MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

STATE IMPLEMENTATION PLAN – TRANSIT COMMITMENTS
MONTHLY STATUS REPORT

NOVEMBER 20, 2014

FOR QUESTIONS ON THIS DOCUMENT, PLEASE CONTACT:
Massachusetts Department of Transportation
Office of Transportation Planning
10 Park Plaza, Room 4150
Boston, Massachusetts 02116
planning@state.ma.us
(857) 368-8855

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-seventh update of the required monthly status reports, to be presented to the Boston Region MPO at their November 20, 2014 meeting. This report builds on the *State Implementation Plan Transit Commitments 2014 Status Report*, submitted to the Massachusetts Department of Environmental Protection on July 22, 2014. 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 served 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.

The Fairmount Line Improvement Project involves 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 an upgraded signal system (required to advance the bridge reconstruction work). The intent of these upgrades has been to enhance future service, allowing for increased frequency on the line.

Planning Conformity

Throughout the life of the project, improvements to the Fairmount Line have been included in all relevant transportation planning documents, including the Regional Transportation Plans of the Boston Region Metropolitan Planning Organization (MPO).

Project Status

The sections below describe the current status of the different elements of the Fairmount Line Improvement Project:

Systems

Necessary upgrades to the required interlocking and signal systems have been completed and are currently in use, which has allowed for the reconstruction of structurally deficient bridges along the Fairmount Line.

Bridges

Construction to replace the Columbia Road, Quincy Street, and Massachusetts Avenue bridges was completed in 2010. The construction of the Talbot Avenue and Woodrow Avenue bridges is complete (see “New Stations” below). Construction of three bridges over the Neponset River was completed in summer 2013.

Existing Stations

As stated above, existing stations at Uphams Corner and Morton Street required rehabilitation for the project. The MBTA held a station re-opening at Uphams Corner on January 23, 2007. The reconstruction of Morton Street was celebrated at a station re-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 message signs, lighting, and landscaping.

New Stations

Four Corners Station opened for service on July 1, 2013. The station had been under construction since January 2010. The construction of Four Corners Station experienced delays due to unforeseen geotechnical conditions, relocation of existing utilities, and a redesign of the inbound sloped walkway structure at Geneva Avenue. Substantial completion of Four Corners Station occurred in June 2013 and final construction was completed in September 2013. There is only one remaining change order that must be processed and then this Contract can be closed out.

The construction of **Talbot Avenue Station** and the **Talbot and Woodrow Avenue Bridges** began in fall 2010. The construction lasted approximately twenty-six months, with substantial completion of the station and the bridges in October 2012 and final completion of work in January 2013. The structural replacement of the two bridges was completed over weekends in November and December 2011. Talbot Avenue Station opened in November 2012. There are several change orders that must be processed in order for this project to be closed out. The MBTA project office is negotiating with the Contractor to finalize payment.

Newmarket Station opened for service on July 1, 2013. This project is 100% complete and has been closed out.

The proposed **Blue Hill Avenue Station** has been the subject of significant community controversy over the past five years. In early 2009, after design work for the station was well underway (at the 60% design level), a small number of abutters raised concerns about negative impacts to residences immediately surrounding 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 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. Also these alternatives would serve fewer riders at a greater cost. The MBTA developed one additional alternative that made use of a center-island platform at the original station site in order to address abutter concerns by locating the platform further from homes and backyards. The MBTA then completed an additional analysis of noise and vibration impacts and considered mitigation measures to try and address any outstanding abutter concerns.

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. On September 15 the Design and Construction Department held a community meeting at the Mattapan Library led by the MBTA General Manager. While the community still has concerns the project team is now advancing the design with the understanding that continued coordination with the community is paramount. The 90% design plans are expected in January of 2015, and 100% plans in March 2015, and construction is scheduled to begin in Fall of 2015. If this schedule holds the station opening will be in November 2017.

Project Funding

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 provided Commonwealth 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 to the MBTA 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 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 authorized spending on the Fairmount Line Improvement Project to this point.

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 now is expected to be in November 2017.

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.

