MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

STATE IMPLEMENTATION PLAN – TRANSIT COMMITMENTS
MONTHLY STATUS REPORT

APRIL 17, 2014

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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 200*9."

This is the forty-second update of the required monthly status reports, to be presented to the Boston Region MPO at their March 20, 2014 meeting. This report builds on the *State Implementation Plan Transit Commitments 2013 Status Report*, submitted to the Massachusetts Department of Environmental Protection on July 2, 2013. This report will be posted on the website of the Massachusetts Department of Transportation.

Following the submittal of the 2012 *Agency Response to Public Comments,* MassDOT is no longer reporting on the 1,000 Parking Space requirement, as that project is complete.

I. FAIRMOUNT LINE IMPROVEMENT PROJECT

Project Description

The 9.2-mile Fairmount commuter rail line runs from South Station, previously serving four stations (Uphams Corner, Morton Street, Fairmount, and Readville) in the communities of Dorchester, Mattapan, and Hyde Park, and terminating 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 – New market, 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 enhance service, and allow for increased frequency on the line.

Project Funding & Cost

In August 2007, MassDOT and the MBTA executed a contract to transfer approximately $39 million from the 'immediate needs' Transportation Bond Bill of 2007 (which provides state bond funding to support the costs of the SIP projects) from MassDOT to the MBTA to support the 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 the construction of the station at Four Corners. A third funding agreement, approved in June 2011 by the MBTA Board of Directors in the amount of $61,616,500, has allowed the remaining stations (including Blue Hill Avenue) and bridges, to advance. These contracts total approximately $124.4 million in spending on the Fairmount Line Improvement Project to this point.

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

Necessary upgrades to interlocking and signal systems 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 Fairmount project includes replacing three bridges over the Neponset River. All three bridges are now complete. Construction took place between January 2011 and August 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 and **NewMarket Station** opened for service on July 1, 2013. Punch-list construction items are near completion at both stations. The punch list for NewMarket Station is complete and for Four Corners station, the list will go on well into 2014. The final certificate of occupancy for the NewMarket Station was received this month. Four Corners Station began construction in January 2010, while NewMarket Station began construction in December 2010.

Talbot Avenue Station opened in November 2012. Final work was completed in June 2013 to address neighborhood privacy concerns. The **Talbot and Woodrow Avenue Bridges Rehabilitation** projects began construction in November 2010. The structural 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.

The proposed **Blue Hill Avenue Station** has been the subject of significant community controversy over the past three 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 developed one 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, however, continues to encounter opposition from some abutters who question the need for and appropriateness of any commuter rail station in this location. The MBTA has responded to the immediate neighborhood concerns by completing an additional analysis of noise and vibration impacts and mitigation measures.

The MBTA and MassDOT made a final determination on the Blue Hill Avenue station in May 2011. Design of the center-island station concept is continuing, as is ongoing discussion with the opposing abutters about appropriate mitigation. The redesign of the station has reached the 60% level. In addition, MassDOT has agreed to fund peer review on the 60% center-island design specifications and drawings, noise and vibration analysis, site alternatives analysis, feasibility study and needs assessment, to be performed by a firm selected by the abutters (Polaris Consultants). Peer review is ongoing and the draft results were recently received and being reviewed internally. MBTA will be able to develop a new schedule for completion of Blue Hill Avenue Station after assessing the results. Given the unexpected delays, it is unlikely that the Blue Hill Avenue Station will be completed before 2015, at the earliest.

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. A reliable completion date for Blue Hill Avenue station continues to be unknown at this time, although the MBTA is working to advance the project as quickly as possible.

MassDOT recognizes that this delay has triggered the Project Delay component of the SIP regulation. Therefore, MassDOT prepared 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, and posted to MassDOT's SIP website.

As described in the Offset Plan, MassDOT 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 that would meet the emissions reduction targets. MassDOT submitted these proposed measures to DEP in a July 27, 2011 petition, after which time MassDOT and the MBTA continued to work to refine the offset concepts for implementation, including a second letter to DEP (dated November 29, 2011) describing changes to the proposed offsets. On January 2, 2012 (the first weekday following January 1), the offset measures were implemented: 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. 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 Charles/MGH Station on the Red Line station. 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 for the project.

