Massachusetts Department of Transportation
Massachusetts Bay Transportation Authority

State Implementation Plan – Transit Commitments
2013 Status Report

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For questions on this document, please contact:
Massachusetts Department of Transportation
Office of Transportation Planning
10 Park Plaza, Boston, Massachusetts 02116
planning@dot.state.ma.us

INTRODUCTION

This report is submitted by the Massachusetts Department of Transportation (MassDOT), in conjunction with the Massachusetts Bay Transportation Authority (MBTA), to the Massachusetts Department of Environmental Protection (DEP) in order to fulfill the requirements of 310 CMR 7.36(7), *Transit System Improvements*. Below is a project description and status information for each of the outstanding public transit projects required under the amended State Implementation Plan (SIP).

As in previous Status Reports, MassDOT is no longer reporting on Blue Line Platform Lengthening and Station Modernization and the Greenbush Commuter Rail Restoration. Both of those projects have been completed and MassDOT believes that the relevant commitments have been met.

In addition, as of this Status Report, MassDOT is no longer reporting on Construction of 1,000 Parking Spaces. That project was completed in time for the submittal of the 2012 annual report, and the completion was detailed in that report. MassDOT will therefore no longer provide updates on Construction of 1,000 Parking Spaces.

As always, MassDOT hopes to make the annual Status Report process one of iterative improvement, and looks to DEP and to the public for comments and other suggestions to refine its efforts.

This report (along with past reports and supporting documents) will be posted to MassDOT's SIP Regulations website at: www.state.ma.us/massdot/SIP.

I. FAIRMOUNT LINE IMPROVEMENT PROJECT

SIP Requirement

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). EOT[1] shall meet the following interim deadlines for the Fairmount Line Project:

A. One year from the effective date of this regulation (December 1, 2006), develop a Request for Proposals for a design consultant, complete the competitive procurement process, and issue a notice to proceed for a design consultant.

- ✓ Done

B. Within two years following the issuance of a notice to proceed, complete final design, apply for all necessary permits and grants, file any required legislation, and initiate all public and private land acquisition.

- ✓ Done (for all elements of the project except for Blue Hill Avenue Station)

Project Description

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

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

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).

[1] EOT is the predecessor to the legislatively-created Massachusetts Department of Transportation (MassDOT). For the purposes of referencing 310 CMR 7.36(7) *Transit System Improvements* of the SIP, this report will continue to use the EOT designation. However, the MassDOT designation will be used for all other language or text contained in this report.

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

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 design of the Talbot Avenue, Woodrow Avenue, and Neponset River bridges is completed and construction is underway (see "New Stations" below). The Talbot Avenue and Woodrow Avenue bridges will be constructed under the same construction contract as Talbot Avenue Station, while three Neponset River bridges are being advertised separately (see below).

The project includes replacing three bridges over the Neponset River. Bids for replacement of the northernmost Neponset River Bridge (just north of Fairmount Station) were opened on November 3, 2010. The low bidder was Barletta Construction. Contract authorization was given at the January 2011 MBTA Board of Directors meeting, and the MBTA issued a notice to proceed on February 11, 2011. The project duration is approximately 30 months and is currently 99% complete, with project completion to occur in August 2013.

The two southern Neponset River Bridges (one just south of Fairmount Station and one just north of Readville Yard) were packaged with the environmental remediation of the Yard 5 area of Readville Yard. Bids for this group of projects were opened on October 13, 2010. The low bidder was S&R Construction Enterprises, with contract award authorization given at the January 2011 MBTA Board of Directors meeting. The notice to proceed for this contract was issued March 1, 2011. The project duration is approximately 29 months and is currently 99% complete, with project completion to occur in 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 is scheduled to open for service on July 1, 2013, as construction is 98% complete with only minor construction tasks remaining. A notice to proceed was issued to S&R Construction Enterprises, Inc. on January 28, 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 will be complete in July 2013.