Planning Conformity

The design of the Red Line/Blue Line connector project has been included in all relevant transportation planning documents, including the Regional Transportation Plans of the Boston Region MPO.

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 (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.

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.

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 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 officially sought approval from DEP to support a SIP amendment process. 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 testified 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 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. A traction power substation will also 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's 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 Somerville Community Path will be located adjacent and connected to the station. A traction power substation will be installed on the south side of the corridor.

Washington Street, Somerville – Located at the Washington Street Bridge, proximate to Somerville's Brickbottom, Inner Belt, and Cobble Hill neighborhoods. The station platform will be located south of the MBTA New Hampshire Main 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 extension of the Somerville Community Path will be located adjacent to and provide access 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 MBTA's Boston Engine Terminal. The MBTA has acquired two of the four parcels needed to build the VSMF facility and is in progress on the remaining two parcels. Relocation activities are ongoing.

Somerville Community Path Extension

Until recently, the Green Line Extension project included just the design of the proposed extension of the Somerville Community Path from the proposed Lowell Street Station to the Inner Belt area. In May 2014, MassDOT and the City of Somerville, announced an agreement to add the construction of the Community Path, including a connection to the Cambridge/Northpoint area to the scope of the program. 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

The MBTA has established 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 the CM/GC for the first three (of eight) construction packages. WSK is also

anticipated to be responsible for the remaining 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 the project.

In addition to these team members, the GLX also works very closely with the Federal Transit Administration (FTA) and its Program Management Oversight Consultant (PMOC) on the GLX project.

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.

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, a strong candidate project for the New Starts program. In June 2012, FTA rated the Project as a "Medium" and approved the Project to enter the Preliminary Engineering phase. Following enactment of the Moving Ahead for Progress in the 21st Century Act (MAP-21) in January 2013, the FTA revised the project's status from Preliminary Engineering to Engineering. The project's updated status allowed the MBTA to begin planning for the submission of the Full Funding Grant Agreement (FFGA) application – which, if approved, will provide federal match for the project.

During September and October of 2013, the MBTA 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 2014 reiterating the project's goals and the importance of the timing of the advance work approval and FFGA execution toward this end.

In March 2014, the project was recommended for $100M in funding in President Obama's FY2015 budget. Subsequently, on March 31, 2014, the MBTA submitted a Request for Letter of No Prejudice (LONP) to FTA to allow advance work associated with

the Fitchburg Mainline and Millers River Drainage. On July 9, 2014, the MBTA received a letter from FTA approving the LONP. This is a major milestone for the project, as it allows critical work to commence ahead of the FFGA.

Over the last two months, the MBTA has worked with FTA Region 1 to finalize the components of the FFGA application package. These components, in conjunction with the MBTA Financial Capacity Review and the Project Readiness Report, represent the list of the required documents needed prior to initiation of the final FFGA review process and the recommendation of approval to Congress, which is a 30-day activity. The MBTA continues to work towards FFGA approval in late 2014.

Budget and Schedule

In January 2014, an MBTA/FTA risk workshop was held using the September 2013 Advanced Preliminary Engineering (APE) documents and estimate as its base. This workshop included participation by representatives from the FTA, PMOC, MBTA, Owner's Representative (OR), Independent Cost Estimator (ICE), Design Consultant, CM/GC and PM/CM. As part of the risk modeling process, the participants evaluated possible base cost adjustments based on the known design changes. The preliminary model results were reviewed with the MBTA and the FTA in mid-February. The FTA also requested their PMOC to run an independent risk simulation model separate from that prepared by the MBTA.

Based on the results of the PMOC/FTA risk analysis, the FTA recommended that the Full Funding Grant Agreement (FFGA) for the GLX project budget be established at $1.992 Billion, which includes a 30% project cost contingency. The project will also maintain a project completion date of June 2021, which includes one year of schedule contingency. The MBTA believes the FTA's budget and schedule are based on an extremely conservative assessment of the project's ability to mitigate many of the identified cost and schedule risks; however, the MBTA has accepted this budget and schedule which will be used in the completion of all documentation for the FFGA.