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, 2010A 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

MassDOT has made a good faith effort to meet the commitment to complete final design of the Red Line/Blue Line Connector, including the accomplishments listed above. However, 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 last 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 that end, MassDOT has officially sought approval from DEP to support a SIP amendment process, which will include public input and discussion. MassDOT is not proposing 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.

On September 13, 2012, DEP held two public hearings (at 1pm and 5pm) to take public comment on MassDOT's proposed amendments to 310 CMR 7.36, Transit System Improvements, including the elimination of the requirement to complete final design of the Red Line/Blue Line Connector. Between the two hearings there were 16 attendees, 10 of whom gave oral testimony. All those who spoke at the hearings spoke in favor of DEP not removing the commitment. DEP accepted written testimony until September 24, 2012.

On August 23, 2013, EPA sent a letter to FHWA providing an update on Massachusetts Air Quality Conformity. In that letter, EPA noted the Red Line/Blue Line Connector Design project has not met the SIP completion date of December 31, 2011, but that MassDOT is not obligated to implement interim emission reduction offset projects because no emission reductions are associated with the design project.

On October 8, 2013, the Department of Environmental Protection approved a request made by MassDOT in July of 2011 to revise 310 CMR 7.36 to remove the requirement for MassDOT to complete the design of the Red Line/Blue Line Connector. This revision to the State Implementation Plan must now also be approved by the U.S. Environmental Protection Agency. The timing of that final approval is currently unknown. The text of the revision is available on the MassDOT website at:
http://www.massdot.state.ma.us/Portals/17/docs/sip/October13UpdatedSIPReg.pdf

III. 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. The project is a collaborative effort of MassDOT and the MBTA, with the MBTA taking the lead in design, engineering, construction and project management.

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. An electrical substation, needed to support the Green Line Extension, will be built 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 and with a connection to the station, and an electrical 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 Brick Bottom, Inner Belt, and Cobble Hill

neighborhoods. The station platform will be located south of the MBTA Lowell Line Bridge over Washington Street. 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 would 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.

Vehicle Storage and Maintenance Facility (VSMF)

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. The facility will be constructed on an L-shaped parcel in the Inner Belt area of Somerville that is adjacent to the Boston Engine Terminal. 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 this location.

Somerville Community Path Extension

The Green Line Extension project also includes the design of the proposed extension of the Somerville Community Path from south of Lowell Street to the Inner Belt area of Somerville. Additional designs are being developed for south of the Inner Belt area. The Path Extension is not part of the SIP commitment.

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 and 2.) The Green Line Union Square spur of the Green Line Extension.

Project Status

Project Team:

The MBTA has procured an experienced project team to manage the design and complete the construction of the Green Line Extension project. These team members are referenced throughout the remainder of this report:

- Program Manager / Construction Manager (PM/CM): HDR/Gilbane; functions as an extension of MBTA staff.
- Advanced Preliminary Engineering / Final Design (APE/FD): AECOM/HNTB; responsible for advanced preliminary engineering and final design.
- Phase 1 Contractor (Design-Bid-Build): Barletta Heavy Division.
- Construction Manager / General Contractor (CM/GC): WSK (JF White/Skanska/ Kiewit); responsible for preconstruction support services to the MBTA and is

anticipated to be responsible for the Construction of Phases 2/2A, 3 and 4 of the GLX Program.

- Owner's Representative: Hatch Mott MacDonald; Commonwealth-required position for projects of this size.
- Relocation Consultant: Peter W. Sleeper Associates; reports to MBTA Real Estate preparing Relocation Plans for those properties that require relocation.
- Independent Cost Estimator (ICE): Stanton Constructability Services; provides independent cost estimates for each identified Interim GMP Package for comparison against the cost proposal submitted by the CM/GC.

Environmental Approvals:
State-level environmental review (Massachusetts Environmental Policy Act [MEPA]) was completed in July 2010. Federal-level environmental review (National Environmental Policy Act [NEPA]) documents were submitted to the Federal Transit Administration (FTA) in September 2011, and a public hearing was held on October 20, 2011. A Finding of No Significant Impact (FONSI) was issued by the FTA on July 9, 2012. The July 2012 release of a FONSI completed the federal-level environmental review process. This date was approximately seven months later than anticipated based on the schedule developed for the Green Line Extension project.

