

GREEN LINE EXTENSION PROGRAM
MONTHLY PROGRESS REPORT



May 2018

Report #05-18

June 8th, 2018

Financial Data is as of May 31st, 2018 (unless otherwise noted)
Non-Financial Report Data is as of May 31st, 2018 (unless otherwise noted)

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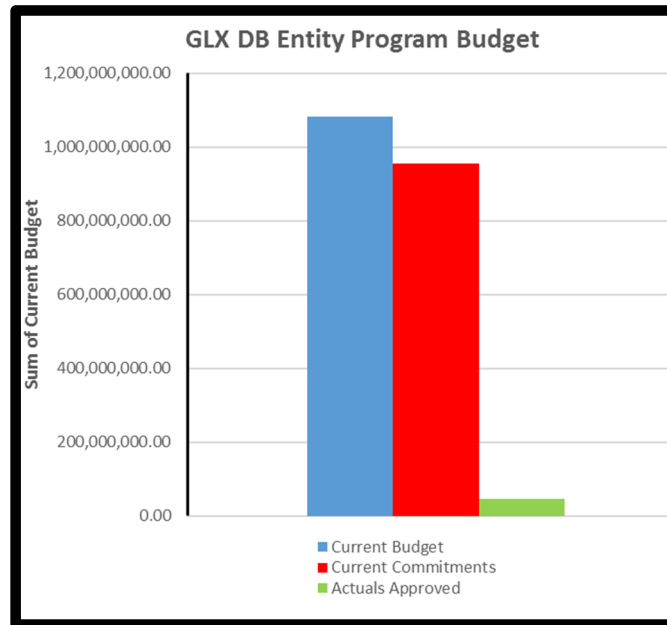
1 Executive Summary – Past Month’s Progress

1.1 Monthly Progress Highlights

1.1.1 Design-Build Entity (DB) Design Summary

Major activities in May for the DB Entity included continued design development of both Early Release for Construction (ERC) packages and other design packages. The MBTA is currently reviewing ERC Design Packages for the VMF Building Site Demo; Drainage and Noise Wall Design; Broadway Bridge Preliminary Design; and Washington Street Rail Bridge Design.

Figure 1: GLX DB Entity: Budget vs. Commitments vs. Actuals



The graph above reflects the June 4, 2018 DB Entity payment for \$26.7M (Invoice 2).

1.1.2 Design-Build Entity (DB) Construction Summary

Major construction activities in May for the DB Entity included completion of the clearing and grubbing along the entire east side and selected sections on the west side of the Medford Branch; continuation of the utility test pits, pre-soil characterization, and geotechnical borings; and ongoing coordination of 3rd party meetings with cities and public works. Finally, the DB Entity has installed a separation barrier on the west side between the active commuter lines and the construction work zones from Washington Street Bridge to Lowell Street. This will help to reduce the number of flaggers needed to support the construction activities.

1.1.3 Active Construction – Keolis Early Works

The GLX Early Works Project remains on schedule. Grand Junction was taken out of service for track and signal work at Swift Interlocking on May 5, 2018 as scheduled. Work continued to support the multi-week shutdown of the Grand Junction scheduled for completion in late June 2018.

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1.1.4 Recruitment/Hiring Plan

Thirty-one (31) new MBTA employees have joined the PMT since August 2017. Three (3) new staff administrative assistants are scheduled to start in June 2018. The GLX/MBTA are currently recruiting for eight (8) additional staff openings including Resident Engineers, Construction Inspectors and a Compliance Manager.

1.1.5 Program Management/Construction Management (PM/CM)

Currently, there are seventeen (17) PM/CM staff on-site working. This includes staff for Stakeholder Engagement, Controls, Safety, Quality, Construction Management and Environmental. The PM/CM recently added a safety manager, receptionist and an environmental engineering summer intern.

1.1.6 FTA Coordination

The MBTA is preparing to submit a Grant application for the next \$150M that will be allocated from the FTA. An update of this will be provided next month.

1.1.7 Risk/Exposure

As of May 31, 2018, the DB Entity has submitted twenty-one (21) Potential Change Order Notices (PCOs) with the majority being notifications of differing site conditions identified during the utility test pits, geotechnical borings and soil pre-characterization activities. These PCOs are grouped into PCOs No. 4, 17, 18, 19, 20, and 21. To date, the DB Entity has identified forty-two (42) locations where they assert that the subsurface conditions differ from the information provided in the Contract by greater than 5-feet; fifteen (15) locations where they assert that the soil or groundwater have differing maximum concentrations of contaminants from those specified in the Contract; and three (3) locations where they report that utilities identified vary more than 3-feet from the existing conditions drawings. The MBTA has this potential differing site condition notice requirement in the Contract to help avoid costly impacts during construction.

The DB Entity has also indicated potential cost impacts based on the MBTA providing less than the requested amount of Railroad Worker Protection. To date, there have been 14 notices submitted under PCO No. 14.

Table 1: PCO and COR Table

As of May 31 st , 2018	
PCO Submitted to Date	21
PCO awaiting MBTA Response	1
PCO awaiting additional DB information	9
PCO denied	4
PCO withdrawn	7

A schedule risk/exposure is being mitigated on activities associated with the preparation of the VMF site. In response to Directive Letter No. 2 (Correspondence No.: MBTA-0025), DB has completed all of the additional environmental sampling. The results are the sampling combined with the historical review of the site has been submitted to the PMT. The assessment data is currently under review in conjunction with the DB Entity's means and methods for the property to determine the most efficient and cost effective method to move forward with remediation and construction.