The construction of **Talbot Avenue Station** and the **Talbot and Woodrow Avenue Bridges Rehabilitation** projects were advertised and opened for bids in May 2010. The MBTA Board of Directors authorized a construction contract to Barletta Construction on September 10, 2010 and the notice to proceed was issued on November 22, 2010. The construction 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 Woodrow Avenue Bridge occurred during the first weekend of November 2011; it was completed one day ahead of the planned schedule. The Talbot Avenue Bridge was replaced during the third weekend of December 2011 (also completed one day ahead of the planned schedule).

The Talbot Avenue Station became operational in November 2012. Abutter privacy concerns voiced by local elected officials and other stakeholders resulted in a commitment from the MBTA to install a six-foot 'privacy section' on top of the existing eight-foot black vinyl-coated chain-link fence. That work is now complete.

Newmarket Station is scheduled to open for service on July 1, 2013 as construction is 90% complete with only minor construction tasks remaining. The construction contract was awarded to S&R Construction Enterprises at the MBTA Board of Directors meeting on October 6, 2010. The MBTA issued a notice to proceed on December 13, 2010. Substantial completion of Newmarket Station occurred in June 2013. Final construction will be finished in July 2013. The delay in the completion of the station can be attributed to the discovery of an existing power duct bank for the South Bay Shopping Center not previously identified on any existing utility plans; the necessity to redesign elements of the inbound and outbound retaining walls; and a delay in the manufacturing of the precast concrete platform panels.

The proposed **Blue Hill Avenue Station** has been the subject of significant community controversy over the past four 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 and would also 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 some 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 to address any outstanding abutter concerns. Nevertheless, the MBTA continues to encounter opposition from some abutters, who question the need for and appropriateness of any commuter rail station at the Blue Hill Avenue location.

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 a peer review of the proposed station, to be performed by a firm selected by the abutters. Once the peer review is sufficiently advanced, the MBTA will be able to develop a new schedule for completion of Blue Hill Avenue Station. Given the unexpected delays, it is unlikely that the Blue Hill Avenue Station will be completed before 2015, at the earliest.

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

SIP Requirement Status

Community concerns (described above) regarding the construction of a station at Blue Hill Avenue, as well as construction challenges throughout the Fairmount Line project, have resulted in a delay of the overall Fairmount Line Improvement Project beyond the December 31, 2011 SIP deadline. However, three of the four stations – Four Corners, Talbot Avenue, and Newmarket – will be open for service as of July 1, 2013, although they were completed after the required 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, given the strong opposition mounted by a small group of abutters.

In its efforts to encourage new riders on the improved Fairmount Line, on July 1, 2013, the MBTA will introduce a new fare structure for the Fairmount Line which will make fares on the line more competitive with MBTA rapid transit and bus fares. Travel between any two stations on the Fairmount Line, with the one exception of trips between Readville and South Station, will now have the same $2 fare as an MBTA subway trip.

Given the delays in final completion of the project, 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 on July 27, 2011, and are posted to the MassDOT 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 the 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. These services will remain in place until the Fairmount Line Improvement Project is fully complete.

II. RED LINE/BLUE LINE CONNECTOR - DESIGN

SIP Requirement

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 Station.

Project Description

The proposed Red Line/Blue Line Connector consists of an extension of the MBTA Blue Line under Cambridge Street to the Red Line station at Charles/MGH. As envisioned, the project would consist of two major components: (1) a new tunnel extending the Blue Line under Cambridge Street from Joy Street to Charles Circle and (2) a new underground Blue Line station connected to the existing Charles/MGH station. The project would also require a decision on whether and how to make use of existing Bowdoin Station.

The SIP requires 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 on the Expanded Environmental Notification Form, 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 tasks 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 was created and is maintained at www.mass.gov/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 Bowdoin Station remaining open, 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 Draft Environmental Impact Report.

Real Estate Requirements

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

Project Funding

The 'immediate needs' Transportation Bond Bill of 2007 provided state bond funding to support the costs of the SIP projects, including the design of the Red Line/Blue Line Connector project. The estimated funding needed to complete design increased from the $29 million estimated prior to the initiation of the environmental review/conceptual design process to $52 million, according to the new cost estimates completed during the development of the DEIR.