The MBTA is also actively working towards delivering the project at a cost lower than the FFGA budget. Relative to the FTA's request for a one-year schedule contingency, the MBTA is committed to completing the project by June 2020 (a date which is within the range of completion outcomes first developed in 2011) by working to successfully mitigate identified schedule risks.

Project Phasing and Delivery

To tailor the project delivery method to best mitigate the larger project risks, the MBTA is implementing a phased project delivery plan, which has structured the project into four phases.

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.

Phase 1 Construction Status

The MBTA awarded the Phase 1 contract on December 13, 2012 and issued a Notice to Proceed to Barletta Heavy Division on January 31, 2013. The MBTA has also added some retaining wall construction to the Phase 1 contract that had previously been programmed for Phase 4 in that area. By constructing this work under the Phase 1 contract, this retaining/noise wall should be completed in time to better support and facilitate track relocation as part of the construction of Phase 4. The addition of this work has extended the end date of the Phase 1 contract by six months.

At the Harvard Street bridge in Medford, the track throw to complete the relocation of the outbound commuter rail track to the new T1 bridge bay was completed on October 26, 2014. The work associated with the demolition of the old T1 bridge bay was completed the first weekend in November and the installation of the next portion of the new T2 bridge structure is scheduled for the weekend of December 13-14, 2014. Noise barrier column and panel installation above the cast-in-place retaining wall south of Winchester Court is anticipated to begin later this fall. Work on the final sections of the storm drainage improvements in Winchester Street is expected to be completed in November.

In Cambridge, the soil stockpiling and associated soil transport activities for the reuse of the soil as retaining wall backfill at the Harvard Street bridge site (above) have been completed. The project is working with adjacent developers to dispose of/reuse the remaining excess soils.

At Medford Street bridge in Somerville, activities to complete final fit-up and painting of the new north and south bridge bays are ongoing and are anticipated to be complete in the next two months.

Phase 2/2A, 3 and 4 are expected to be completed utilizing the CM/GC project delivery-approach after legislative approval to use this method as a pilot program was given in 2012. The CM/GC contract award was authorized by the MassDOT Board of Directors in July 2013. Since that time, the CM/GC has provided preconstruction services including design reviews and estimating, as well as bidding and reconciling the bids on the three early work contracts. The CM/GC has also been active in performing constructability assessments, preparing access and construction staging plans, preparing schedules for each *Interim Guaranteed Maximum Price* (IGMP) and recommending construction savings opportunities.

As part of the CM/GC delivery method, an Independent Cost Estimator (ICE) was hired in October 2013. The ICE began by validating the estimate prepared by the PM/CM and prepared independent estimates for the first three *Interim Guaranteed Maximum Price* (IGMP) packages (see below). Recently, the ICE review of the CM/GC and PM/CM estimates and after a series of reconciliations and re-submission of bids, determined that the pricing was within the required range to recommend contract award for the three early work packages.

On October 2, 2014, the CM/GC Master Agreement and the Pre-Construction contract were signed, and a Notice to Proceed (NTP) was issued to the CM/GC for the early work construction contracts:

- IGMP Contract #1: Procurement of long lead items including traction power substations, signal equipment and special trackwork and superstructure steel for the new Washington Street railroad bridge,
- IGMP Contract #2: Phase 2/2A and Phase 4 temporary utility bridges at Medford Street and Broadway and utility relocation work, and
- IGMP Contract #3: Millers River drainage improvements and the relocation of the Fitchburg Mainline commuter rail track

With NTPs issued for the early construction contracts, the project now has ongoing construction activities in Phase 1, 2/2A and 4. With the award of the viaduct steel package (IGMP #4A) anticipated in late November, all work that can begin prior to the FFGA approval will be underway.

Early Work Construction Status

Early construction activities have commenced including submittals on preconstruction survey, rodent control, safety plans and long lead equipment. In early November, the MBTA held a construction kick-off meeting for the three aforementioned contracts, and initial progress meetings were held to discuss critical work activities and baseline schedules. The contractor is anticipated to issue critical purchase orders, and mobilize and begin field work on IGMP #2 and #3 by the end of this month.