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1.1.8 Federal Funding

CMAQ Funding Source:

As of May 31, 2018, the MBTA has received over \$42.3M in payments from the Congestion Mitigation and Air Quality Improvement (CMAQ) grant of \$72.6M.

FFGA Funding Source:

In December 2017, the U.S. Department of Transportation (DOT) issued to the GLX Program the first \$100M allotment of the total \$996M in FTA / FFGA funding. The second invoice from the DB Entity was paid utilizing \$26.7M of this \$100M allotment. The MBTA has finalized the scope for the grant application for the second installment of FTA funds for \$150M under the GLX Full Funding Grant Agreement (FFGA). This new grant application is in process with the FTA. It is anticipated that the FTA will approve this request in July 2018.

1.1.9 Right-of-Way and Real Estate

In the period between May 1, 2018 through May 31, 2018, there were six (6) transactions completed. The total transactions completed to date is 220 of 229. Remaining transactions include four (4) to be completed by the end of June 2018, and five (5) to be completed by October 2019. Since the last report, the MBTA executed a second License Agreement with the City of Somerville, providing access all remaining properties required for the DB Contract with the exception of the two parcels at Central Street. The remaining transactions are for long term rights and will be acquired over the next year. These do not impact the construction schedule.

1.1.10 Stakeholder Engagement

In May, GLX stakeholder engagement efforts shifted from the notification phase to actual construction. Significant field work by the DB Entity coincided with a spike in activity with the Keolis Early Works Contracts, now in their final stages. In coordination with the Fitchburg Commuter Rail Line closure, Keolis took advantage of track access to install long-planned track work at Swift Interlocking in Somerville. This involved heavy nighttime construction activity over the course of 3 weekends directly adjacent to large residential buildings at Brickbottom. At the same time, the DB Entity completed Phase I of an extensive tree clearing operation along the MBTA right-of-way. This involved clearing of mature trees, brush, and trash, affecting long stretches of residential back yards and fence lines. Throughout the month, residents, business owners, and elected officials were kept closely informed of the timing and magnitude of impending construction impacts on a day-to-day basis.

Table 2: Upcoming GLX Community Working Group (CWG) Upcoming Meeting Schedule

<i>Date</i>	<i>Time</i>	<i>Venue</i>
Tuesday, July 10, 2018	8:30 am – 10:00 am	200 Inner Belt Rd., Somerville MA
Tuesday, August 7, 2018	TBD	TBD
Tuesday, September 4, 2018	TBD	TBD
Tuesday, October 2, 2018	TBD	TBD
Tuesday, November 6, 2018	TBD	TBD
Tuesday, December 4, 2018	TBD	TBD

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1.2 Program Status

1.2.1 DB Entity Progress

The DB Entity mobilization effort continues to progress, with 217 total staff dedicated to the GLX project. This total includes 133 DB Entity staff and 84 craft workers. Phase 1 of tree cutting on the east side of the alignment is complete. Phase II tree clearing and grubbing is underway, with a target completion date of July 31, 2018. Pre-construction sound monitoring completed at the end of May 2018. Removal of abandoned track continues, with a total of 8,000 feet of old rail to be dismantled and recycled. Right-of-way trash clean-up has resulted in over 600 tons of trash removed to date. Pre-construction survey continues along the east side of the alignment. Preparation is underway for a full demolition of the Homan Building in July 2018. The DB Entity is facilitating a DBE Outreach Forum on June 21, 2018 at 200 Inner Belt Rd., Somerville.

Through June 6, 2018, the PMT has received one hundred twenty-five (125) submittals including a draft baseline schedule submittal, as well as preliminary design and program management plans. All of the submittals were received through the PMIS (e-Builder). Eighty-five (85) submittals are complete, twenty-seven (27) have been returned to the DB Entity for revision, and the remaining thirteen (13) submittals are under review by the PMT. An updated Submittal Review Log is included in Appendix N. In addition to the submittals, the DB Entity has submitted one hundred fifty-nine (159) Requests for Information (RFIs), of which one hundred fifty-four (154) have been responded to by the PMT. The remaining five (5) still under review were received via e-Builder in May/June 2018.

Figure 2: GLX DB Entity: Submittals

TOTAL SUBMITTALS (from NTP)	125
TOTAL COMPLETED	85
UNDER REVISION	27
UNDER REVIEW (ON-TIME)	13
UNDER REVIEW (LATE)	0

Figure 3: GLX DB Entity: RFIs

TOTAL R.F.I.s (from NTP)	159
TOTAL CLOSED (responded)	154
UNDER REVIEW (ON-TIME)	4
UNDER REVIEW (LATE)	1

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Table 3: Upcoming GLX DB / PMT Meetings – June 2018

Description	Schedule	Section Reference
Progress Meetings	Every Tuesday at 9:00 am	2.2.2
Schedule Meetings	Every Thursday at 9:00 am	2.2.2
Commuter Rail Track Construction Coordination Meeting	Every Thursday at 10:30 am	2.2.6
Contract Administration Meeting	Every Friday at 9:00 am	N/A