SIP Requirement Status

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 would far outstrip what the project costs were believed to be at the time that the SIP regulation was promulgated: $290 million at the time of the SIP regulation versus the best estimate of $748 million (escalated to year of expenditure) developed during the environmental review process. 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, in 2011 MassDOT officially sought approval from DEP to support a SIP amendment process, a process which has included 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. In response to requests made by elected officials, MassDOT and DEP have provided additional information about the history and status of the project, as well as the rationale behind the request for amendment. In addition, Governor Patrick and MassDOT released The Way Forward *in 2013, which details the Administration's vision of transportation in the future. In that document, the Administration set priorities for projects that will solve mobility issues and promote economic growth. The Red Line/Blue Line Connector was not one of the projects that was prioritized. MassDOT has been in communication with DEP on the status of the amendment request and the process is awaiting a conclusion, currently estimated to be by fall 2013.*

III. GREEN LINE EXTENSION TO SOMERVILLE AND MEDFORD

SIP Requirement

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

- *On or before 18 months following the effective date of the regulation (December 1, 2006), MassDOT must develop a request for proposals for a design consultant, complete the competitive procurement process, and issue a notice to proceed.*
  - ✓ Done

- *Within 15 months of the completion of the above requirements, MassDOT must complete conceptual design and file an Environmental Notification Form.*
  - ✓ Done

- *On or before two years after MEPA's issuance of a scope for a Draft Environmental Impact Report or a Single Environmental Impact Report, MassDOT must complete preliminary design and file a DEIR or SEIR.*
  - ✓ Done

- *On or before one year after MEPA's issuance of a scope for a Final Environmental Impact Report, MassDOT must file an FEIR.*
  - ✓ Done

- *On or before 18 months after MEPA's issuance of a certificate on an FEIR or an SEIR, MassDOT must complete final design, apply for all necessary permits funds and grants, file any required legislation, and initiate all public and private land acquisition.*
  - Underway

- *Upon completion of all of the above milestones, DEP and MassDOT shall establish a schedule for project construction and deadlines for project completion.*
  - Ongoing

Extensive information about the Green Line Extension project can be found at www.mass.gov/greenlineextension.

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, needed to support the Green Line Extension, 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 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. An accessible route to the station will also be provided from Medford Street and from School Street which in the future will also be a portion of the Somerville Community Path. A traction power substation needed to support the Extension will also be installed adjacent to and below the accessible route on the south side of the corridor.

- **Washington Street, Somerville** – Located within the footprint of the Washington Street Bridge, proximate to Somerville's Brickbottom, Inner Belt, and Cobble Hill neighborhoods. The station platform will be located south of the Washington Street undergrade crossing of the MBTA Lowell Line. Access to the station will be provided via entrances located under or adjacent to the south abutment of the bridge, in conjunction with improved sidewalk and street crossings in the area. The design of the station includes an access point connecting to the future Somerville Community Path.

- **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 Maintenance and Storage Facility

The Green Line Extension also requires the construction of a new light rail vehicle maintenance and storage facility (VMSF) 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, 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. Plans are being finalized to proceed with these acquisitions and relocations.

Somerville Community Path Extension

In addition, the Green Line Extension project 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.

Planning Conformity

The Green Line Extension project has been included in all relevant transportation planning documents, including the Regional Transportation Plans of the Boston Region Metropolitan Planning Organization.

Project Status

Project Team: The MBTA has created a large and experienced project team to complete the Green Line Extension project. These team members are referenced throughout the remainder of this report:

- Program Manager / Construction Manager (PM/CM): HDR/Gilbane; 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: Barletta Heavy Division
- Construction Manager / General Contractor (CM/GC): WSK[2] (Skanska/JF White/Kiewit); will provide preconstruction support services to the MBTA and will 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): The MBTA is currently procuring these services. Responses to the RFP's have been submitted and interviews were held in June 2013, with a selection to follow shortly thereafter.

Environmental Approvals: State-level environmental review (Massachusetts Environmental Policy Act [MEPA]) was completed in July 2010. Federal-level environmental review (National

[2] WSK is the apparent winning bidder of this contract and is pending approval by the Board of Directors at its July meeting.

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 (to accompany a 45-day public comment period). 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, approximately seven months later than anticipated by the Green Line Extension project schedule.