The CM/GC issued the subcontract package for IGMP Contract #4A (furnishing and fabrication of the long lead viaduct structural steel). A separate bid item for the installation of the steel will be included in future IGMP Contract #4 (balance of work for Phase 2/2A). It is expected that this long lead steel contract will be awarded prior to the middle of December.

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 schedule anticipates award of the balance of the work package for Phase 2/2A in February/March of 2015 after the FFGA is obtained with a completion of construction and testing date for Phase 2/2A in late 2017.

Phase 3 will construct the Vehicle Maintenance and Storage Facility (VMSF). As the full storage yard and maintenance facility are not needed to support initial (Phase 2/2A) 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 northern four stations. It is anticipated that the relocation activities of the current occupants of the VMSF site will be completed by early 2016, such that the site cleanup and demolition contract can commence shortly thereafter. The property acquisition and relocation activities that are described below are critical to the start of construction and completion of this facility.

Phase 4 will provide service beyond Washington Street Station (completed as part of Phase 2/2A above) to College Avenue Station. It is currently targeted to be completed in accordance with the schedule discussed earlier in this document. The bulk of construction is anticipated to begin later in 2015, again after receipt of the FFGA from FTA.

New Green Line Vehicles

The MBTA advertised for new vehicles in January 2011 and proposals were submitted in June 2011 to be reviewed by the MBTA Technical Selection Committee. In March 2013, the MBTA requested the two proposing teams update and re-submit their proposals as a Best and Final Offer to the MBTA. These were received in September 2013. On May 14, 2014, the MassDOT Board approved a $118M contract for CAF USA to supply 24 light rail vehicles for the Green Line Extension project. The NTP was received on September 4, 2014 with the new vehicles anticipated to be supplied beginning in late 2017 through late 2018. The MBTA is also proceeding with the rehabilitation of eight cars to support the Phase 2/2A opening of the extension to Washington Street and Union Square.

Real Estate:

MassDOT and the MBTA are collaborating on tasks associated with the property acquisition efforts for the Green Line Extension project The MBTA continues to review and refine the list of identified properties that are impacted, including further definition of temporary easements that may be needed to support construction.

The project completed several critical license agreements with the City of Somerville for access to the GLX corridor at Union Square and license agreements with Community Alternatives, 61 Medford Street, 68-86 Joy Street and NStar. The MBTA continues to work on critical licenses that are needed for work associated with IGMP #2, IGMP #3 and IGMP #4.

The MBTA and the City of Somerville have reviewed the Union Square MOA Amendment No. 1 which is necessary to convey temporary access and staging parcels at the Union Square Station site, and the MOA is currently being finalized. The City of Somerville has recently begun to clear the area needed by the GLX project to allow for

the start of the environmental and construction work. The MOA with the City of Somerville to convey necessary parcels at the Gilman Square Station site has been drafted and is anticipated to be executed this fall. Completion of the various agreements will continue throughout 2014 and 2015.

A Soils Management License Agreement has been negotiated and executed with HYM/North Point. This agreement will allow the contractor to build a haul road to access the Red Bridge area and to dispose of up to 125,000 cubic yards of excess GLX soils on the HYM/North Point site, as long as the soil meets structural and environmental requirements. This creates an opportunity for the project to save substantial money on soil disposal. The Long Term Parking Agreement which includes the parameters to build temporary Lot A on the HYM/North Point land is being finalized and execution is anticipated by November 30, 2014. Two additional agreements are anticipated to be finalized with North Point in 2015.

The second closing for PanAm has been completed. One additional closing will be required after the Lechmere Station is built and revenue service has started.

A MOA in regard to Phase 1 work has been completed with Tufts University and a second MOA is being drafted for design changes at the College Avenue station due to the university's master planning efforts. A follow-up meeting was held on November 3, 2014 to discuss proposed costs and next steps.