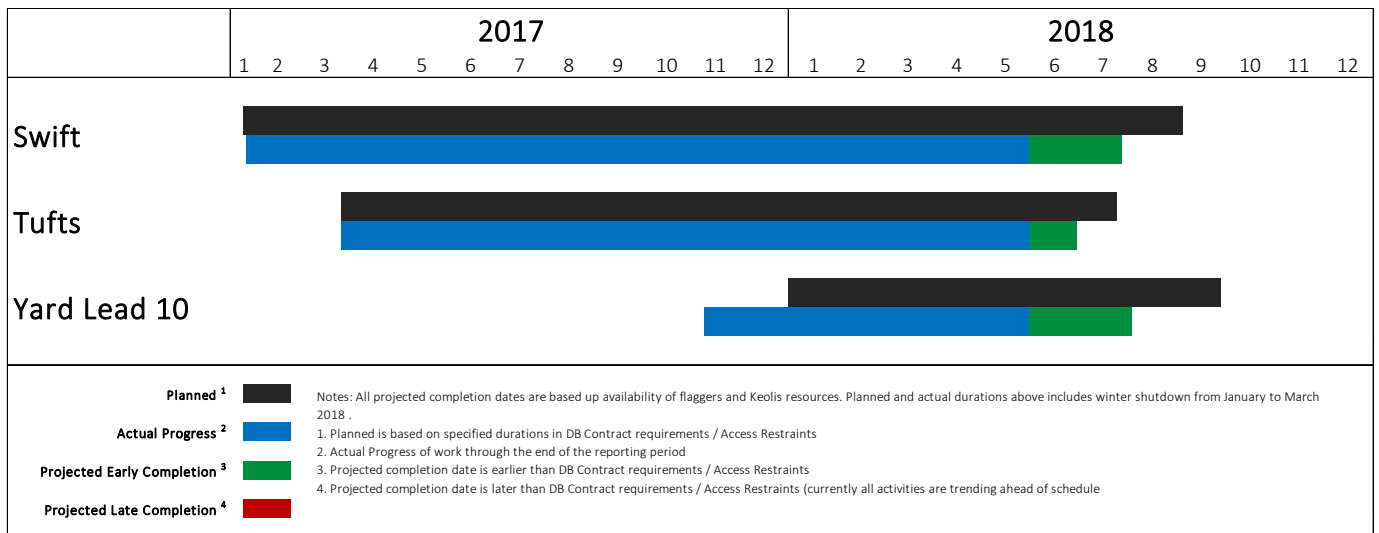
1.2.2 Change and Budget Management

Development of the May 2018 Budget Update was completed in May 2018. The new budget will be reviewed with MBTA officials on June 21, 2018.

2 Early Works Activities – Keolis / Railroad Operations

The PMT continues with the progression of three ‘early action’ tasks that have been identified as risk mitigation efforts for managing Keolis support of flagging, track work, and signal cutovers. The objective is to have some of the early track, drainage, retaining wall and signal work activities progress completed by Keolis forces in advance of the DB Entity. Based on the current draft work plans, it is expected that all work will be substantially complete during the summer of 2018. Tufts Interlocking was cutover and Somerville Junction Interlocking abandoned on April 28, 2018. Swift Interlocking is currently on schedule to complete prior to the September 4, 2018, contractual date. There remains the ongoing concern with regard to Keolis resources when considering other competing projects in the summer. Track rights with freight operators for the work around routes during the period of the Grand Junction track outage which could impact the completion of the work at Swift have been negotiated and implemented.

Figure 4: Early Works Project Progress Bar Chart Schedule



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Summary status:

- a. Track, drainage, grading, power and signal work activities continue in advance of the DB Entity. Tufts Interlocking was cut-over and Somerville Junction Interlocking decommissioned as scheduled. Rail de-stressing at Tufts Interlocking needs to be completed.
- b. Work completed includes the excavation/construction of the New Hampshire Main Line (NHML) Tracks 1 and 2 interlocking, duct bank installation, grading for track alignment, soil disposal, and the cutover of Tufts Interlocking; drainage is complete and grading of track is partially complete at the Yard Lead 10 Area; and track and signal work continues at the Swift Area. The Grand Junction shutdown began on May 5, 2018.
- c. The PMT and Keolis staff continue working closely to coordinate all aspects of the ongoing work.
- d. Weekly GLX project review meetings are continuing.

2.1 Exposures/Concerns

- a. A Project Initiation (PI) has been developed and signed by the GLX Program Manager that covers the changed conditions including differing site conditions related to the excavation system, additional contaminated soil disposal and additional sections of retaining wall. The PMT is managing this closely and the current forecast indicates that these changes can be completed for less than the overall Fiscal and Management Control Board (FMCB) authorization total of \$27.37M.
- b. Availability of Keolis signal personnel (particularly signal testing crews) may impact upcoming work as signal personnel are in high demand for the Positive Train Control (PTC) program and other MBTA capital improvement projects. The Early Works activities that are most at risk is the Swift Grand Junction track testing and signal work. The PMT and the MBTA are managing this risk closely and coordinate regularly with PTC and Keolis.
- c. The Grand Junction outage requires that an alternate track route be used for up to 6 weeks over Pan Am and Genesee & Wyoming tracks between Ayer and Worcester in order to connect the north and south sides of the commuter rail system. These track rights have been negotiated with Railroad Operations and the freight operators in advance of the Grand Junction shutdown, and the alternate track route has been implemented.

2.2 Status Update

2.2.1 Tufts Area Status

2.2.1.1. Construction

Completed between May 1, 2018 and May 31, 2018

- Post cut-over testing was performed.

