

PMOC MONTHLY REPORT

East Side Access (MTACC-ESA) Project

Metropolitan Transportation Authority

New York, New York

Report Period May 1 – May 31, 2016



PMOC Contract No. DTFT6014D00017

Task Order No. 2, Project No. DC-27-5287, Work Order No.2

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Length of time on project: Nine years on project for Urban Engineers

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THIRD PARTY DISCLAIMER

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For projects funded through FTA Full Funding Grant Agreements (FFGAs) program, FTA and its Project Management Oversight Contractor (PMOC) use a risk-based assessment process to review and validate a project sponsor's budget and schedule. This risk-based assessment process is a tool for analyzing project development and management. Moreover, the assessment process is iterative in nature; any results of an FTA or PMOC risk-based assessment represent a "snapshot in time" for a particular project under the conditions known at that same point in time. The status of any assessment may be altered at any time by new information, changes in circumstances, or further developments in the project, including any specific measures a sponsor may take to mitigate the risks to project costs, budget, and schedule, or the strategy a sponsor may develop for project execution. Therefore, the information in the monthly reports will change from month to month, based on relevant factors for the month and/or previous months.

REPORT FORMAT AND FOCUS

This report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT6014D00017, Task Order No. 002. Its purpose is to provide information and data to assist the FTA as it continually monitors the Grantee's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the Grantee continues to be ready to receive federal funds for further project development.

This report covers the project management activities on the East Side Access (ESA) Mega-Project managed by MTA Capital Construction (MTACC) with MTA as the Grantee and financed by the FTA FFGA.

All Grantee cost and schedule data included in this report is based on the status date of April 1, 2016.

MONITORING REPORT

1.0 PROJECT STATUS

a. Engineering Design and Construction Phase Services

As of the end of March 2016 (April 1 Data date), MTACC reported that the overall engineering effort was 99.0% complete, based on Earned Value for Design Deliverables, compared with a planned status of 100.0%. MTACC's Cost Report shows that 92.4% of the overall "EIS and Engineering" category has been invoiced and 92.5% of the "Design" category (including Design Settlement) has been invoiced.

Design work on the new, stand-alone CH061A package (completion of Queens Tunnel "A") has been completed. The 100% review submission has been accepted and the drawings were sealed on February 22, 2016. Contract advertisement had originally been scheduled for December 14, 2015, and then revised to March 1, 2016, but had been delayed pending final MTA approval. Based on NYS- Capital Program Review Board (CPRB) sign-off on the Intent to Advertise, the contract was advertised on May 23, 2016.

On Contract CM015 (48th St. Entrance), the MTA Board had previously approved the design agreement with the building owner. The building owner, RMC agreed to provide the designs for the relocation of the existing interior utilities and to complete some limited structural design. The contract package is being revised and finalized based on the agreements reached during negotiations between RMC and MTA. MTA is continuing discussions with RMC and is nearing completion of the required easements and construction agreements. MTA and RMC have signed the utility agreement. The GEC 100% design submittal date has been adjusted to accommodate late approval of the façade design and is currently forecast for July 8, 2016.

The work scope for Contract CH058 has been divided and repackaged into two separate contracts: CH058A will include construction of the Tunnel B/C Approach Structure and the Loop Box structure will be transferred to CH059; CH058B will include construction of the East Bound Re-route. Current Forecast dates for CH058A include: advertise July 17, 2017; bids due September 13, 2017; NTP June 18, 2018. These revised dates for advertising and bids due represent a three month delay from the dates reported in January 2016. The NTP date has been pushed back seven months. Design work for this package is currently on hold pending approval of the GEC Proposed Change Order for which negotiations have been completed. Additionally, the final design for package CH058B has been awaiting the completion of a rail traffic simulation study for Harold Interlocking. The first part of the study, operations without Temporary Eastbound LIRR Passenger (TELP) Track, has been completed, and the results indicate minimal impact to Harold Interlocking under peak load conditions. Based on this result and the fact that the TELP would have significant cost and schedule impacts to the planned CIL cutovers, the PMT will recommend that the GEC complete the CH058B design without TELP and will seek LIRR concurrence.

Final resolution has been reached on the west end of the Mid-Day Storage Yard (CQ033) regarding what work is to be performed by Amtrak (track and signals) to tie into the ERT (East River Tunnels) and what work will be performed by the CQ033 contractor. Regarding the Arch Street Yard tie-in, resolution is still required between MTACC and LIRR for final determination on the scope of LIRR Force Account (FA) work. A potential new issue has developed regarding the design variances required for the track clearances in the Mid-Day Storage Yard. The GEC has noted that there are a large number of variances being requested, but is confident that the necessary approvals will be obtained. The design package requires the design variance approvals regarding LIRR track standards and clearances in order to provide sufficient yard capacity to store the planned 24 twelve-car train-sets. Several design variance meetings have been held since mid-January 2016 and the plan for resolution is progressing. Additional meetings are planned. The GEC noted that there may be some minor design adjustments required and the PMT acknowledged that some of the design variances that remain will require approval by the State of New York. The GEC has prepared a package for LIRR submittal to the NYDOT. LIRR action is required. The advertise date for CQ033 is forecast for mid-July 2016, but the PMOC believes that this be likely be further delayed.

Contract CS284 (GEC CS086), Tunnel Signal Installation, is a stand-alone package. The MOU with LIRR for inclusion of Positive Train Control (PTC) in this contract is being finalized. MTACC reports that the proposed Change Order to the GEC for the addition of PTC was being issued and that the GEC has been meeting with the LIRR to confirm the PTC-related scope. The bid advertisement date is now anticipated during late 2Q to early 3Q2016.

For Contract VS086, Systems Package 3 – Signal Equipment Procurement, the GEC design was completed but is now being revised to incorporate the requirements of Positive Train Control (PTC).

As noted in earlier reports, the backlog of submittal and RFI reviews was an area of focus for the CS179 project team. In April 2016, there were still 295 submittals out of a cumulative total of 4,249 submitted that required a response from MTACC. Of these 295 pending submittal responses, 92 (31%) were considered by the contractor as outstanding and overdue with the response time exceeding the 30-day turn-around time period stipulated in the contract. In May 2016, an additional 192 submittals were made, bringing the cumulative total to 4,491 with 216 still pending a response. Of these 216 pending submittal responses, the contractor asserts that 94 (44%) of them are outstanding and overdue; 47 of which are the same overdue submittals as those noted in April 2016. Although the GEC has increased its efforts to reduce the backlog of overdue design reviews and submittals, this issue remains a concern to the ESA CS179 CM. While the contractor contends that its Control System designs are progressing, the PMOC recommends that some additional coordination meetings between the designers and the various LIRR user groups be held to ensure that proposed systems designs meet the operational requirements of the LIRR user groups. These additional meetings need to take place well before the designers move on to the final design phase. Additional information regarding specific System design for the CS179 contract is provided later in Section 1.0c. under CS179.