Funding Approvals:
MassDOT is pursuing federal funding – through the competitive New Starts program managed by FTA – to support the design and construction of the Green Line Extension project. The Green Line Extension project is, in many ways, an excellent candidate project for the New Starts program. The FTA issued preliminary guidance and thresholds policy in December, 2012 providing direction on how projects would be measured and rated. In June 2012, FTA rated the Project as a "Medium" and gave their approval for the Project to enter the *Preliminary Engineering* phase. Upon Congressional approval of Moving Ahead for Progress in the 21st Century (MAP-21), the Project's status was revised by FTA from *Preliminary Engineering* to *Engineering*, allowing the Project to begin planning for submission of the Full Funding Grant Agreement (FFGA) application.

As part of the State Legislative Transportation Funding Plan completed last year, the budget needed to complete the project was determined to be $1.33 billion[1] including all phases of the Green Line Extension project, inclusive of all capital costs, new vehicles, design costs, and real estate acquisitions.

[1] This cost estimate is presented in year of expenditure dollars and does not include spending prior to the FTA approval to enter Preliminary Engineering.

During September and October of last year, the MBTA Green Line Extension team developed and submitted a Fiscal Year 2015 (FY15) New Starts Update package to FTA which included an updated GLX Project Finance Plan. This effort was followed by a letter from the MBTA General Manager to the FTA in late January reiterating the Project's goals and the importance of the timing of the Advance Work approval and FFGA execution toward this end.

Recently, the MBTA learned that the Project's New Starts package had been reviewed by FTA and, was included in the FY15 Federal budget. . The GLX team met with the FTA on March 14th, 2014 to discuss the process and information required to submit the Advance Work package (for Project work elements that need to precede the FFGA execution) as well as information required to complete the program's FFGA application in mid-April.

In concert with FTA's MAP-21 guidance, the GLX team developed a Program schedule which established a sequence of steps needed to submit the FFGA application. In anticipation of the January MBTA/FTA Program risk workshop, the Project team completed two key elements which will support the Full Funding Grant Agreement (FFGA) application submission: 1) update of the Program cost estimate based on the Advanced Preliminary Engineering (APE) design package and 2) integration of the CM/GC's pre-construction schedule into the Program schedule.
The January MBTA/FTA risk workshop was well attended, with active participation by representatives from the FTA, PMOC, MBTA, Owner's Representative, Independent Cost Estimator, Design Consultant, CM/GC and PM/CM. The GLX team is currently focusing on potential adjustments to the base cost that were identified during the risk workshop and other open items identified but not quantified during the workshop. The team is also building and populating the risk model and will provide the results to the MBTA this month. The FTA had also requested their PMOC to run an independent risk simulation model separate from that prepared by the GLX team; the preliminary results were reviewed with the Project team in mid-February. Once the final results of both risk workshops are available, the project team will compare the conventional method of preparing the budget and the FTA's results to establish the updated Program cost and schedule. These costs will also be used to update the Project's Finance Plan which is part of the FFGA application submission in mid- April.

The GLX team has carried a one year timeframe for the review, approval and execution of the FFGA application based on feedback from the MBTA and FTA on similar projects. In fact, the review/approval timeframe for the FFGA application is variable and may actually be either longer or shorter than estimated, most likely in the range of 8 to 15 months. In addition, the GLX schedule has carried a duration of three months for the FTA review of the Advance Work submission, with the realization that this FTA review/approval process is also a variable and the actual timeframe may range from 2 to 6 months. The team will continue to drive the design and pre-construction efforts to complete these activities as quickly as possible; however, the impact of an accelerated or delayed FTA approval (i.e., less than or greater than the Project's estimated

milestone dates) on the overall Program schedule will not be realized until the FTA approvals are received.

Project Delivery:
The GLX team has advanced the Project in accordance with the revised delivery approach which divided the Project into multiple phases (described in more detail below). The PM/CM continues to act as the Program Manager, providing services as an extension of MBTA staff, with continuing design oversight activities as described below.

In September 2012, the MBTA completed the process to procure a Final Design consultant and issued an initial NTP to extend the design through Advanced Preliminary Engineering. However, the field subcontractor work needed to support the design process was not able to commence until February 2013 when the Design Consultant's contract was fully executed in. Therefore, the commencement of geotechnical field work, a critical item in the foundation design of retaining walls and viaduct structures, was delayed until late winter 2013, impacting the APE design.