Funding Approvals: MassDOT and the MBTA continue to work with the FTA to seek funding for the Green Line Extension project under the FTA New Starts capital funding program. On June 11, 2012, the MBTA received approval from the FTA for the Green Line Extension project to enter the New Starts program. This approval represented the culmination of the first part of the New Starts application process. Approval into the New Starts pipeline means that the MBTA may be able, in the future, to seek reimbursement from FTA for expenditures associated with the Green Line Extension project that were incurred after June 11. 2012. However, final authority to seek such reimbursements depends upon the Green Line Extension project being able to continue to compete successfully against other public transit projects within the New Starts program.

In January 2013, the project's schedule for seeking federal funding was revised to reflect MassDOT and MBTA's understanding of the significant changes to the New Starts program that Congress enacted as part of the Moving Ahead for Progress in the 21st Century (MAP-21), the most recent federal transportation funding authorization. Per MAP-21, the GLX project is now considered to be in the Engineering phase of the New Starts process and next steps include: (1) the submission of a New Starts Project Update allowing FTA to review the rating for the project; and (2) the request for and the commencement of negotiations for a Full Funding Grant Agreement (FFGA). The Project Team has assumed that negotiations will take one year, with an FFGA expected to be signed in February 2015, and has scheduled the majority of construction activities to begin after that date.

In order for the above milestones to occur, a series of items must happen: advancement of design, an FTA workshop dedicated to an analysis of project risks, updating of the Project Management Plan, and the acceptance by FTA of a viable Finance Plan for the Green Line Extension project. Advanced Preliminary Engineering is currently proceeding, the Project Management Plan was submitted to the FTA in the fall of 2012 and continues to be updated as comments are received, and the next risk workshop is scheduled to be held in November of 2013. The outcome of that workshop is vital, as FTA relies heavily on a successful and well-managed risk assessment process before it will issue an FFGA.

The MBTA had initially planned to submit its New Starts Update in September 2013 for FTA review. However, submission of the Update is contingent upon FTA's release of revised guidance and rating thresholds for the MAP-21 New Starts rating/funding process. Typically, this guidance is released in early June, but FTA recently indicated it may not be released until late summer 2013. This delay is affecting all New Starts projects nationwide. The MBTA will continue to monitor this situation and potentially adjust the schedule for filing its Update accordingly. This delay in

the release of the New Starts guidance should not cause the MBTA to risk missing the milestone for requesting the FFGA in early 2014.

Project Delivery: The MBTA and its PM/CM team completed the Advanced Conceptual Design (ACD) for the Green Line Extension project in August of 2012. The team is advancing the project in accordance with a project delivery approach that divides the project into multiple phases. The PM/CM team continues to act as Program Managers, providing services as an extension of MBTA staff.

In September 2012, the MBTA completed the process to procure an APE/FD consultant to extend the design through both Advanced Preliminary Engineering and Final Design. A series of knowledge transfer sessions through last fall helped to bring the APE/FD team up to speed on the many elements of the project. The APE/FD contract was fully executed in February 2013, which permitted the execution of geotechnical subcontracts – important as the gathering of additional geotechnical information related to proposed retaining walls is a top priority. The APE submittal is due to the MBTA on September 1, 2013; this submittal will be used to update the program cost and schedule estimate and conduct the risk workshop in November 2013.

As discussed further in this report, the majority of the Green Line Extension project is anticipated to be constructed using the Construction Manager/General Contractor (CM/GC) delivery method, an integrated team approach to design and construction. Approval to use CM/GC – still a relatively new approach in the Commonwealth – for the Green Line Extension project 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 in late November 2012.

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.

The OR team led a value engineering (VE) workshop in early November 2012. The final VE recommendations were then presented to the MBTA Value Engineering Review Committee (VERC) on December 13, 2012. The recommendations and accompanying report have been accepted by each of the members of the VERC. Recommendations include: reducing the size of the stations in various ways, eliminating certain escalators, reorienting mechanical spaces and reconsidering the deployment of emergency generators (reducing overall space requirements by 10%), combining certain uses and reducing the size of VMSF, revising the Washington Street Station egress from tunnel to at-grade crossing of the tracks (a permit for the at-grade crossing is required), and considering the use of lightweight fill and eliminating beams in the transition from viaduct to at grade section. These recommendations are being integrated into the overall program

through the GLX configuration management process.[3] Changes to the baseline, including associated cost and schedule adjustments, are monitored and reviewed through a formal approval process.