2.2.1.2. Currently in Progress

- Rail de-stressing

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2.2.1.3. Anticipated for Next Month

- Continue close out operations

2.2.2 Swift Area Status

2.2.2.1. Construction

Completed between May 1, 2018 and May 31, 2018

- Insulated joints installed on track
- Switch installations in preparation for Grand Junction outage
- Building track panels, switches and diamond continues
- Signal work necessary for Grand Junction outage
- Grand Junction taken out of service

2.2.2.2. Currently in Progress

- Building track panels, switches and diamond continues
- Signal work necessary for Grand Junction outage

2.2.2.3. Anticipated for Next Month

- Grand Junction to be placed back in service
- Install diamond, track and switches
- Signal work for temporary and permanent conditions

2.2.3 Yard Lead 10 Area Status

2.2.3.1. Construction

Completed between May 1, 2018 and May 31, 2018

- Track drainage

2.2.3.2. Currently in Progress

- Track grading and sub-ballast installation

2.2.3.3. Planned for Next Month

- Track grading and sub-ballast installation

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3 Program Cost Summary

3.1 Baseline Budget, Revised Budget and Expenditures Update (as of 31-May-18)

Work continues on the current major cost centers for vehicles (in the ‘material procurement’ cost-center below), professional services (program management staff, Design Professional, MBTA staff, and Owner’s Representative), the Keolis Early Works and the Design-Build Entity (noted in the ‘Construction’ and ‘Force Account’ cost-centers below).

The table below shows the monthly expenditures for each of the GLX cost centers. The expenditures for the current month total \$2.6M with the total program cost-to-date at \$629.6M.

Figure 5: GLX Program Cost Summary

Project Description	Original Budget (Jan-15 Funding)	Revised Budget (May-17 Annual Update)	Expended (Paid)	% Expended (Compared to Revised Budget)	Compared to Last Month	
					Expended Last Month	Expended Variance (from last month's report)
PS - Professional Services	411,718,975	355,706,434	244,690,095	68.79%	243,041,356	1,648,740
CN - Construction (inc. MBTA contingency)	1,239,479,042	1,511,400,000	206,225,320	13.64%	205,955,138	270,182
FA - Force Account (internal and external)	40,054,425	60,024,472	22,127,967	36.86%	22,116,290	11,677
RE - Real Estate	127,870,846	112,500,000	90,077,689	80.07%	89,988,656	89,033
MP - Material Procurement	125,457,163	131,469,465	53,100,290	40.39%	53,100,290	0
IN - Inspection	2,000,000	6,850,400	1,466,578	21.41%	1,466,578	0
PA - Project Administration	19,667,728	30,722,160	11,885,181	38.69%	11,278,467	606,713
XG - Unallocated Contingency (revised as of May-17)	25,960,557	79,927,069	0	0.00%	0	0
	\$1,992,208,736	\$2,288,600,000	\$629,573,120	27.5%	\$626,946,775	\$2,626,345

“Expended,” on this table, represents “Paid” values (not ‘earned value’)

27.4% (Last months %)

4 Environmental Review and Permitting

MBTA/GLX has requested that the DB Entity provide as part of their Monthly Status Report a narrative discussing environmental activities as required pursuant to the Technical Provisions Volume II Section 2.3.3. The monthly narrative has not yet been provided since the beginning of the project and a letter is being drafted officially requesting them to provide the information.

The DB Entity / A-1 Exterminators continued throughout the month of May baiting and performing the application of rodenticides and/or pesticides along the Right of Way (ROW). A-1 had been conducting their activities three times a week up until May 23, 2018, when they reduced their activities to once per week.

The DB Entity / NE Boring continued their environmental soil pre-characterization soil borings and soil sampling activities. The data from two of their borings (GLX-115 and GLX-PC-214) indicated concentrations of arsenic were detected above the applicable Massachusetts Department of Environmental Protection

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(MassDEP) Massachusetts Contingency Plan (MCP) RCS-1 reportable concentration. Additional fencing was installed at the entrance to the ROW by 22 Water Street, Cambridge, as a result of the elevated arsenic concentrations at GLX-115 which also exceeded the MassDEP Imminent Hazard (IH) criteria. The installation of the fencing isolated the area from the general public and nullified the IH condition. One composite soil sample (GLC-PC-271+50-277-2) indicated a detection of polycyclic aromatic hydrocarbons (PAHs) which exceeded the MassDEP RCS-1 concentration. The PAH detection triggers a MCP 120-day Notification and will generate a new MassDEP Release Tracking Number (RTN). The arsenic detections are being reviewed to determine if reportable exemptions per the MCP for historical use of pesticides along the ROW are applicable. These samples were collected from areas not identified in the Technical Provisions and are not located near or within an existing RTN area.

As part of the soil boring activities, the DB Entity / NE Boring began installing a series of groundwater monitoring wells. The wells were developed and groundwater sampling was subsequently conducted for characterization analysis. The groundwater samples collected from monitoring wells MW-9 and MW-12 indicated concentrations of dissolved lead above the applicable MassDEP MCP reportable concentration RCGW-2 standard.

The DB Entity completed the assessment activities at 48 Third Avenue, Somerville, as stipulated in Directive Letter No. 2 (Correspondence No.: MBTA-0025). The results of the assessment activities indicated PCBs in soils at concentrations greater than the Environmental Protection Agency (EPA) Toxic Substance Control Act (TSCA) standard of 50 ppm in one boring beneath the building (VMF-106) and in three (NWB-3B, B-6A and B-6D) of the eleven borings conducted in the northeast corner of the property. Additionally, the soil analytical data indicated the presence of asbestos in soil (same sample locations as the PCBs) at concentrations potentially requiring soil management under a MassDEP Bureau of Air and Waste (BAW) approved Non-Traditional Asbestos Abatement Work Plan, and may require additional assessment activities. The assessment data is currently under review in conjunction with the DB Entity's means and methods for the property to determine the most efficient and cost effective method to move forward with remediation and construction.

