessary background and support work associated with the real estate needs of the Green Line Extension project. A confirmatory survey of the Right of way line and adjacent property lines is underway and will be completed in the coming months. MassDOT has requested and been granted approval from FTA to begin certain pre-acquisition activities ahead of the completion of the NEPA process. Those activities have begun, including the work associated with the title surveys for the anticipated full acquisitions. A relocation consultant, retained by the MBTA Real Estate Department, is assisting with the real estate elements of the Green Line Extension project.

As noted Advanced Conceptual design work is progressing on the Green Line Extension project, including: refinement and analysis of track alignments and typical section verification, bridge and station design, development of design criteria, a traction power study, maintenance facility programming and yard layout. In Early May, the MBTA Board of Directors approved an amendment to the contract for the Green Line Extension PM/CM/Conceptual design team that added budget to allow the continuation of its efforts through August 2013. The advanced conceptual design effort will soon culminate when the In-Progress Advanced Conceptual/Preliminary Engineering Submittals for elements of the Green Line Extension Project are made to MBTA. Submittal of the 7 Station designs are anticipated in May, the Viaducts, Bridges and

roadways in June and the track and guideway in July as required survey work has affected progress on these items.

Further, the MBTA has received qualification statements and shortlisted 3 qualified final design teams. The Request for Proposal for Final Design services was issued to these firms on May 3rd. Proposing teams are expected to make their submissions to the MBTA in mid-June, with MBTA Board approval of the award of these design services expected in August or September 2012.

The MBTA continues to advance designs for the stations and bridges, still generating new questions and design challenges, some related to emergency egress and accessibility requirements some related the receipt of new, more detailed survey information and recently identified utility conflicts. Additional study work to resolve those issues as quickly as possible was included in the scope of the amendment recently approved so they can advance while the procurement and transition to the final design team proceeds on a parallel path. Coordination with each of the Cities also continues on traffic analysis and alternative roadway designs around each of the stations. Reaching resolution of the design moving forward is still required with Somerville at Gilman Square Station, where the open issue is the space available for the Ride program to drop-off. Roadway design at Lechmere, which is being performed by the HYM development team, continues to be an item of discussion with certain members of the East Cambridge neighborhood. Design of three bridges (School Street, Lowell Street, and Broadway) continue to progress. MassDOT comments on the submitted draft bridge sketch plans have been received and are being incorporated, while the 25% roadway plans for the bridges have been submitted for review. Station specific alternatives on emergency egress off the end of the platforms continue to be discussed with state public safety officials. It is anticipated that a code interpretation hearing will be required to provide firm direction on how to proceed with the designs going forward.

Detailed design work is continuing on a Phase 1 Early Bridge/Demolition package that includes the widening of two railroad bridges to accommodate the additional Green Line tracks and the demolition of the MBTA tire storage building at 21 Water Street in the Lechmere area to provide parking and staging area for the Phase 2/2A work. Survey, property issues, drainage design and retaining wall design are all being worked on and advanced along with coordination with the Cities and the abutters. A public meeting to review the scope of that contract was held on January 25, 2012. It is still expected that the bidding for the work will occur over the spring and summer of 2012 after receipt of the FONSI and construction would begin in late fall of 2012.

Previously, the Green Line Extension project team performed a cost and schedule analysis and a risk analysis that thoroughly examined all aspects of the project. As a result of these analyses, MassDOT and the MBTA last summer predicted a range of completion dates for the project, assuming Design/Build procurement of one large

package. As has been reported, the range of projected dates for initiation for full revenue service for the Green Line Extension is:

- 10% probability of completing in Autumn 2018
- 90% probability of completing by the Summer 2020

This risk-based schedule assumed Design Build as the project delivery method and was developed recognizing lessons learned on the Greenbush Commuter Rail project, in which the MBTA did not take ownership of needed properties until after the Design/Build process began, which cost the MBTA both time and money.

MassDOT and the MBTA continue to seek ways to accelerate the project timeline where possible, and have met with legislative and municipal leaders to evaluate strategies including the use of different project delivery methods, to shorten the schedule for delivery and to incrementally construct and open portions of the project. As discussed above, a potential change in the program delivery methodology is still being evaluated and legislative language requesting authorization to use a delivery method called Construction Manager/General Contractor to deliver the Green line program has been developed.

Public outreach on the project, which has included hundreds of meetings and other events over multiple years, continues. MassDOT and MBTA staff have met with numerous public groups, elected officials, and other interested parties. Meetings to present the advancement of the designs for the Gilman Square and Lowell Street Stations and on the Ball Square and College Avenue Stations were held on March 7 and 21, respectively A meeting is being scheduled to present the advancements in the design of retaining and noise walls along the corridor.

Potential Challenges

MassDOT – which has committed substantial resources to the Green Line Extension project, a top transportation priority of the Commonwealth and the largest expansion of the MBTA rapid transit system in decades – has now transitioned the project from the planning and environmental review phases to design, engineering, and eventual construction, coupled with the tasks associated with applying for New Starts funding. As part of this transition, the MBTA has assumed lead project management responsibility for the ongoing development of the Green Line Extension project, with MassDOT continuing to complete the NEPA process, the New Starts application and provide legislative support to the MBTA on an as-needed basis on policy and funding issues.

The Green Line Extension remains an enormously complex capital project, with many tasks and sub-tasks that must be completed, some in sequence and some in parallel, in order for the first rider to travel from a relocated Lechmere Station toward Union Square and College Avenue. As mentioned above, however, MassDOT and the MBTA

are pursuing ways to expedite the delivery of the project, with a focus on a phased delivery approach and the use of a variety of project delivery methods which are expected to mitigate some of the larger pressing project risks (but also introduce their own complications). At this point one of the largest challenges to the schedule continues to be the receipt from the FTA of the approval to enter PE and the receipt of the FONSI which are some months later than anticipated. The next largest challenges are: the approvals to use CM/GC as a project delivery method; and the completion of the next steps in the New Starts process, including an application for and obtaining FTA approval to enter Final Design. As the project delivery strategy evolves, the project schedule will be updated and made available to the public.

Finally, although the goal of the phased project delivery approach is to bring on components in a series of interim project milestones, the timeline for overall project completion listed above represents a substantial delay beyond the current SIP deadline of December 31, 2014, triggering the need to provide interim emission reduction offset projects and measures for the period of the delay (beginning January 1, 2015). Working with the Central Transportation Planning Staff, MassDOT and the MBTA are currently initiating the process of calculating the reductions of NMHC, CO, and NOx – reductions equal to or greater than the reductions projected for the Green Line Extension itself, as specified in the SIP regulation – that will be required for the period of the delay. Once that process is complete, MassDOT and the MBTA will develop a portfolio of interim projects and/or measures that can meet the requirement, and will seek input from both DEP and the general public on the portfolio.

MassDOT and the MBTA are aware of the strong public interest in potential interim emission reduction offsets, having already received many suggestions and recommendations; we will strive to make use of ideas presented to us by the public whenever possible. However, MassDOT and the MBTA are acutely aware of the need for any selected interim emission reduction offsets to quantitatively and demonstrably meet the emission reduction threshold established in the SIP regulation, and will be subjecting potential interim emission reduction offsets to necessary rigorous analysis by the Central Transportation Planning Staff. MassDOT and the MBTA are also sensitive to the constrained fiscal environment in which all of the Massachusetts transportation agencies currently operate, and will weigh fiscal concerns when selecting appropriate interim emission reduction offsets.