The ESA CS084 CM continues to raise a concern that it is taking far too long to obtain comments on, and responses to contractor submittals and RFIs. Additionally, the approval of critical facility designs and the GEC's completion of re-designs to address design issues identified in various locations continue to be items the contractor cites as critical schedule issues. As noted in previous PMOC reports, the extended length of time being taken to approve substation layout and equipment designs, including clarification of SCADA requirements, has enabled the contractor to assert that contract Milestone Nos. 1 and 2 are already delayed and will continue to be delayed on a day-to-day basis until the designs are approved and the clarifications are determined. In the latest monthly CPM schedule update (data date 5/1/16), the contractor notes that Milestone Nos. 1 and 2 are already delayed by 93 and 96 days, respectively. At the monthly progress meeting in May 2016, the contractor reiterated to the MTA that the uncertainty regarding the number of sensor points needed for the SCADA system is a primary contributor to the facility design delays and, that this system continues to be the contract's Critical Path. The ESA CS084 project controls group will need to perform a detailed analysis of the contractor's schedule to determine the validity of the contractor's assertions.

b. Procurement

As of the end of March 2016, the ESA Cost Report showed that total procurement activity for the project was 79.1% complete, with \$8.055 billion awarded out of the \$10.178 billion current projected budget.

The status of near-term procurements is summarized below:

- CM015, 48th Street Entrance – Advertise August 25, 2016; Bids due October 20, 2016.
- CQ033, Mid-Day Storage Yard Facility – Advertise July 18, 2016; Bids due September 21, 2016.
- CH061A, Tunnel A Approach – Advertised May 23, 2016; Bids due July 21, 2016

- CS086, Systems Package 2-Tunnel Systems – Advertise September 6, 2016; Bids due October 17, 2016

c. Construction

The PMT reported in its 1Q2016 Monthly Progress Report that total construction progress reached 62.3% complete versus 64.6% planned.

CM005 - Manhattan South Structures: The MTACC Forecast at Completion for CM005 decreased slightly in March 2016 to \$243,180,227. The MTACC forecast for Substantial Completion (SC) changed from March 31, 2016, to April 22, 2016, however, work activity continued through the month of May 2016. Actual construction progress for March 2016 was 1.1% versus 0.8% planned. Cumulative progress through March 31, 2016, was 97.8% actual versus 98.4% planned.

Construction Progress: During May 2016, the contractor continued lift beam installation in the fan chambers. The contractor continued the application of acoustical spray (fireproofing), and concrete wall construction at the 37th St. facility. Set up of the 52nd St. trailer complex continued with sprinkler installation. The contractor continued door installation site-wide. The contractor completed Fuko and contact grouting, and continued final cleaning site-wide. The contractor continued punch list work site-wide. The majority of work remaining is at the 37th St. facility and this will continue into August 2016.

CM006 – Manhattan North Structures: The MTACC Forecast at Completion for CM006 increased to \$362,707,288 in March 2016. The MTACC forecast for Substantial Completion remained at June 1, 2017. Actual construction progress for March 2016 was 3.1% versus 3.0% planned. Cumulative progress through March 31, 2016, was 70.6% actual versus 86.7% planned. In March 2016, MTACC and the contractor reached agreement to delete Milestone #2 and extend Milestone #3, Substantial Completion, to align remaining milestones with CM007 contract access restraints. ESA reports this agreement will be finalized in a contract modification.

Construction Progress: During May 2016, the CM006 contractor continued rehabilitation/remediation at the 63rd St. Tunnels & Structures. The contractor continued to install waterproofing and concrete wall construction at the GCT 3 East & West Wyes. Concrete wall construction completed and grouting and cleanup continued at GCT 4. Arch construction continued at Cross Passage 7 and Access Tunnel 5. The contractor continued arch construction at Tunnel EB4. Preparation for concrete construction and waterproofing installation continued for the 300 Series Tunnels and WB3. Contact grouting continued for Tunnel EB2. Duct bank construction continued at WB1. At the north end of the Westbound Cavern BOH, the contractor continued upper level exterior walls construction. The contractor continued exterior wall construction at the 50th St. Air Plenum. ESA still needs to complete execution of the contract modification for the new CPM schedule so that a realistic schedule is available to track construction progress. The contractor continued to work two shifts for the 63rd St. Tunnels work, while all other work activity remains done during day shift.

CM007 - GCT Station Caverns and Track: MTACC issued the Notice of Award and Notice to Proceed to the contractor, Tutor Perini Corporation, on April 11, 2016. Cost and schedule data on construction progress will be presented when ESA begins reporting for this new contract.

Construction Progress: MTACC held the Construction Kick-Off Meeting on April 18, 2016; the Safety Kick-Off and BIM Kick-Off Meetings on May 2, 2016; the Code Compliance Kick-Off Meeting on May 3, 2016; the Precast Concrete Kick-Off Meeting on May 6, 2016; the Community Outreach Kick-Off Meeting on May 11, 2016; and the Track Kick-Off Meeting on May 12, 2016. Track and Precast concrete deliveries to the site are projected to begin in November 2016. The first Construction Progress Meeting is scheduled for July 14, 2016. The contractor has started mobilization, submission of permit applications, and preparation of submittals, and other documentation for this contract.

CM014A – Concourse and Facilities Fit-Out Early Work: MTACC reports that, through March 1, 2016, the project final cost at completion is forecast at \$58,128,537, slightly reduced from the previous \$58,222,843. MTACC reports in their Monthly Report for the period through March 1, 2016, that the forecast date for Substantial Completion is April 29, 2016. Through May 31, 2016, this was not accomplished. The Project Office has advised the PMOC that Substantial Completion will be based on complete energization of all six permanent power feeds. As of May 31, 2016, all six power feeds had been finally energized, although the PMOC has not yet been advised of a prospective Substantial Completion date. As noted below, there has not been any contractor presence on the site through May 31, 2016. Accordingly, in the MTACC 1Q2016 Report, construction progress remained 97.1% versus 100.0% planned.