The DB Entity / Northern Tree Service started Phase 1 of the tree clearing activities along the east side of the ROW on May 7, 2018. Phase I completed at the end of May. Northern Tree Service has demobilized for a few weeks and will return at the end of June 2018 to conduct Phase II.

On two occasions during May 2018, the DB Entity / Wilson IHRIG conducted background noise and vibration monitoring outside along the ROW. The data is being used to develop/revise the Construction Noise and Vibration Abatement Plans.

On May 14, 2018, MBTA/GLX and Strategic Environmental Services (SES) conducted a pre-characterization survey/sampling of the contents of 11 (eleven) 55-gallon drums discovered at various locations throughout the GLX project corridor. Once the analytical data is reviewed and the drums are characterized, appropriate disposal facilities will be contacted and the drums will be disposed of under the Weston and Sampson contract.

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5 Right-of-Way and Real Estate

5.1 Narrative – Issues this Month

In the period between May 1, 2018 through May 31, 2018, there were six (6) transactions completed. The total transactions completed to date is 220 of 229. Remaining transactions include four (4) to be completed by the end of June 2018, and five (5) to be completed by October 2019. The remaining transactions are for long term rights and will be acquired over the next year. These do not impact the construction schedule.

Since the last report, the MBTA executed a second License Agreement with the City of Somerville, providing temporary access for construction to the property adjacent to the proposed Union Square Station. This completes three of the remaining transactions as described in the DB Entity contract documents. As part of that agreement, a fourth transaction was to provide additional area to the DB Entity until the new Union Square Developer US1 requires the parcel.

There are two final parcels to be completed at Central Street that are part of the original DB Contract specified takings. These parcels enable the connection of the Community Path at Central Street. As part of these negotiations, MBTA and City of Somerville are determining the most appropriate party to take ownership of this connection since it may affect the available parking in the neighborhood and the connection of the Community Path.

5.2 Real Estate Acquisition Log and Status

See Real Estate Acquisition Log and Status in Appendix G.

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6 Vehicle Status (Design and Fabrication)

6.1 Schedule

The first pilot vehicle was delivered to Boston on March 16, 2018. Pilot 2 is expected to be in Boston by late June 2018. Intensive vehicle qualification of both pilot vehicles continues in Boston (Pilot 1) and at CAF's facility (Pilot 2) final commissioning is expected late in the summer of 2018. The project anticipates that production vehicles will be in revenue service by May 2019.

6.2 Vehicle Design

The Final Design Phase is complete. Both pilot vehicles are being intensively tested in under both dynamic and static conditions.

6.3 Manufacturing/Testing

All seventy-four (74) carbody structures have been fabricated and inspected in CAF's Beasain, Spain factory and forty-two (42) of those have been shipped to CAF's Elmira, New York factory for final assembly. There are currently eighteen car sections in various stages of final assembly at CAF's Elmira New York facility.

Pilot 2 is undergoing static and dynamic testing in Elmira NY. Expected delivery to MBTA is June 28, 2018.

6.4 Budget

The overall contract vehicle fabrication effort is still trending favorably below the revised GLX Budget of \$170M (including allocated contingency).

- Contract VE-09-029, CAF USA Inc. – Purchase of 24 new Type 9 Vehicles
- Contract V20PS01, LTK Engineering – Design and procurement of 24 Light Rail Vehicles (LRV)
- Amendment No. 1 extended the contract time to October 2020, with no additional cost.
- Amendment No. 2 was executed on November 18, 2016 to support additional wayside integration scope of work for amount not to exceed \$390,894 - with no extension of time.
- Amendment No. 3 was executed on March 29, 2018, additional wayside integration scope of work for amount not to exceed \$492,854 - with no extension of time.
- Miscellaneous project costs include:
 - Advertising - GL Type 9 Program, \$3,968
 - Holland & Knight Legal Services / NO. 9 Vehicles, \$50,076
 - Sambo Okolo Buy America Audits- PO# 7-5890, \$39,927
 - AECOM/HNTB - E22PS04/AMD#6/GLX LRV Dynamic Modeling TTCl, \$55,028
- CAF Contract Change Orders No. 1 and 2 were executed as no-cost changes, which were to formalize MBTA agreed upon design improvements during design phase. Change order No. 3 is being finalized with no expected cost or schedule impact.

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6.5 Vehicle Team Photos

Pilot 2 in Elmira, NY



Pilot 2 Dynamic testing in Elmira, NY



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7 Program Schedule

7.1 Schedule Update

7.1.1 GLX DB Baseline Schedule

The DB Entity issued the Baseline Schedule Rev. 4 submittal for the MBTA's acceptance on April 20, 2018. The MBTA's disposition of the Baseline submittal as "Accepted as Noted" was issued on May 4, 2018, with certain conditions as noted below:

- a. The DB Entity acknowledgement of PCBs at the VMF site and dealing with EPA permitting requirements
- b. Front loading or unbalanced cost distribution did not seem proportional to the labor hour allocation for the activities in 2018.
- c. The DB Entity to provide detailed plan (narrative and locations) for excavation and backfill for VMF site work as part of the next monthly progress update, and
- d. MBTA's right to review Early Release Package submittals that are compliant with the contractual intent of the ERC submittal.