As discussed further in this report, the majority of the GLX Project is anticipated to be constructed using the CM/GC delivery method, an integrated team approach to design and construction. Approval to use CM/GC was signed into law by the Governor in June 2012 and approved by the MBTA Board of Directors in July 2012. The Office of the Inspector General then approved the use of CM/GC approach and the procurement procedures in late November 2012, some three months later than the project had anticipated. Between December 2012 and June 2013 the Project team completed the procurement and selection process for the CM/GC contractor. A NTP was issued to the CM/GC on July 19, 2013 for preconstruction services up to $7,150,000, for a period of 18 months.

At the September 2013 MassDOT Board meeting, the Board voted to approve the transfer of $393 million from MassDOT to MBTA and for the MBTA General Manager to award Interim GMP contracts up to this amount to the CM/GC for the construction of the Phase 2/2A scope (Lechmere to Washington and Union) and early utility relocations in this area and at three bridges which are part of the Phase 4 construction. In October 2013, MBTA issued the Notice to Proceed to the Independent Cost Estimator team (ICE), completing their procurement. A review/validation of the ACD estimate was completed by the ICE in January 2014.

The CM/GC is reviewing the Project design documents and the Program schedule, and has completed their estimating process based on the APE design package submittal. The CM/GC also initiated a formal system referred to as the DART (Decision Analysis Resolution Team) for submitting design change suggestions with their anticipated beneficial cost and schedule implications. As part of the work process, an integrated work group reviews the individual DARTs and recommends selected DARTs to a Senior

Decision Group of MBTA, PM/CM, CM/GC and Design team members. The team continues to investigate and clarify further Project cost saving opportunities.

In accordance with state requirements, the MBTA has also procured an Owner's Representative (OR) to support and guide the MBTA throughout the implementation of the project. The OR provides oversight services to the Commonwealth, as well as peer review and value engineering services, and has been participating in weekly project meetings and performing review functions. At the end of December 2013, the OR filed their annual report on the Project.

New Green Line Vehicles:
Procurement of 24 new Green Line vehicles needed to support the operation of the Green Line Extension is ongoing. 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 two potential builders of the new Green Line vehicles on June 13, 2011, and have been reviewed by the MBTA Technical Selection Committee. To date, pricing in the proposals has been extended month to month by both proposers. In March 2013, the MBTA requested the two proposing teams to update and re-submit their proposals as a Best and Final Offer to the MBTA; these were received in September 2013. MBTA continues its process to procure additional vehicles to support the GLX project, with an updated target date to award a contract in May 2014. . The MBTA is also proceeding with the plan to rehabilitate eight currently out-of-service cars to support the Phase 2/2A opening of the extension to Washington Street and Union Square.

Real Estate:
MassDOT and the MBTA are presently collaborating on support tasks associated with the real estate work for the Green Line Extension project. The list of potential property impacts has been confirmed for Phase 2/2A and early Phase 4 construction. The properties associated with the balance of Phase 4 construction were identified based on the 30% design. The GLX team will continue to review and refine the identified property impacts, including further definition of temporary easements that may be needed to support construction. Property needs have been prioritized by phase and Interim GMP package sequence to track progress against the Program schedule. Over a dozen acquisition packages were submitted to the MBTA Real Estate Department to initiate appraisals in January. Additional acquisition packages have been submitted in February. However, the Project schedule is highly constrained, and the GLX team recognizes that some real estate activities are behind schedule. . Meetings continue to be held between individual property owners and the project team to coordinate schedules and project information.

The appraisal and relocation plan for the current occupants of the Vehicle Storage and Maintenance Facility (VSMF) site was approved by the FTA. . With this approval, MBTA submitted an offer to the property owners on the VSMF site. Negotiations with the

property owners are ongoing and will continue over the next few months; however, relocation activities can now commence. The GLXteam has also gained access to the existing facility for initial review of scope required for the hazardous material cleanup and is working to obtain approval to proceed with geotechnical work in this area.

The MBTA had executed a July 26, 2012 Memorandum of Understanding (MOU) with the City of Somerville to convey the necessary land parcels at the proposed Union Square Station site to the MBTA. A Memorandum of Agreement (MOA) Amendment is in process between the MBTA and City to address additional land needed by the MBTA at the station due to design modifications. The Union Square parcels have been acquired by the City of Somerville and are currently expected to be conveyed to the MBTA in the first quarter of 2014, a date which fully supports the Project's needs.