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 in June 2011, and have been reviewed by MBTA staff. In March 2013, MBTA requested that the two proposing teams update and re-submit their proposals as a Best and Final Offer to the MBTA. Award of the vehicles is anticipated in the fall of 2013 and the last of the 24 new vehicles are scheduled to be delivered by the fall of 2017. 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 background and support tasks associated with the balance of the real estate work for the Green Line Extension project. A confirmatory survey of the right-of-way limits is now complete and that data was used in the ACD efforts and as confirmation for typical sections and track layouts. The listing of the potential property impacts is being confirmed and updated as part of the APE design. Small design changes may have minor impacts on the initially identified property impacts. The MBTA will continue to review the previously identified property impacts and update the list as necessary, including further definition of temporary easements that may be needed to support construction. Work is underway to survey property boundaries of parcels for both the full property takings and those needed for smaller "sliver" property takings. The Project Team continues to issue Rights to Entry notices[4] to support both the survey and boring activities and to coordinate with the property owners at those locations.

MassDOT and the MBTA began pre-acquisition activities in July 2012. These pre-acquisition activities continue, with the title surveys now complete for the anticipated full-property acquisitions, including those needed for the VMSF and for Ball Square Station. One appraisal is left to complete at the VMSF site. Given the value of the takings at this site, an independent review has been conducted, and the appraisals will soon be sent to the FTA for additional review.

A relocation consultant, retained by the MBTA Real Estate Department, is assisting with the real estate elements of the Green Line Extension project. The GLX Relocation Plan, a document requiring approval by the Commonwealth of Massachusetts Bureau of Relocation before any

[3] Configuration Management is a process for defining, evaluating, identifying, controlling and recording the status of a project and changes to the baseline scope and budget. It uses a uniform, well-documented path from the establishment of the project's baseline (GLX uses the Advanced Conceptual plans and the fall 2012 estimate) to monitor and record design, schedule and cost changes in order to maintain project integrity throughout.

[4] A Rights to Enter notice is sent via certified mail as notification to property owners that the MBTA needs to enter property to obtain information or to expedite construction. This notice requirement is a requirement under Chapter 161.a.of the Massachusetts General Laws, and should be presented to the property owner some 30 days prior to the date that MBTA needs to enter the property. In 2013, dozens of certified letters have been sent informing landowners of proposed survey or geotechnical activity on their property as part of the GLX project.

business relocations can commence, has been prepared, reviewed, and approved. In the time since this plan was reviewed, the relocation plan for one of the properties has been revised; thus, a modified plan will be re-submitted to the Bureau of Relocation for review. The FTA has also been reviewing the Relocation Plan. Schedules to implement the real estate acquisition process in a prioritized manner are being developed in conjunction with the MBTA's Real Estate department; this information is being incorporated into the overall program schedule, to ensure there will be no schedule impacts.

The MBTA has 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. These parcels are being acquired by the City of Somerville and are currently expected to be conveyed to the MBTA in summer 2013.

Completion of an agreement in March 2011 with Pan Am Railways allowed the Commonwealth to acquire land and tracks vital to the construction of the project, and the date for the formal closing on this agreement is now in discussion with Pan Am. Access to land controlled by Pan Am is one of the critical paths towards completing the geotechnical boring program. Issues relating to Pan Am, including access to the property for geotechnical investigations and use of Pan Am flagmen, are being worked on but have not yet been resolved. A license agreement is under preparation between Pan Am and the MBTA which will allow the geotechnical borings to be performed in this area prior to the MBTA-HYM/Pan Am property closing date. A letter was submitted to Pan Am on June 5, 2013 requesting the scheduling of a closing date which, by the terms of the agreement, must be scheduled within 120 days after the official notice (approximately Oct 8th).