Construction Progress: Through May 31, 2016, ConEd has energized the 6th and final feed into the B20 south substation in the Concourse; but there are issues. Although ConEd energized the final feed, there were no electricians available to “rack in” the breakers associated with this feed. Therefore, there is power on the supply side, but no power on the load side for this feed. During April and May 2016, there has been no contractor presence on the site. The contractor has sent a letter to the Project saying that they will be back on site on June 6, 2016. The Project Office has advised the PMOC that there has been discussion at MTACC management about contacting the contractor’s bonding company. To date, as far as the PMOC is aware, this action has not taken place.

Remaining Work: Completion of remaining work includes: Completion of breaker installation; Completing the outstanding work items list; Completion of the SCADA testing, including the issue with the 51G Alarm on the 87 Relay; As-Built Drawings; that are required in order for the CCU to perform its final inspections, and which As-Built must also include electrical equipment survey data and, dimensions of the distance from the wall, etc. In the Sewer Ejection Room, the contractor is disputing that they are responsible for furnishing and installing the pump.

CM014B – Concourse and Facilities Fit-Out: MTACC reports that, through April 1, 2016, the final Forecast at Completion cost at completion forecast remained at \$463,617,500. The Substantial Completion date remains August 18, 2018. Actual construction progress through April 1, 2016, was 4.3% versus 7.0% planned. Cumulative progress was 14.9% actual versus 17.0% planned.

Construction Progress: Through April 1, 2016, the Surveying in the Concourse is continuous and will be on-going throughout this contract. During May 2016, work trains from B/N Yard were temporarily halted due to a fire under a portion of overpass on the Metro North Harlem Line. Some electrical transformer deliveries had to be returned to storage. Otherwise, the contractor has begun delivery of the stored electrical transformers, switchgear, etc. into the B20 (north) substation.

Baseline Schedule – The current status is Proceed as Noted. The current version of the schedule is Update #13 for April 2016.

Milestone #1 (Complete Terminal Management Center, Communication Room C-2 & Communication Closet C-5) – The extended milestone date continues to be June 1, 2016. Although this is considerably late from the original March 5, 2016, date, it is within the June 15, 2016, Access Restriction date for the CS179 contract.

Milestone #2 (50th St Room CR102, Tunnel Fan Room, Electrical Room #126 & ICC Room), June 4, 2016 – The CCM reports that this milestone will also be delayed. The reason is that some of the rooms, except the ICC Room, which are part of the Elevator #9 shaft, are out of alignment and their block walls have to be torn out and reconstructed. These walls were constructed by the CM013 contractor.

Milestone #5A (Completion of 48th St. Entrance) November 25, 2016 – This is being delayed until March 2017 due to delays in demolition of the MTA Building in the Concourse.

Concourse (Madison Yard): Installation of underslab utilities is approximately 90% complete. Structural repairs to columns in Madison Yard that support private buildings continue throughout. Work continues with waterproofing, rebar, forming and placement of cast-in-place manholes and ejector pits. The contractor continued placing PAC (Pneumatically Applied Concrete) headers at the top of the CMU-UA walls in Zone #4 & #5 along Track #115. Construction of CMU walls for rooms at the south end of the Concourse (Zone 1) continued. In the TMC Room, punch list work has begun. The cable tray beneath the floor needs to be cut back to allow for the revised location of the FM200. A temporary humidifier has been installed to accommodate the upcoming summer weather. CS179 and CM014B must come to an understanding on the lock out procedure to take place once CS179 starts taking over rooms and begins to stock them with equipment. Placement of CLSM (Controlled Low Strength Material) backfill continues throughout the new concourse in various areas. Final concrete slab placement continues at Wellway perimeters and in the B20 Substation area.

Demolition (Hog Houses & MTA Building): Demolition of the Hog Houses is complete. Demolition of the MTA building remains delayed by MTACC CCU. The issue is with establishing an approved emergency egress from the area. This work is being performed by the CM005 contractor. This delay is tied to Milestone 5A noted above.

Biltmore Connection: This advancement of work continues to be on hold while Construction Work Plans (CWP) and Safe Work Plans (SWP) are reviewed and approved.

Wellways: Conduit, racks, and sprinkler piping installation is complete in Wellway #1 and ongoing in Wellway #2. CS179 ceiling devices for the Wellways have been approved.

Dining Concourse Connection: Structural steel fabrication/delivery continues for the upper floor deck framing of the escalator opening.

Elevator T-01: Outages at Track 30 are ongoing. Demolition of the exterior of the existing shaft continues at night. Structural steel fabrication/delivery is underway.

East 48th St. Entrance: Rock excavation is approximately 85% complete. The contractor has placed the invert slab at the west end.

44th St. Vent Building: Demolition of the steel struts was completed. The Concourse Level floor slab was placed.

East 50th St. Vent Building: Installation of sprinkler piping continued throughout. The contractor continued to install seismic clip angles for masonry and ductwork/fans. Painting of walls continues throughout. A change order has been completed for CM014B to perform the Elevator #9 shaft alignment corrective work that was previously installed by the CM013 contract. This was noted above in relation to the delay in Milestone #2.

Systems Contracts:

CS084 – Traction Power Substations: In its March 2016 Monthly Report, MTACC reports that, the Budget and Forecast for the CS084 contract remained at the \$79,717,772 level previously reported. The MTACC's March 2016 Monthly Report shows a forecasted contract substantial Completion (SC) date in December 2019. The contractor, in its Monthly Schedule Update No. 5 (Data Date May 1, 2016), also indicates a December 2019 S/C date. However, in the same schedule update, the contractor notes that two contract Milestones are already delayed and will continue to be delayed on a day-to-day basis until certain substation and equipment designs are approved. As of the May 2016 monthly progress meeting, the design issues remained unresolved and the impact any additional delay will have on the contract SC is yet to be determined.

In its March 2016 Monthly Report, MTACC shows a progress curve for the CS084 contract that presents actual contract progress as 6.1% versus a planned 13.1%; numbers that are based on actual versus projected costs, not physical construction efforts. An analysis of the status of the work activities shown on the approved baseline schedule is necessary to determine the status of the progress of physical work on this contract. To accomplish this, the PMOC has requested the CS084 approved baseline schedule in Primavera format for analysis.