Coordination is ongoing with two residential apartment developments: Avalon Bay (formerly known as Archstone) at East Street and at 22 Water Street regarding civil/site issues, landscaping, construction impacts and sequencing of construction.

The phasing of the roadway improvements at Lechmere Station (O'Brien Highway, North First Street and Water Street) which are the responsibility of the North Point Development project (managed by HYM) are critical to the Project's completion and continue to be an item of discussion and coordination, along with the design of O'Brien Highway improvements. Discussion of these roadwork issues involves the North Point developers, the City of Cambridge, and the members of the East Cambridge neighborhood association. These improvements will also require signoff from MassDOT. Meetings to discuss construction phasing with HYM are on-going. HYM is scheduled to submit 25% design plans to the City in June 2014.

The team is also negotiating a MOU with the City of Somerville to have the Project demolish the existing Homans building and use the site (an underutilized building adjacent to the proposed station and bridge) to support construction staging at the Medford Street Bridge and for the construction of Gilman Square Station and other project elements in that area. Design issues associated with the station roadway work across from the Homans Building continue to be discussed between the MBTA and the City of Somerville. The latest draft MOU was not acceptable to the MBTA and work continues on this agreement.

The team and the City have finalized the Community Path MOA. As part of the MOA, the City will take certain property for the path; the work associated with this property taking needs to advance so as not to delay the current Project schedule.

A final appraisal is underway for the NStar property on the Somerville High School side of the Gilman Square Station area. A second review appraisal has been completed as there was some disparity in regard to the true value of this property. A meeting with NStar to discuss property acquisition is to be scheduled in March 2014. The cost and

schedule to off load the existing substation at Gilman Square, which is critical, continues to be an issue with NStar Operations.

The Project team is also coordinating with NStar on the design for the provision of power to the traction power substations at Red Bridge, the VSMF and Gilman Square Station. The GLX team is trying to expedite the NStar work order for power to the Red Bridge TPS and for offloading PNU-26 at Gilman.

The PM/CM continues to coordinate the geotechnical field investigation effort with MBTA Real Estate, MBCR flagmen, Pan Am flagmen and MBTA Signal and Power Departments. Field survey is ongoing to develop existing conditions plans for the Miller's River drainage work and to provide expanded information for the commuter rail track to support braking distance design. Both survey and geotechnical work is critical to the completion of the design.

Design Progress:

The Design team submitted the Advanced Preliminary Engineering (APE) design package to the PM/CM during the first week of September 2013. Using this submission, as well as input from the FTA, the Design team and the PM/CM have now developed the series of construction packages, including the early "advance" construction packages and the balance of work packages. The 90% design packages for Interim GMP #1 (Long Lead Items), Interim GMP #2 (Early Utilities for Phase 2/2A and Phase 4) and Interim GMP #3 (Millers River Drainage/Fitchburg Mainline Relocation) were received February 21, 2014. The design development of the IGMP #2 package continues to be affected by new utility information being found and may affect the completion of the design and estimating by the scheduled dates. The interim GMP-#4 Phase 2/2A balance of work 60% design package was submitted in mid-January and comments have been received from the MBTA, CM/CG and PM/CM.

The timeframe for FTA approval of Advance Work (Interim GMP #3- Millers River and Fitchburg Main Line) is most likely to occur sometime between three to six months after submission of the FFGA package to the FTA. Thus, the GLX team has adjusted their Program schedule to divide the design and construction packages into those requiring FTA approval and those which can proceed apart from this approval such as long lead and regional third party utility work. The Project team's goal is to have the construction documents completed to allow commencement of bidding and construction of the long lead and early utility packages in May/June 2014, and have the design of the elements requiring Advance Work approval by FTA completed in May to support start of construction in August 2014. The Phase 2/2A Balance of Work package is expected to reach the 90% Design stage by July 2014 and ready for bid by late 2014, ahead of the anticipated FFGA execution.