Relatedly, coordination meetings continue to be held with HYM/Pan Am and the City of Cambridge in regard to the Lechmere Station and the adjacent area, roadway design and project phasing plans. Coordination has also been ongoing with the residential Archstone building (which has been sold to Avalon Bay) and the developer for the residential project at 22 Water Street in this area regarding the sequencing of construction and the anticipated utility and streetscape improvements.

The phasing of the roadway improvements at Lechmere Station (O'Brien Highway, North First Street and Water Street) which are the responsibility of the NorthPoint development project (managed by HYM), continue to be an item of discussion, along with the design of O'Brien Highway improvements. Discussion of these roadwork issues involves the NorthPoint developers, the City of Cambridge, and the members of the East Cambridge neighborhood.

The team also has been working with the City of Somerville in regard to an agreement to use the Homans building site (an underutilized building adjacent to the proposed station and bridge) to support construction at the Medford Street Bridge and for the construction of Gilman Square Station. Design coordination and resolution of conflicts between the project and the City's "Somervision" planning process/conceptual design is ongoing. Based on this coordination effort,

revised property plans are being prepared for parcels at Gilman Square Station and Ball Square Station in order to support the real estate acquisition process.

An appraisal is underway for the NStar property on the Somerville High School side of the Gilman Square Station area required to be purchased by the project. 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 VMSF and Gilman Square Station, as well as the utility issues related to the overall improvements at the Lechmere Station area.

Design Progress: Many project milestones have already been reached on the Green Line Extension project, including completion of the ACD for seven stations, bridges, viaducts, track, walls, and the VMSF. Critical reports have been prepared and/or updated, including the design criteria report; design definition report; accessibility analysis report for each of the station sites; roadway plans and the functional design report for the roads and intersections. In addition, the programming has been completed for the VSMF and development of the traction power, communications and security systems concepts and designs, initial cost and schedule reviews, and the development of revised program delivery plans, including project phasing plans.

The PM/CM design studies were completed in the late winter of 2012 and provided to the APE/FD team for design direction on the following:

- Drainage at Washington Street Station and the Red Bridge-NorthPoint area: Drainage alternative solutions were presented and endorsed by the MBTA and direction was given to the Design consultant.
- Relocated and repurposed the second entrance at Lechmere Station (it will now be both an exit and an entrance): The concept design for a relocated and repurposed second entrance has also been accepted and direction given to the design consultant to incorporate it into the APE design.
- Second headhouse at Union Station: Concepts have been developed illustrating how a second headhouse could be added in the future at the Union Square station, should the City of Somerville see demand due to increased development. These options have been reviewed with the City of Somerville and the study completed, with the headhouse remaining a viable option for a future developer.
- Ball Square Station and Gilman Square Station: The design of Ball Square Station and Gilman Square Station have advanced, taking into consideration the resized station to avoid potential utility conflicts at Ball Square, the before-mentioned "Somervision" process and the ideas accepted from the VE study. Overall, the size of the stations has been reduced by about 10 percent, with a corresponding decrease in the overall cost of the station.

The APE/FD team has continued to advance the APE design on all portions of the program and in early May made an interim submittal of some 4,000 drawings for review and coordination by MBTA and the PM/CM, for use in an internal risk analysis, and to commence the update to the program cost and schedule estimate, to be completed in the winter of 2013-2014.

As the station and bridge design has continued, new design challenges have developed. Some of these new issues relate to emergency egress and accessibility requirements, while others are linked to the receipt of new, more detailed survey information and recently identified utility conflicts. In order to reach resolution on egress issues, the MBTA submitted a variance request to the Massachusetts Department of Public Safety in order to gain acceptance of emergency egress from the end of four station platforms (College, Ball, Lowell, and Union). In early March, these variance requests were granted, allowing for design to advance on the emergency egress elements at the end of these station platforms. Work is also proceeding on revisions to the Ball Square station layout to resolve NStar and MWRA utility conflicts.

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 – 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.

The MBTA completed two rounds of public design workshops in order to engage the public in developing the 'look and feel' of the stations and the areas around the station in late spring/summer of 2011 and then again in the winter/spring of 2011-2012. The MBTA has used the information and input collected at the workshops and from the Green Line Extension Design Working Group to complete the summer 2012 ACD set.