Due to significant time that has elapsed in the Baseline Schedule development and acceptance and the fact that the DB Entity has reported no forecasted schedule delays thru March 31, 2018, the DB Entity issued their Draft Progress Update #1 submittal on May 16, 2018, with their draft invoice for the period from NTP to March 31, 2018. The Progress Update 1 was rejected because the update contains logic and changes to durations that had not been submitted to MBTA for review and acceptance. Separately, the DB Entity has issued a revised draft Progress Update No. 1 to MBTA, which reflects 173 days of delay to the project Substantial Completion date. MBTA provided the review and comments on the accepted revision to Progress Update No. 1 (MBTA-0037). DB Entity has been requested to submit a final Progress Update No. 1 based on the MBTA accepted changes.

Critical Paths - DB Entity's Rev. 4 Schedule

Pending the DB Entity's final Progress Update #1 submittal to MBTA as stated above, the Critical Paths reported are as shown in DB Entity's Rev. 4 Schedule.

Milestone 5 achievement of VMF functionally complete and ready for MBTA operational testing – The path runs through the VMF building design package (DP49) submittals, MBTA reviews and/or approval, structural shop drawing preparation, building piling and concrete foundation, structural steel installation, building roofing, exterior and interior work, and testing and commissioning. The milestone achievement forecasted date of October 9, 2020, represents no variance in comparison to the Contractual date requirement.

Milestone 4A achievement of main line track to the Union Square Branch functionally complete and ready for DB Entity Systems Integration Testing Phase II (Branch One) – The path runs through the project segment 6 clearing and grubbing, earthwork, OCS drilled shaft installation, track ballast, track, OCS installation and testing. The milestone achievement forecasted date of November 4, 2020, represents no variance in comparison to the Contractual date requirement.

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Milestone 3A achievement of main line track to the Medford Branch functionally complete and ready for DB Entity Systems Integration Testing Phase II (Branch Two) – The path runs through the Washington St. bridge design package (DP20) submittals, MBTA reviews and/or approval, bridge phased construction as part of stage 3 sequencing, new commuter rail installation, track shifts from temp to new tracks, bridge phased construction as part of stage 4 sequencing, new Medford rail installation, complete project segment 3 systems installation and testing. The milestone achievement forecasted date of January 8, 2021, represents no variance in comparison to the Contractual date requirement.

Table 4: Contract Interim Milestone Table

Critical Program Milestone Deadlines			
Milestone	Contractual Date	MBTA Forecast	DB Entity Forecast
Notice to Proceed (Start of DB Contract)	20-Dec-17	20-Dec-17	20-Dec-17
Milestone 5: VMF Functionally Complete & Ready for MBTA Operational Testing	09-Oct-20	09-Oct-20	09-Oct-20
Milestone 4C: Revenue Service for 1st GL Branch	28-Apr-21	28-Apr-21	28-Apr-21
Milestone 3C: Revenue Service 2 nd GL Branch	10-Jul-21	10-Jul-21	10-Jul-21
Program Completion Milestone	15-Dec-21	15-Dec-21	15-Dec-21

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7.2 Look-Ahead Schedule

The weekly Progress Meetings to discuss the Design and Construction schedules are ongoing. The meetings, with participation by the DB Entity and PMT members, have included reviews of the DB Entity's 60-day look-ahead activities, anticipated weekend and single track work, and Keolis flagger staffing needs. The key activities planned to either start and/or finish in June 2018 include: DB submittals and/or MBTA reviews for DP15 Retaining Walls Pre-RFC Design, DP19 Retaining and Noise Walls Preliminary Design, DP11 Drainage Pre-RFC Design, DP34A Viaduct 3 Pre-RFC Design, DP 33A Viaduct 2 LEC Spans 8 -15 Substructure Pre-RFC Design, DP44 VMF Demo RFC Design, all geotechnical investigations except for viaducts, Lechmere viaduct HazMat surveys, Stage 2 Utility test pitting, soil pre-characterization from Washington St. bridge to Lowell St., 4th iron removal and temporary track installation.

Please refer to Appendix M for an updated Look-Ahead Schedule.

7.3 DB Change Orders and Time Impact Analysis

There are no change orders or time impact assessments submitted or currently under review.

7.4 Schedule Risks

The main schedule risks remain the mitigation of the PCB contamination at the VMF site. A detailed status update of these activities is contained in the Environmental Section 4 (above).

The other schedule risk associated with the Railway Worker Protection Services (Flaggers) is being actively managed by the PMT. The major accomplishment to mitigate is the installation of the separation barrier, which has resulted in a slight reduction in the number of flaggers required. This should continue as the separation barrier is extended over the month of June.

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8 Quality Assurance/Quality Control

8.1 Upcoming Deliverables from the PMT QA/QC Group Forecast

The following are the ongoing processes and deliverables for the GLX Quality Group:

Development of Standard Operating Procedures (SOPs)

The preliminary list of required SOPs to implement the GLX Project Management Plan (PMP) has been completed. The procedures are assigned and are being developed by the GLX Deputy Program Managers. The SOPs will be developed in concert with the latest revision of the PMP which is scheduled to be completed by the end of June 2018. The target date for completion of critical procedures is August 1, 2018.

The GLX Quality Management Plan (QMP)

The GLX QMP is completed and is being refined based on the ongoing revision of the PMP. The QMP will be approved and submitted as part of the June 2018 revision of the PMP.

PMT Construction Team Training

A construction training process identified as Just-In-Time training has been developed and is being implemented on a weekly basis. The hour long training is primarily geared for those team members involved in the construction discipline. During the last month training topics have included:

- GLX Quality Overview
- Environmental Overview
- Stakeholder Engagement
- Construction Daily Reports from a Control's Perspective

Monitoring of Keolis Early Works

The MBTA GLX Quality Manager continues to monitor the Keolis early works in regard to quality requirements. There are presently no quality related issues to report.