Public Outreach:
Public outreach on the project has included hundreds of meetings and other events over multiple years. MassDOT and MBTA staff have met with numerous public groups, elected officials, and other interested parties. Meetings have been held with a broad variety of groups, including two different project advisory committees – the former Project Advisory Group and the current Design Working Group – (transitioned to the Construction Working Group as decided in this month's meeting)- and their subcommittees; design review sessions with right-of-way abutters; interagency meetings; neighborhood briefings; briefings with elected officials; institutional and business group meetings; public meetings and hearings; land use workshops; and 'meet and greet' sessions, as well as many others.

Last month, the GLX team concluded a series of meetings to present and coordinate the retaining wall and noise wall design elements of the APE package with the adjacent neighborhoods. In February, the Project team met with the board of the Brickbottom Artist's building and Glass Factory Condominium to discuss these and other project elements; a similar meeting will be held with the residents of each property in the near future. A follow-up meeting to discuss noise mitigation issues has been scheduled this month with the Somerville Aldermen to address abutter concerns raised at the wall meetings. The Project team and the CM/GC hosted a Disadvantaged Business Enterprise (DBE) and small business public outreach event in February 2014.

The Project team has also continued to meet and coordinate design issues with representatives from the three municipalities and stakeholder groups including,: (1) the City of Somerville and Friends of the Community Path on the Path connections in the Red Bridge area, (2) the City of Cambridge on interim parking near Lechmere Station and Lechmere Station design, (3) the Cities of Medford and Somerville on Ball Square and (4) the City of Somerville, the City of Medford, and representatives of Tufts University on the Phase 1 mitigation cost, the long term drainage issues around College Avenue and the needed construction staging areas . The Project team also continues to respond to inquiries to the Project website with regard to scope, schedule, and overall coordination.

In January 2013, the Project team met with the Massachusetts Historic Commission (MHC) to discuss a number of historical issues including the Lechmere Station/viaduct and the demolition of the Homan's building. As a result of this meeting, MHC requested that a Historical American Engineering Report (HAER) be prepared to document the Lechmere Station and viaduct area. Due to changes to the viaduct demolition limits, the existing MOA was amended (Amendment No. 1) and submitted to MCH and FTA. MBTA received sign-off from MHC on MOA Amendment No. 1 in December 2013; however, approval from FTA is outstanding. Once FTA sign-off is received, the HAER and Amendment No. 2 for the Homan's building demolition at Gilman Station will be submitted for review.

Project Phasing and Delivery:
To tailor the project delivery method to best mitigate the larger project risks, MassDOT and MBTA are implementing a phased project delivery plan which has divided the project into four phases which will be further divided into design and interim GMP construction work packages.

Phase 1 Early Bridge/Demolition is using the traditional Design-Bid-Build approach for (1) the widening of two railroad bridges (Harvard Street Bridge in Medford, and Medford Street Bridge in Somerville) to accommodate the additional Green Line tracks and (2) the demolition of the MBTA tire storage building at 21 Water Street in the Lechmere Station area to provide parking and staging areas for the Phase 2/2A work.

The MBTA General Manager awarded the Phase 1 contract on December 13, 2012 and the MBTA issued a Notice to Proceed to Barletta Heavy Division on January 31, 2013. The MBTA is currently extending the southeast wall of the Phase 1 contract by adding 201 linear feet of retaining wall with noise barrier work that had been programmed for Phase 4. By constructing this work under the Phase 1 contract, this retaining/noise wall should be completed in time to support and facilitate construction once Phase 4 is underway. The addition of this work will extend the end date of the Phase 1 contract by six to eight months.

At the Harvard Street Bridge in Medford, all cast-in-place concrete work is complete on the original contract limits of the Harvard Street Bridge retaining wall. Work on the southeast retaining wall extension will begin once the temporary support of excavation system is in place (currently anticipated to begin in late May 2014). The installation of new storm drainage system elements in Harvard and Winchester Streets began on March 3, 2014. At 21 Water Street in Cambridge, soils storage activities continue in support of the construction of the Harvard Street Bridge walls. EPA's final environmental approval is expected shortly which will allow the demolition of the building to proceed. At the Medford Street Bridge in Somerville, intermediate painting of the existing structure is complete and new steel fabrication is ongoing. Support of excavation and concrete abutment modification work for the follow-on steel erection activities to widen the bridge structure will begin in the next few months.