As the details of the design of the stations, including the relationship of the stations to the pedestrian, bicycle, and bus networks around them, are now more fully developed, additional workshops were held this spring. A Design Working Group/open house meeting was held in early May at the new Project Office to update the Design Working Group and the public on the status of the project's design since its last meeting. An additional round of station workshops including Ball Square Station, Gilman Square and Lowell Street Stations, Washington and Union Stations, Lechmere Station, and College Avenue Station were held in June 2013, where the progress of station design to date was presented.

The Project Team has continued to meet and coordinate design issues with representatives from the three municipalities and stakeholder groups including, most recently: (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 the revised Ball Square plans and (4) the City of Somerville, the City of Medford, and other local abutters on the Phase 1 (see below) construction plans. As a follow-up to the January 2013 coordination meeting with the Massachusetts Historic Commission (MHC) on the details of the viaduct demolition limits and reconstruction, a draft Historical American Engineering Report (HAER) was submitted in March

2013. Edits to the HAER were completed and the final report was submitted to MHC in late May.

Project staff has also met with the abutters to the Phase 1 construction work, around Harvard Street, as well as representatives of Tufts University, the City of Medford, and the City of Somerville. An overall Phase 1 public meeting was held on March 14, 2013 to introduce the construction contractor (see below) and to discuss scope, schedule, contacts, the project hotline, coordination with the Fire Departments, and proposed road detours. The Project Team also continues to respond to inquiries to the project website with regard to scope, schedule, and overall coordination.

In addition, a complaint has been filed in federal court against MassDOT and the FTA which challenges the determination of a FONSI under the National Environmental Policy Act. This suit has the potential to impact the project schedule and cost. Currently, MassDOT has filed a motion to dismiss the lawsuit for failure to state a claim as to MassDOT. The motion also argues that the lawsuit should be dismissed in its entirety for lack of subject matter jurisdiction because the plaintiffs lack standing. The motion is currently awaiting action.

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.

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. This construction package was advertised for bids on July 16, 2012, immediately following receipt of the FONSI from FTA. Bids were taken on September 6, 2012 and a pre-award meeting was held with the apparent low bidder. Phase 1 of the GLX Project will be funded completely by the Commonwealth of Massachusetts.

The MBTA General Manager awarded the Phase 1 contract on December 13, 2012. The MBTA issued a Notice to Proceed to Barletta Heavy Division on January 31, 2013. As stated, the contractor was introduced to the local residents and businesses at community meetings in March. Shop drawings and submittal activities continue.

At the Harvard Street Bridge, enabling work is complete, including creating access to the track elevation and installation of excavation support along the track alignment. Retaining wall work excavation is ongoing and AT&T and NGrid Gas have completed moving their lines away from the work zones. At the Medford Street Bridge, preliminary utility investigations are complete and access points have been established. Preparation work is currently underway, with major construction to begin in July 2013. The MBTA building located at 21 Water Street will be demolished beginning in August 2013. All MBTA activities have been moved out of the building and the contractor now has control of the site in preparation for demolition. A Phase 1 partnering

workshop was held in April with representatives from the MBTA, the PM/CM, the OR, the Contractor, and representatives from each of the Cities of Cambridge, Somerville and Medford.

Remaining construction phases will use the CM/GC approach. The MBTA issued a request for Letters of Interest on December 7, 2012 to firms for CM/GC services. Responses from interested firms were received in early January 2013 and CM/GC Qualification Statements received in mid-February 2013. The most qualified teams were notified and the Request for Proposals was issued on March 11, 2013. Two-part proposals (technical and pricing in separate envelopes) were submitted by the potential CM/GC teams in late April. The selection committee reviewed the technical proposals and conducted interviews in mid-May. The technical scores were developed by the MBTA Selection Committee and the pricing was opened on May 21, 2013. Based on separate scoring of the technical proposal and pricing, an apparent CM/GC winning team has been identified. The Project team presented an update on the GLX program and the CM/GC project delivery method and procurement process to the MassDOT Board of Directors on May 22, 2013. It is planned that the CM/GC contract will be presented for award at the July 2013 MassDOT Board meeting.