Design Progress: The contractor continued with the transmission of contractual submittals and its design development of the substations. The contractor continues to assert that delays in receiving comments back from the MTA on the C05 facility switchgear, the number of SCADA point sensors, and the general C08 substation design impacted its ability to meet its own original design, procurement, fabrication, and installation schedules. The ESA CS084 CM previously acknowledged that these comments were taking too long to process and met with LIRR senior management and the General Engineering Consultant (GEC) to focus on the priority of these designs. In May 2016, the ESA CS084 CM advised that the LIRR engaged additional resources to assist in the review of CS084 design submittals. While the design for the C05 switchgear and the conceptual design for the C08 substation were approved in May 2016, the final decision on the number of SCADA sensor points remains elusive and continues to cause a day-to-day delay to this contract. The GEC continues to work on design changes to address the penetration to the track level and room beam height issues at the Vernon (C05) facility. Implementation of the design changes must be negotiated with the CS179 contractor and progressed before the CS084 contractor begins work in the C05 facility. While the ESA CS084 CM acknowledged that these design efforts were taking too long to complete and need to be accelerated to preclude schedule slippage, as of mid-May 2016, these design efforts remained as on-going. One other previously reported design issue that needs timely resolution is the routing of DC cables at the Vernon (C05) substation facility. The identification of this issue was made several months ago, but the GEC has still not produced a re-design to remedy the problems. Exacerbating this issue is the fact that once a revised design is approved by all parties, MTACC will need to determine who – the CS179 or the CS084

contractor – will implement the re-design effort so that the CS084 contractor can install the DC cables.

Construction Progress: As of mid-May 2016, the contractor was actively progressing the L3 electrical service work to supply electrical power from Consolidated Edison (ConEd) to various signal locations in Harold interlocking. That work includes the installation of conduit, cable, electrical cabinets, and transformers. At the May 2016 CS084 progress meeting, it was noted that ConEd advised the ESA ConEd liaison that it might not be able to complete and energize the L3 electrical service feeders until October 2016. The CS084 CM indicated that the electrical service was needed before October 2016 and that efforts would be made to accelerate the ConEd installation. As noted earlier, the contractor continued to advise the CS084 ESA CM that the water infiltration issue at the Vernon facility needs to be permanently mitigated before any equipment is installed. The continuing water infiltration issue is, per the contractor, precluding the commencement of any physical work in the substation facilities. At the April 2016 monthly progress meeting, and again at the May 2016 monthly progress meeting, the CS084 contractor advised the ESA CS084 CM that it appeared per the CS084 contract schedule, that the testing of the C08 substation is scheduled to occur before the conduit from the C08 substation to the track 3rd rail is installed by CM007 contract. If this is an accurate observation, then it would mean that this would impact the CS084 contractor's ability to provide the required testing of the C08 substation in accordance with the contract specifications. The ESA CS084 CM advised that schedule coordination between the CS084 and CM007 contracts is needed to be examined to determine contract impacts.

CS179 – Systems Package 1: As of the end of March 2016, MTACC's Budget and forecast for CS179 remained at \$606,938,540 but, the Forecast was increased from the \$606,938,540 reported by MTACC in its February 2016 report to \$608,313,473 – a \$1,374,933 increase that is not explained. In its March 2016 report, MTACC states that the Forecast is within the Budget; but, the numbers presented do not support this statement. In its March 2016 Monthly Report, MTACC shows a progress curve for the CS179 contract that presents actual contract progress as 19.9% versus a planned 52.3%; numbers that are based on actual versus projected costs, not physical construction efforts. As presented, these progress numbers imply that the contract is moving significantly further behind schedule from previous reports. As noted in last month's PMOC report, Modification No. 18 to this contract revised the original Milestone, access restraint, Option exercise, and Substantial Completion (SC) dates. The new SC date is July 1, 2020; an approximate seven-month delay from the original November 19, 2019 date. As noted previously, this SC is dependent upon the work progress and schedule of Contract CM007; a contract awarded in April 2016. As the CS084 contract progress is dependent on the completion of Milestone No. 1 in the CS179 contract, a milestone whose completion date was revised as part of contract Modification No. 18, the assessment of any potentially corresponding delay to Contract CS084 must now be re-evaluated based on the issuance of contract Modification No. 18. ESA IPS #80 shows Milestone No. 1 in the CS179 contract forecasted to complete on December 31, 2016, a 178 calendar day delay from IPS #79's forecasted date of July 6, 2016. However, the IPS does not appear to show that the delay to the forecasted completion of Milestone No. 1 in CS179 is due to Modification No. 18 and instead appears to be due to the reduction of contract level contingency in CS179, from 183 days in IPS #79 to 36 days in IPS #80. The PMOC has verified that IPS #80 contains a logical relationship between the completion of Milestone No. 1 in contract CS179 and a start milestone in CS084 representing TPSS Access at Vernon Blvd. The forecasted start milestone for CS084

access dependent on CS179 was also shown to have been delayed a corresponding 178 calendar days between IPS #79 and #80. The However, IPS #80 shows the forecasted substantial completion date for CS084 to have experienced a 84 calendar day savings since IPS #79. The PMOC questions how such a large delay to the access milestone in CS084 could translate into a savings to the forecasted completion date of the same contract and requests that the IPS logic be double-checked and for the MTACC to provide comments regarding this. As of the end of May 2016, Contract Option Nos. 1A, 2A, 2B-1, 3A, 3B, 6, and 7 were exercised. From discussions at meetings, it appears to the PMOC that several potential Buy/Ship America issues pose significant risks to the successful and timely completion of this contract. Although two previously potential Buy/Ship America issues (door hardware and DC transfer switches) appear to no longer be compliance issues, four others (video display panels, CCTV equipment, HVAC equipment, and variable frequency drives) have no apparent resolution at this time, which appears to indicate that MTA will have to request a Buy/Ship America waiver from the FTA.

Design Progress: By the end of May 2016, 7 of the 11 Control System Second Design Reviews (SDRs) had taken place and presently, all 11 of the Final Design Reviews (FDRs) are forecast for completion by mid-October 2016. The PMOC continued to observe at several of the SDRs that many questions and clarifications regarding LIRR user expectations for various proposed designs still need to be addressed. Proactive communications between the LIRR user groups, CS179 PMT members, and the contractor will need to be implemented to ensure that the proposed Control System designs meet the intent of the contract requirements and can be operationally implemented and utilized by the various LIRR user groups. The contractor continues to assert that the backlog of comments from the MTA on design submittals and Requests for Information (RFIs), as well as the extended time being taken to address facility design issues, is causing delays to the timely progression of the contract. MTACC will need to evaluate these assertions against an updated contract schedule; one that includes revised Milestone dates developed as part of contract milestone No. 18.