Phase 2/2A will extend service from the (new) Lechmere Station to the Washington Street and Union Square Stations and relocate the bus facility and vehicle storage at Lechmere Station. MBTA's construction phasing plans are developed so as to complete construction in time to permit start-up of this portion of the GLX by mid-summer 2017. As detailed earlier, this schedule assumes that, advance work activities are approved by FTA to advance in the summer of 2014 ahead of the FFGA approval.

Phase 3 will clear the site of the existing facilities and will construct the VSMF. As the full storage yard and maintenance facility are not needed to support initial passenger service to Washington Street and Union Square, this phase has been scheduled to be completed some six months ahead of the date for revenue service to the Gilman Square, Lowell Street, Ball Square, and College Avenue Stations. The current Program schedule for this activity is getting tighter, as FTA approval is needed in order to start the property acquisition and relocation activities (described earlier) critical to start of construction. This acquisition/relocation process has started as FTA has allowed the offer letters to be presented.

Phase 4 will provide service beyond Washington Street Station (completed as part of Phase 2 above) to College Avenue Station. Phase 4 also represents completion of the Green Line Extension project. The targeted completion date of this phase established by as a result of the 2011 risk workshop (with a 50% probability) on or before July 2019. As discussed above, this date also assumed that the project was successful in advancing certain items into construction ahead of the Full Funding Grant Agreement. The updated risk evaluation workshop held in January 2014 and will be used to confirm or adjust the schedule for this work.

Potential Challenges

By filing an Expanded Environmental Notification Form, procuring multiple design consultants, and publishing both Draft and Final Environmental Impact Reports, MassDOT has met the first four interim milestones associated with the Green Line Extension Project. 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 transitioned the Project from the planning and environmental review phases to design, engineering, and has begun construction, coupled with the tasks associated with applying for New Starts funding.

In the 2011 SIP Status Report, MassDOT reported that the Green Line Extension Project would not meet the legal deadline of December 31, 2014. At that time, MassDOT projected a timeframe for the introduction of passenger service on the Green Line Extension to College Avenue/Union Square. The points within the timeframe are associated with different probabilities, as shown below:

10% Probability of Not Exceeding – Autumn 2018
90% Probability of Not Exceeding – Summer 2020

At this time, this schedule for overall Project completion remains in effect; however, it is being reviewed by the CM/GC as part of the results from the January MBTA/FTA Risk Workshop. Any revisions to the schedule will be included in the New Starts application for the FFGA now expected to be filed early in the second quarter of 2014.

MassDOT and the MBTA continue to seek measures to accelerate the Project timeline wherever possible. The phasing approach discussed above should provide for an accelerated delivery of some portions of the Project. In addition, MassDOT and the MBTA have succeeded in receiving legislative, Office of the Inspector General and MBTA Board of Directors authorization to use the CM/GC delivery method described above, which is expected to aid in meeting the dates above and overcoming some of the delays that were encountered related to the FONSI and the approval to enter into the Preliminary Engineering stage of the FTA New Starts program.

As stated, a major critical path item to the introduction of passenger service is the completion of the next steps in the New Starts process which include (1) submission of the New Starts Update and a viable Finance Plan to FTA [completed], (2) any required approvals from FTA to start construction of Advance Work on critical items by August 2014 (3) favorable rating by the FTA and inclusion in the FY2015 budget [completed], (4) completion of the package for initiation of the negotiations for a FFGA [now expected mid-April 2014], and (5) receipt of a FFGA within a one year timeframe, depending on the time necessary for FTA to complete the review of the GLX application and finalize the grant. The receipt of the FFGA is a key milestone, as it restricts the start of construction for the bulk of the Phase 2/2A and Phase 4 work.
Finally, although the goal of the phased project delivery approach is to complete components in an incremental way, 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 have initiated 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. MassDOT and the MBTA have also worked with the public to develop a portfolio of interim projects and/or measures that may meet the requirements, and have sought input from the public on the portfolio.

In June 2012, MassDOT released a list of potential mitigation ideas received from the public that could be used as offset measures and received in the summer and fall of 2012, MassDOT solicited public comments on these potential measures. Since that time, the MBTA has created an internal working group to determine a final portfolio of interim mitigation measures to implement by December 31, 2014, the legal deadline for the implementation of the Green Line Extension. This work is ongoing and an announcement is expected soon.