8.2 Audits of Design, Procurement and Construction

No officially scheduled quality audits took place during the report period. Other quality oversight activities of DB Entity have included:

8.2.1 General

Monitoring of DB Entity's Quality Management System continued during the report period. The MBTA GLX Program Quality Manager has been performing preliminary reviews of the DB Entity's proposed quality plans and implementing procedures and meeting with the DB Entity's Quality team on a regular basis to discuss the resolution of any procedural or field related issues. Presently there have been two

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Quality Management Plans (QMPs) from a total of four that are required by contract accepted by the MBTA. These two include:

- Volume 1 – General Quality QMP and the
- Volume 2 – Design QMP

Volume 3 the Construction QMP and the Testing and Commissioning QMS was reviewed during the report period and comments submitted to the DB Entity. A comment resolution meeting will be scheduled for June 2018.

8.2.2 DB Entity Quality Staff

The new DB Entity Quality Manager reported to the project and began work on May 29, 2018. Additionally, the DB Entity now has a full time Quality Control Manager and a Quality Discipline Lead (Track) on site and is planning on bringing in a Quality Assurance Manager by June 15, 2018. The DB Entity design subcontractor, STV, had a new Design Quality Manager start during the reporting period. This position reports to the DB Entity Quality Manager on any issue effecting quality.

8.2.3 Design

The MBTA GLX Program Quality Manger continues to review all of GLXC's design submittals to ensure that all quality objectives have been met and that the GLXC Design Quality Manager has met the accepted design quality program requirements in regard to completion of design quality checklists and design certification for each submittal.

8.2.4 Procurement

The MBTA GLX Program Quality Manger continues to review all of DB Entity's design submittals to ensure that all quality objectives have been met and that the DB Entity Design Quality Manager has met the accepted design quality program requirements in regard to completion of design quality checklists and design certification for each submittal.

8.2.5 Construction

Presently the activities on the Right-of-Way (ROW) involve the identification of site conditions including utility locations, environmental testing, and sub-surface investigation for design purposes. No quality issues have arisen as a part of this work.

8.3 Nonconformance Reports (NCRs)

There are no NCRs submitted or under review at this time.

8.4 New Quality Initiatives

No new quality Initiatives were started during the reporting period.

9 Training

The framework for a PMT multi-disciplinary training process has been completed. Continuous improvement of this process is ongoing. Continuous process improvement includes the identification of required training

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by job title, development of job specific training protocols, individual training records and overall training metrics. The monthly training schedule matrix is published on the 1st of each month and shows the latest training statistics including total training work hours.

10 Safety and Security

In May, a new Construction Safety Manager joined the PMT replacing the previous MBTA Safety Manager. GLX PMT and DB Entity instituted a new safety policy requiring all projects vehicle to follow a “Back-In” policy when parking. As a follow-up to the emergency response coordination meeting, the DB Entity has established a weekly meeting to review the development of the Traffic Management Plans with the City Engineers for the street closures to coordinate impacts with Emergency Responses.

A near miss occurred on May 13, 2018 when a Northern Tree Service employee scaled a wall without proper PPE. The DB Entity removed the employee from the project. There were two incidents of property damage. The first was a drainage line strike. The second was caused when a subcontractor vehicle struck a fence while backing up, causing minimal damage.

The DB Entity held a safety walk on May 22, 2018 to inspect the installation of the railway crossing and construction separation barriers. The installation of the separate barrier is ongoing and is anticipated to be completed by the end of June 2018. Project safety fencing has been completed at all of the building locations and along the right-of-way.

A weekly safety walk will begin next month (June 2018) with the Senior Management from both the GLX PMT and the DB Entity. In addition, a weekly Resident Engineer, Inspector and Safety Manager walk for hazard recognition will also begin in June 2018. Finally, the PMT Safety Manager will perform a safety audit of the DB Entity’s Safety Management Plan the week of June 18, 2018.

10.1 Preliminary Hazard Analysis

In Development

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10.2 Safety Metrics

Table 5: Safety Metrics

Entity	MONTH			PROJECT TO DATE			
	Hours*	Total Recordable Incident Rate (TCIR)	Days Away Restricted or Transferred Cases (DART)	Hours*	Total Recordable Incident Rate (TCIR)	Days Away Restricted or Transferred Cases (DART)	
GOALS	--	--	--	--	0.40	0.15	
GLXC Craft	3,478	0.00	0.00	8,599	0.00	0.00	
GLXC Staff	9,321	0.00	0.00	35,687	0.00	0.00	
SUBs	3,877	0.00	0.00	6,452	0.00	0.00	
STV	28,300	0.00	0.00	103,131	0.00	0.00	
Total	44,976	0.00	0.00	153,869	0.00	0.00	

*Hours are preliminary numbers and are subject to revision monthly

INCIDENT LOG		
TYPE	MONTH	PTD
Fleet Vehicle Damage	0	1
Property Damage	2	3
Utility Strike	0	0
Doctor Visit Only / First Aid	0	1
OSHA Recordable	0	0
TOTAL:	2	5

Construction Contract	Work Hours January 2017 -- May 2018*	First Aid Cases	Recordable Injuries
Keolis Early Works	104,141.54	0	0

* Hours are estimated through 5/31/2018.

10.3 Safety Certification

In Development

11 Risk Management

Risk review meeting is scheduled for June 5, 2018 with the each of the DPMs / Directors. The objective of the meeting is to review current project risks and assign risk mitigation plan updates for each responsible party. All active near term risk have been prioritized and the draft risk mitigation plan will be reviewed at the meeting.