Construction Progress: During May 2016, the CS179 contractor continued various elements of work (conduit installations, concrete work, temporary power installations, etc.) at the 2nd Ave.; B10; Roosevelt; Vernon; Tunnels Tracks A, B/C and D; Yard Lead Tunnel; 29th St.; Queens Plaza; 39th St. and 63rd St. facilities. Also in May 2016, weekend work in the LL tunnel, consisting of the installation of tunnel lighting and power cables, commenced; several transformers were delivered at the B10 facility; concrete pads were poured at the 12th Street facility; and conduit at the track level in GCT was installed. The two Stop Work Orders (SWOs) for work in the control rooms at the Vernon and B10 facilities are still in effect. As previously reported, these SWOs were issued because of the design conflict between the room sizes and equipment layouts in the control rooms. The GEC continues to work on solutions to this issue and no date was given for the rescinding of the SWOs. Work at the 23rd Street facility remains on hold as a result of an issue with water infiltration through the concrete floor and discussions with the CQ032 contractor regarding the mitigation of this issue continue.

Queens Contracts:

CQ032 – Plaza Substation and Queens Structures: The MTACC Forecast at Completion for CQ032 decreased to \$256,975,611 in March 2016. The MTACC Forecast for Substantial Completion was extended from September 21, 2016, to September 6, 2016. ESA reports that the contractor’s proposal to remediate the unforeseen obstruction encountered at 23rd St. facility vent

shaft has been accepted by the GEC. Actual construction progress for March 2016 was 0.1% versus 1.1% planned. Cumulative progress through March 31, 2016, was 100.0% actual versus 97.2% planned.

Construction Progress: During May 2016, the CQ032 contractor completed the exterior of the Yard Services Building (YSB) and continued architectural and mechanical finishes. The GEC is working with Con Edison on a revised gas connection to the YSB. The contractor continued clean-up and punch list activity at the Plaza Vent Structure (PVS). The contractor continued Plaza grading and sitework. The contractor has planned to start BMT underpinning removal on the north side of Northern Blvd in June 2016. As noted above, the acceptance of the contractor's proposal allowed the excavation work at the SW/NW vent shafts of the 23rd St. facility to resume. ESA reports the revised Substantial Completion date is due primarily to accommodate remaining work at the 23rd St. facility. A pre-existing water infiltration condition at the upper P3 level of the 23rd St. facility will affect remaining floor sealing work. Instead of corrective action by CQ032, this work will be performed by CS179, transferred by contract modification. The PMOC is also aware of discussion about pre-existing water infiltration conditions present at the Plaza Structure which includes waterproofing envelope issues at bracing slabs and in the launch block area.

Harold Interlocking Contracts:

CH053 Contract – Harold Structures Part 1 and G.0.2 Substation: MTACC declared Substantial Completion for CH053 on February 29, 2016, and discontinued reporting financial and construction progress as of its 1Q2016 (January, February, and March 2016) Monthly Report. The last financial forecast that the PMOC has for CH053 indicates that the Forecast at Completion decreased slightly to \$290,321,730 as of February 28, 2016. Since the CH053 report was discontinued, there is no monthly construction progress available for May 2016, although the last cumulative progress, through February 2016, was 96.1% actual versus 100.0% planned.

Construction Progress: During May 2016, the CH053 contractor continued to install a communications duct bank and make miscellaneous catenary installations and punchlist repairs throughout Harold Interlocking and the new G02 Substation.

CH057 – Harold Structures Part III: MTACC's Forecast at Completion for the CH057 contract increased to \$90,225,843 during March 2016. MTACC extended its forecast Substantial Completion date by 2 months to August 18, 2017 (this contract has several options which could extend the eventual Substantial Completion date). Actual construction progress for March 2016 was 1.9% versus 2.6% planned. Cumulative progress through March 31, 2016, was 4.1% actual versus 5.0% planned.

Construction Progress: During May 2016, the CH057 contractor continued to install secant and soldier piles in the Tunnel D East Approach Structure, continued demolition of the east and west abutments of the LIRR ML2 Track 48th St. undergrade bridge, and continued to install catenary pole foundations for the RPR (Relocated Primary Route) Track in Harold Interlocking.

CH057A – Part 3 Westbound Bypass: MTACC's Forecast at Completion for the CH057A contract increased during March 2016 to \$148,526,528 due to execution of a contract modification. MTACC's forecast for Substantial Completion was extended by 5 weeks to June 6, 2017. Actual construction progress for March 2016 was 0.8% versus 0.9% planned. Cumulative progress through March 31, 2016, was 32.0% actual versus 100.0% planned.

Construction Progress: During May 2016, the CH057A contractor continued to de-water the entire Westbound Bypass (WBY) construction site, completed construction of the reaction frame for the “jacked shield” tunnel excavation box to push against, began assembly of the “jacked shield”, and continued excavation of the West Approach Structure of the WBY. The contractor anticipates that excavation of the WBY tunnel will begin in mid-June 2016.

Railroad Force Account Contracts:

FHA01 – Harold Stage 1 Amtrak: MTACC’s Forecast at Completion for FHA01 remained at \$18,824,861 during March 2016. MTACC extended its forecast for Substantial Completion by 2 weeks to October 6, 2019. Actual construction progress for March 2016 was 0.0% versus 0.1% planned. Cumulative progress through March 31, 2016, was 98.8% actual versus 100.0% planned.

Construction Progress: Amtrak did not perform any significant Stage 1 construction during May 2016.

FHA02 – Harold Stage 2 Amtrak: MTACC’s Forecast at Completion for FHA02 remained at \$60,150,231 during March 2016. MTACC extended its forecast for Substantial Completion by 2 weeks to December 20, 2020. Actual construction progress for March 2016 was 0.0% versus 0.0% planned. Cumulative progress through March 31, 2016, was 100.0% actual versus 97.8% planned (MTACC did not offer an explanation for this discrepancy in its March 2016 Monthly Report, although the PMOC notes that it reports construction progress based on accumulated project cost rather than actual construction).

Construction Progress: During May 2016, Amtrak C&S personnel removed old signal wire at the E37 Signal Bridge. Electric Traction personnel completed construction of the new B-913 catenary pole and completed removal of catenary appurtenances at the old B-913 catenary pole and adjacent catenary poles. Amtrak 3rd Rail personnel completed installation of DC power cables for the #747 crossover.

FQA65 – Loop Interlocking Amtrak: MTACC’s Forecast at Completion for FQA65 remained at \$33,287,863 during March 2016. MTACC extended its forecast for Substantial Completion by approximately 6 months to June 5, 2023. Actual construction progress for March 2016 was 1.1% versus 0.5% planned. Cumulative progress through March 31, 2016, was 18.8% actual versus 54.4% planned.