Design Progress

Many project design milestones have already been reached on the Green Line Extension project. As described earlier in this report, the three key early work packages (IGMP #1, IGMP #2 and IGMP #3) have completed the 100% design conformed documents phase and have been awarded. In addition, bids have been received on IGMP #4A to furnish and install long lead steel for the viaduct sections.

Contract packages IGMP #4 through IGMP #7 (exclusive of IGMP #4A) include the balance of work elements that are scheduled to commence construction after FTA approval of the project's FFGA. The Design Consultant submitted the 90% design package for IGMP #4 (Phase 2/2A balance of work) on July 30, 2014. The MBTA, PM/CM and the CM/GC have completed reviewing and commenting on these 90% design plans. Work is progressing on the 100% IGMP #4 design plans, scheduled to be submitted on November 21, 2014. In addition, the PM/CM, CM/GC and the ICE are preparing estimates for the cost of IGMP #4 and have completed quantity take-off and reconciliation.

On September 30, 2014 the Design Consultant submitted the 60% design work for IGMP #5 (Phase 4 balance of work). A briefing was held for the MBTA and project staff who will be reviewing the documents, and the GLX team has started the estimating work effort.

The Design Consultant and the PM/CM continue to review Tufts University's design concepts to assess the potential design, cost and schedule impacts to College Avenue Station. Tufts' proposed design changes are on the critical path for the design of College Ave Station (IGMP #5), as well as the work which is contained in IGMP #4 including walls, drainage and commuter rail work. The IGMP #4 contract is scheduled for award in late February 2015.

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 variety of local groups, including two different project advisory committees 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.

A public meeting was held in Cambridge on October 28, 2014 regarding the advanced design of the new Lechmere Station. The MBTA and the GLX team plan to hold a follow-up meeting with the East Cambridge community in winter/spring 2015 to discuss the shutdown of the existing Lechmere Station, viaduct work and the proposed interim busing plans during that shutdown.

Project Funding

As highlighted above, 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. As noted in the current MassDOT Capital Investment Plan (released January 2014), MassDOT and the MBTA will use Commonwealth funds in addition to the use of any federal funding to support the design and construction of the Green Line Extension project.

SIP Requirement Status

MassDOT has met the first four interim milestones associated with the Green Line Extension project - filing an Expanded Environmental Notification Form, procuring multiple design consultants, and publishing both Draft and Final Environmental Impact Reports. The GLX project, a top transportation priority of the Commonwealth and the largest expansion of the MBTA rapid transit system in decades, has transitioned from planning and environmental review phases to design, engineering, and construction.

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. 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

As stated earlier in this report, the MBTA is committed to delivering the project within the range of completion (June 2020) as shown above. FTA's projected completion is June 2021 which includes one year of schedule contingency beyond the MBTA's Target date.

MassDOT and the MBTA continue to seek measures to accelerate the project timeline wherever possible. The phasing approach discussed above provides for an accelerated delivery of some portions of the project. In addition, the use of CM/GC delivery method described above is expected to aid in meeting the established project schedule and overcoming some of the delays that were encountered related to the FONSI and the approval to enter into the FTA New Starts program. A major critical path item for the entire program is the completion of the next steps in the New Starts process, primarily completion of the package to initiate the negotiations for a FFGA, and receipt of an FFGA by late 2014. The receipt of the FFGA is a key milestone, as it will permit the start of construction for the bulk of the Phase 2/2A and Phase 4 work.

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. Consequently this schedule triggers 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 calculated 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.

In June 2012, MassDOT released a list of potential mitigation ideas received from the public that could be used as offset measures. In the summer and fall of 2012, MassDOT solicited public comments on these potential measures. The MBTA 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 resulted in a recommendation to implement the following three interim mitigation measures which collectively would meet the emissions reduction target for the project:

- Additional off-peak service along existing routes serving the GLX corridor, including the Green Line, and bus routes 80, 88, 91, 94 and 96;
- Purchase of 142 new hybrid electric vehicles for The RIDE;
- Additional park and ride spaces at the Salem and Beverly intermodal facilities.

The Petition to Delay, submitted to DEP on July 22, 2014 which expands further on the analysis and determination of the interim offset measures, is available on MassDOTs website.