In addition, procurement of an Independent Cost Estimator (ICE) is underway, with a Request for Qualification Statements issued on February 25, 2013 and Qualification Statements received on March 29, 2013. The ICE Qualification Statements were reviewed in April and the Request for Proposals was sent to the most qualified firms on May 8, 2013. Proposals were received on June 4th and the ICE presentations/interviews were conducted on June 18, 2013. The ICE is scheduled for approval by the Secretary in the July timeframe.

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 on this phase by late 2016 with testing and start up in early 2017.

Phase 3 will construct the VMSF. 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. It is anticipated that the relocation activities of the current occupants of the VMSF site will be completed by the end of 2015, such that site cleanup and demolition will commence shortly thereafter. The property acquisition and relocation activities (described earlier) 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 above) to College Avenue Station. It is currently targeted to be completed by the end of July 2019. This schedule assumes that the FTA approves the Project Team's plans to advance under pre-award authority certain utility relocation work at the bridges in 2014 ahead of the FFGA, with the bulk of construction starting in 2015 after receipt of the FFGA. Completion of Phase 4 also represents completion of the Green Line Extension project. As stated, the GLX Project team targets

completion of this phase (at a 50% probability of occurring) on or before July 2019, based upon a risk evaluation process conducted in 2011. An updated risk evaluation process, based on the APE design submittal, will be conducted in November 2013.

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.

The Green Line Extension project is, in many ways, an excellent candidate project for the New Starts program. The FTA issued a preliminary guidance and thresholds policy in December, 2012 which laid out how projects would be measured and rated. That guidance was subjected to public comment and FTA is now developing a final guidance document that is responsive to those comments.

The FTA requires that a project receive a rating of "Medium" or better in both the Project Justification and the Financial Commitment evaluation criteria. Based on the preliminary guidance document, the GLX project is expected to rate at least a "Medium" under the Project Justification criterion (*i.e.,* anticipated ridership, mobility, cost effectiveness, the extant policies and programs in the corridor and region that encourage public transit usage; and the strong and sustained support for the project from elected officials and the public, *etc.*). The MBTA's current financial condition does not warrant a rating of "Medium;" the improvements to the Commonwealth's transportation funding plans currently before the Massachusetts General Court, however, will result in a different and hopefully better rating that will warrant an FFGA.

As part of Governor Patrick's *The Way Forward* Plan completed earlier this year, the budget for the Green Line Extension project, inclusive of all capital costs, new vehicles, design costs, and real estate acquisitions, was established to be $1.33 billion.[5] As the design is advancing, the project team is being vigilant to ensure that the project meets this budget. All appropriate steps are being taken to value-engineer the project to find ways to reduce costs without reducing the project scope or its benefits. In addition, anecdotal information from other projects across the country appears to indicate that the use of CM/GC as the project delivery method can reduce costs further. The MBTA will work closely with the CM/GC team to find creative ways to maintain costs so as to deliver the project in line with the $1.33 billion budget.

In addition to the use of any federal funding, MassDOT and the MBTA will use Commonwealth funds to support the design and construction of the Green Line Extension project. At present, MassDOT has $553 million available in active Transportation Bond Bill authorizations for the SIP projects. Upon passage of a reconciled transportation funding bill by the Legislature, MassDOT will be able to update stakeholders on the available funds to cover the remaining costs of the Green Line Extension project, as well as other SIP projects.

[5] This cost estimate is presented in year of expenditure dollars and is not inclusive of project finance costs.

SIP Requirement Status

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 eventual 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. 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*

This schedule for overall project completion remains in effect.

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, MassDOT and the MBTA have succeeded in receiving legislative, OIG, and MBTA Board of Directors authorization to use the CM/GC delivery method described above, which 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 is the completion of the next steps in the New Starts process, including (1) the completion of the APE design and the Finance Plan to the extent necessary for submission of the New Starts Update to the FTA, (2) favorable rating by the FTA and completion of the package for initiation of the negotiations for a FFGA, and (3) receipt of a FFGA by February 2015. 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. The products of that effort will be submitted to DEP and released for final public review in October 2013, for final approval by December 2013 in time for implementation by December 31, 2014.