12 DBE Goals and Performance

See DBE Report in Appendix H.

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13 Program Management Plan (PMP) Update

The PMT has targeted late June for the final review and revision of the PMP. The final version will be submitted to FTA by July 2, 2018.

14 Americans with Disabilities Act (ADA)

In Development

15 Buy America

As previously reported, the DB Entity has not yet procured any material.

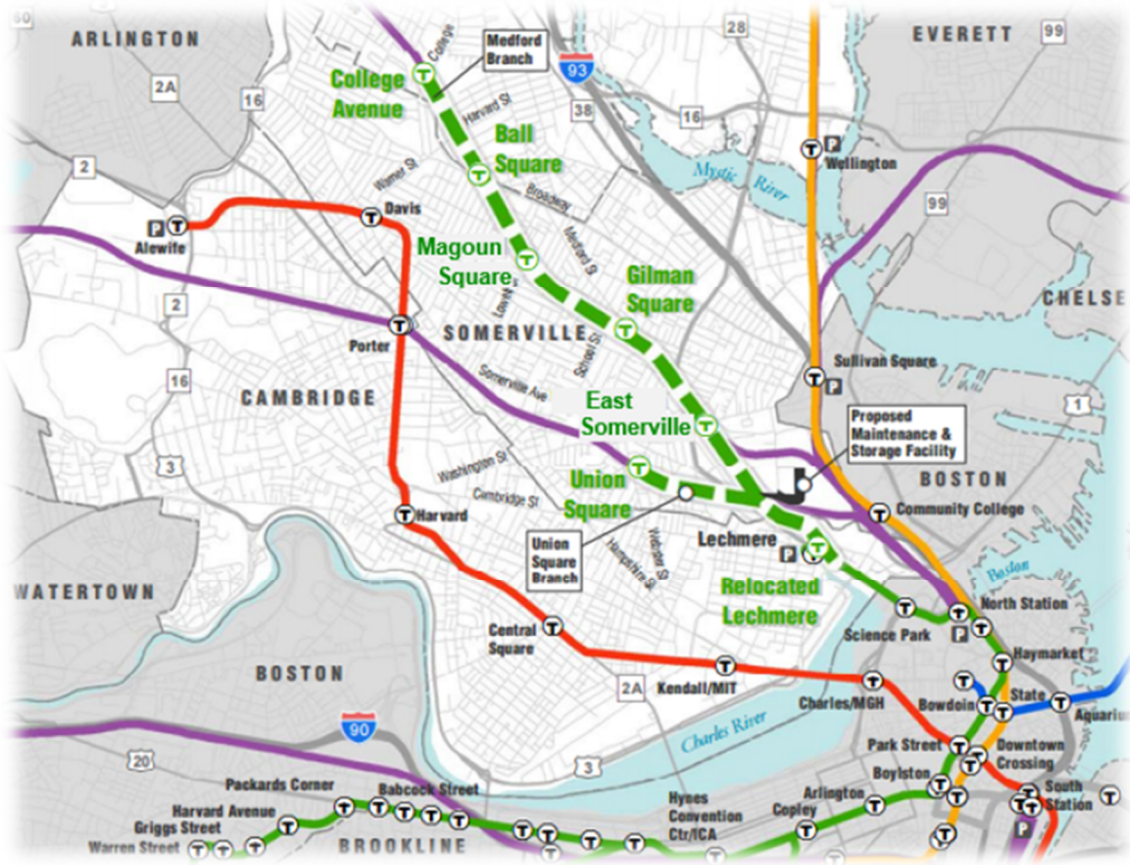
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16 Reference – Project Map

Figure 6: Project Map



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17 Site Photographs

Early Works – Swift – Keolis track crew working on replacement of track near Grand Junction.



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Early Works – Tufts – Keolis electrical crew dug trench to run conduit for switch heater cables.



Early Works – Swift - Keolis track crew install track panel on Fitchburg line.



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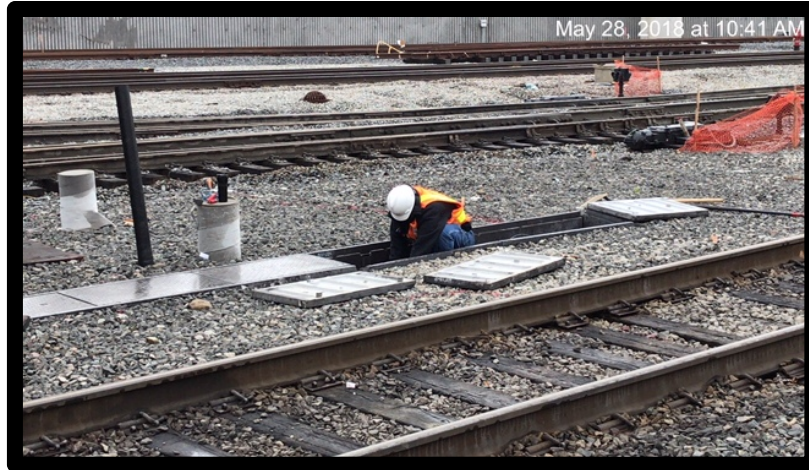
Early Works – Yard 10 – McCourt crew working drainage.



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Keolis comm. crew spliced in radios boxes between the new steward signal house from the old steward signal house.



Keolis communication team worked at swift west and east main signal houses to remove abandoned lines and tested the phone system.