Construction Progress: During May 2016, Amtrak C&S personnel completed construction of the retaining wall along Loop 1 Track west of the F2J signal hut in “F” Interlocking. After the wall was completed, Amtrak abolished the gang due to its perception that continued work for the gang was rapidly declining.

FHL01 – Harold Stage 1 LIRR: MTACC’s Forecast at Completion for FHL01 remained at \$24,379,363 during March 2016. MTACC extended its forecast for Substantial Completion by approximately 6 months to April 11, 2017. Actual construction progress for March 2016 was 0.2% versus 0.0% planned. Cumulative progress through March 26, 2016, was 86.8% actual versus 100.0% planned.

Construction Progress: LIRR personnel did not perform any significant Stage 1 construction during May 2016.

FHL02 – Harold Stage 2 LIRR: MTACC’s Forecast at Completion for FHL02 remained at \$92,932,559 during March 2016. MTACC extended its forecast for Substantial Completion by 2

weeks to July 29, 2019. Actual construction progress for March 2016 was 1.2% versus 1.2% planned. Cumulative progress through March 31, 2016, was 85.4% actual versus 91.6% planned.

Construction Progress: During May 2016, LIRR Signal personnel continued to install signal cables between the “H5” and “H6” CILs and their respective signal cases, continued signal revisions at the Harold CIL, installed signal conduit to the new #6198 movable point frog (MPF), installed batteries in the new “H1” CIL, continued signal, break down testing, and conduit installation at the “H2” CIL, installed ground rods at snow melters 10A, 15A, and 17A, installed conduit and sweeps at Signal Bridge #24, and realigned signal conduit at signal 55W. LIRR Communications personnel installed communications hardware and messenger cables between pole #s 24 and 34 (48th St. and Woodside). LIRR Electric Traction personnel installed high tension cables between pole #s 26 and 33 and prepared high tension cables for splicing at Tower #37. LIRR Track personnel continued to construct panels for the #3154 turnout, which is scheduled for installation in June 2016.

d. Quality Assurance and Quality Control (QA/QC)

ESA Quality Staff: The ESA Quality Manager has assessed his requirement needs against all existing and future contracts. He has determined that he needs one additional person. The job will be advertised on the ESA Consultant’s web site.

GEC Quality: The GEC Quality Manager has been approved by the ESA Quality Manager. An audit of the GEC’s Quality System has been scheduled for June 21, 2016. The PMOC has been invited to attend the audit.

CM013: A closeout audit on this contract was held to determine whether any quality issues will prevent this contract from closing. There is an open nonconformance report (NCR) for pipes fabricated in China that were installed and are now inaccessible. Closure of this NCR still awaits resolution between MTACC Legal and the FTA.

CM014B: Some issues were identified with as-built drawings. The ESA Quality Manager met with the contractor. As a result of this meeting, changes are being made and as-built drawings will be resubmitted.

CM005: The ESA Quality Manager performed a walkthrough with the CM office in April 2016. The CM office still has a long “punchlist” with almost 300 items. Although the CM Office expects all of the “punchlist” items to be closed by July 29, 2016, the PMOC is concerned that there are so many actions still to be completed before this contract can be closed.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

ESA has reported that the critical path of the IPS has shifted from Manhattan/Systems work to Harold work, and that the Manhattan/Systems path of work is approximately three months behind the critical Harold path of work. The critical path of IPS Update #80 (for target RSD) goes through the following contracts and tasks, and it is slightly different from the baseline IPS of July 2014:

- Development, Review, and LIRR acceptance of H6 testing procedures;
- H5/H6/Loc 30 Pre-testing;
- H5/H6/Loc30 Cutover and H1/H2/Loc 30 Pre-testing;
- H1/H2 Cutover and NH1/PW1 Outage electrical work;
- FHL04 electrical work;
- CH058 civil work on the B/C Approach Structure;
- Tie-in, Testing, and Cutover of 4C;
- LIRR Revenue Service Date (RSD);
- Train Contract Staffing and LIRR Final 3 Months Period;
- [REDACTED]
- [REDACTED]
- Late Revenue Service Date (Begin LIRR Revenue Service to GCT).

ESA reported the following regarding the critical path:

The Harold critical path for this month starts with preconstruction work including H6 Civil Speed Enforcement Design for SYSTRA and GEC/LIRR concurrent review and comment; ATS submission review; LIRR simulation and comments; and LIRR approval. It then flows through the H5/H6/LOC30 (2G) cutover in October 2017 and the H1/H2/LOC30 (2J) cutover in August 2018, both requiring a combined 22 months of pretesting prior to cutover. LIRR/MTACC are currently

holding task force meetings to verify the current cutover duration for the remaining CILs. The path then continues into various switch removal and installation work in the northeast quadrant of Harold interlocking, performed by LIRR and the CH057D PW/NH1 3rd Party contract. The path continues into the B/C approach structure work (CH058A), testing for the B/C approach structure track work cutover (4C) and into the “Harold ESA Ready for RSD” milestone of October 2020. The Critical Path concludes with the LIRR planning for final training and LIRR final 3-month period tasks and terminates at the Target Revenue Service Milestone.

ESA has reported that it will no longer track the Early RSD, and that IPS #80 shows no impact to the Target RSD of February 12, 2021, and no impact to the Late RSD of December 13, 2021. The PMOC performed a variance as shown above between IPS #79 (DD: March 1, 2016) and IPS #80 (DD: April 1, 2016).

ESA reported this period that a portion of Harold is a second critical path. IPS #80 reported the following regarding the Manhattan/Systems portion of work:

The Manhattan/Systems critical path starts with finalizing the issuance of the CM007 Notice of Award and Notice to Proceed (NTP). The path then makes its way through the design, fabrication, and delivery of the first precast elements at the mezzanine level of the GCT Tunnel. The path then continues through the upper level structure then the lower level. Elevator work then follows. CM007 work then transitions into the CS179 integrated systems testing (IST). CS179 performs integrated systems testing for the communications systems and facility power at Jamaica Station. The path then continues onto fire detection and security at the TMC and MTA Police systems. The critical path then proceeds through the remainder of integrated systems testing at the Train Operations Center (TOC) and concludes at CS179 substantial completion, currently forecast for July 1, 2020. ■

The ESA 1Q2016 Report shows an increasing divergence between the CS179 forecasted and current contract progress, which is of concern to the PMOC. ESA has a significant number of contracts that are “near critical”, which by definition are within 45 days of the Critical Path. These contracts, as listed in the IPS Report Narrative, are as follows:

- CM007 GCT Tunnels;
- CS179: System Package 1 – Facilities Systems;
- CH057D: Harold Track Work: Cutover 3B (Track A): PW1/NH1/WBY (hand off to CH058A) – Future Contract;
- CH058A: Harold Structures – Part 3 A, Tunnel B/C Approach Structures (hand off to CH058B); and,
- FHL02/03/04: Harold LIRR Force Account Work.

However, the PMOC has found in Section 05 of the IPS #80 Report that the following Projects were identified in the PMT’s Bar Charts as Near Critical Path ■

■
■:

- CM014B: GCT Concourse and Facilities Fit Out;
- CM015: 48th Street Entrance;
- CM005: Manhattan South Structures: 38th Street Vent Facility; AT 1&2; WB GCT 1&2; North Horseshoe Tunnel (Invert & Arch); MS#4 Turnover to CS284 AR (LL Tail Tracks);
- CQ033: Mid-Day Storage Yard Facility;
- FQA65: Loop Interlocking – Amtrak F/A;
- CH053: Harold Structures – Equipment Pads & Ductbank at Woodside/L4;
- CH054A: Harold Structures – Part 2A;
- CH057A: Westbound Bypass Structure (exclude slab); Signal Bridge and Site Grading at Location 30 CIL;
- CH057D: Harold Track Work (PW1/NH1/WBY);
- CH058A: B/C Structure/Catenary Structure;
- CH058B: Eastbound Reroute Structure (hands off to CH059 – Harold Structures – Part 4 (Car Washer & Loop Box Structure Extension));
- CH059: Harold Structures – Part 4 (Car Washer & Loop Box Structure Extension);
- FHA01: Harold Stage 1 – Amtrak F/A;
- FHA02: Harold Stage 2 - Amtrak F/A: Balance Work;
- FHL02: Harold Stage 2 – LIRR F/A;
- FHA03: Harold Stage 3 – Amtrak F/A;
- FHL03: Harold Stage 3 – LIRR F/A;
- FHL04: Harold Stage 4 – LIRR F/A; and,
- CS179: Systems Package 1 – Facilities Systems.

Table 2-1, below shows ESA’s upcoming contract procurement schedule:

Table 2-1¹: Future Procurement Schedule

Contract Description	Advertise Date	Bid Date	NTP	Project Contract Period	Substantial Completion
CM007 ² GCT Caverns	12/19/2014 (A)	Technical Proposal: 9/15/2015 (A)	4/21/2016	46 Months	1/30/2020

FOIA EXEMPTION 5 U.S.C. SECTION 552(b)(4)

		Cost Proposal: 10/27/2015 (A)			
CM015 48 th Street Entrance- Rev #3	8/25/2016	10/20/2016	1/3/2017	24 Months	1/3/2019
CQ033 ³ Mid-Day Storage Yard	7/18/2016	9/22/2016	12/27/2016	44 Months	5/8/2020
CH061A ⁴ , Tunnel A	6/9/2016 (p)	7/14/2016 (p)	9/1/2016 (p)	16 Months	1/2/2018 (p)
CS284, Tunnel Systems Package 2 – ESA Signal Installation (CS086)	9/6/2016	10/17/2016	12/12/2016	36 Months	12/2/2016
FHL04 ⁵ , LIRR Harold Stage 4-F/A	N/A	N/A	5/19/2016	67 Months	12/21/2021
FHL04, LIRR Harold Stage 4 – Force Account	N/A	N/A	9/30/2016	73 months	11/7/2022

¹ The PMOC notes that the PMT updated its variance report to reflect the latest changes in its IPS

² PMOC notes that CM007 actually received award and NTP on April 21, 2016. The current forecasted date for Substantial Completion of CM007, January 31, 2020, is approximately one year later than that shown in the previous update, IPS #79, of January 31, 2019.

³ CQ033 forecasted advertisement date has slipped over a month, from June 7, 2016 to July 18, 2016. CQ033 forecasted NTP date has slipped approximately 2.5 months from October 10, 2016 to December 27, 2016. CQ033 forecasted Substantial Completion has slipped approximately four months, from January 9, 2020 to May 8, 2020.

⁴ CH061A – (p) – intent to advertise approval is pending Governor’s office approval. All key dates shown above for CH061A have slipped approximately two months since the last IPS update (#79).

⁵ FHL04 – FHL04 forecasted NTP has slipped approximately 4.5 months from May 19, 2016 to September 30, 2016. It should be noted that this milestone is constrained in the IPS. FHL04 forecasted Substantial Completion has slipped from December 21, 2021 in IPS #79 to October 24, 2022 in the current update, a variance of over 10 months.

Table 2-2, below, shows important 90 day Look-Ahead milestone schedules:

Table 2-2: Critical Milestones 90 Day Look-Ahead (from ESA IPS #80)

Activity ID	Activity Name	Start	Finish	
CM014B: GCT Concourse and Facilities Fit Out				

FOIA EXEMPTION 5 U.S.C. SECTION 552(b)(4)

CM014B-MS1 To 10	CM014B Provide CS179 Access to GCT Concourse Zone 1 (CS 179 AR10A)	1-Apr-16	24-Apr-16	■
CM005: Manhattan South Structures				
CM005-1040	Milestone 4 Complete Balance of Project (Substantial Completion) - MS60 - (February 6 2016)		22-Apr-16	■
CM006: Manhattan North Structure				
CM006-MS5	CM006 Milestone #5 (GCT 4 Facility Room -460 CD from NTP (7/4/2015)		3-May-16	■
CM006-MSLL	CM006 Milestone 32 (Lower Level Tunnels & 50 th)		27-Jun-16	■
CM007: GCT Caverns				
CM007-0160	CM007 Notice of Award		08-Apr-16	■
CM007-1020	CM007 NTP	11-Apr-16		■
CQ032: Plaza Substation & Queens Structures				
CQ032-MS11	Milestone 311 Complete YLT Duct bench work between Station 1181+89—1225+10		12-May-16	■
CQ033: Mid-Day Storage Yard Facility				
CQ033-PI310	GEC 100% Design Resubmission		17-Jun-16	■

Project Critical Path:



Activity Name	Original Duration	Start	Finish
CM007 Contract	1381	15-Sep-15 A	26-Jun-19
CS179 IST Integrated System Testing	271	27-Jun-19	23-Mar-20

Activity Name	Original Duration	Start	Finish
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Train Contract Staffs LIRR Prior to LIRR 3 Months Period	31	15-Oct-20	11-Nov-20
LIRR Final 3 Months Period	93	12-Nov-20	12-Feb-21
TARGET DATE - Begin LIRR Revenue Service To GCT	0		12-Feb-21
Target Revenue Service Date			12-Feb-21
FHL02 Contract	1285	29-Jan-15 A	5-Aug-18
CH057D Contract	9	11-Aug-18	19-Aug-18
FHL/A03 Contract	29	25-Aug-18	22-Sep-18
FHL04 Contract	43	22-Sep-18	3-Nov-18
FHL02 Contract	73	5-Nov-18	16-Jan-19
CH058 Contract	572	17-Jan-19	10-Aug-20
FHL04 Contract	62	11-Aug-20	11-Oct-20
ESA Project Substantial Completion	0		12-Oct-20
Train Contract Staffs LIRR prior to LIRR 3 Months Period	31	13-Oct-20	12-Nov-20
LIRR Final 3 Months Period	90	13-Nov-20	10-Feb-21
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Late Revenue Service Date			12-Dec-22

The PMT has reported that the critical path of the project has shifted from Manhattan Systems work to Harold work over this update period. The PMOC has noted in previous reports that the Harold work critical path, while previously behind the Manhattan Systems critical path, was experiencing impacts and could potentially overtake the Manhattan Systems path and become the overall program's critical path. This has occurred in IPS #80 and the PMOC is concerned with the continuing impacts to the Harold critical path of work. IPS #80 shows that the Target Revenue Service Date is affected by the Manhattan Systems work and remains at February 12, 2021. The Late Revenue Service Date of December 12, 2022, is now affected by the Harold path of work in IPS #80. The PMOC sees that any additional delays to any work along the Harold critical path of work will push the Late Revenue Service Date.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

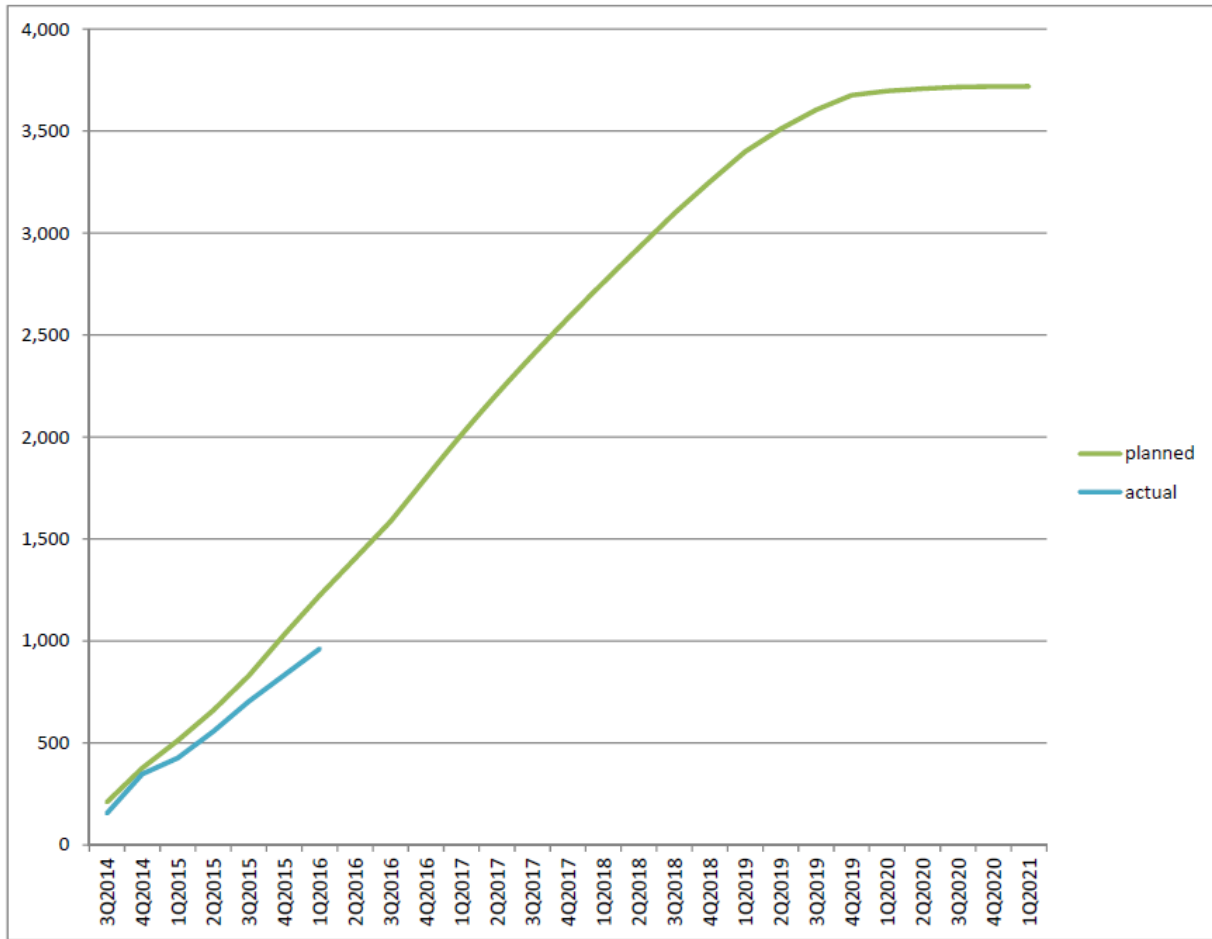
3.0 COST DATA

Funding: The MTA Board has approved the \$29.5 billion Capital Plan of April 2016. \$2.6 billion of the Capital Plan is earmarked for the completion of ESA. Near term funding of \$1.066 billion through June 2016 has been made available in order to award CM007, VQ033, CS179 Options scheduled to expire before June 2016, OCIP, and other needs. In order to balance available funding, new awards are deferred, including CQ033, Tunnel A (CH061A), VH051C, VH052, Harold Stage 4, a portion of CS179 Option 2B, etc. By the end of May 2016 funding had been formally appropriated to the ESA project.

- The NYS legislature approved the 2015-19 Capital Plan in early April 2016.
- On April 24, 2016, the MTA board voted to amend the budget.
- MTA submitted the amended budget to Capital Program Review Board (CPRB).
- The CPRB approved MTA's budget on May 24, 2016.

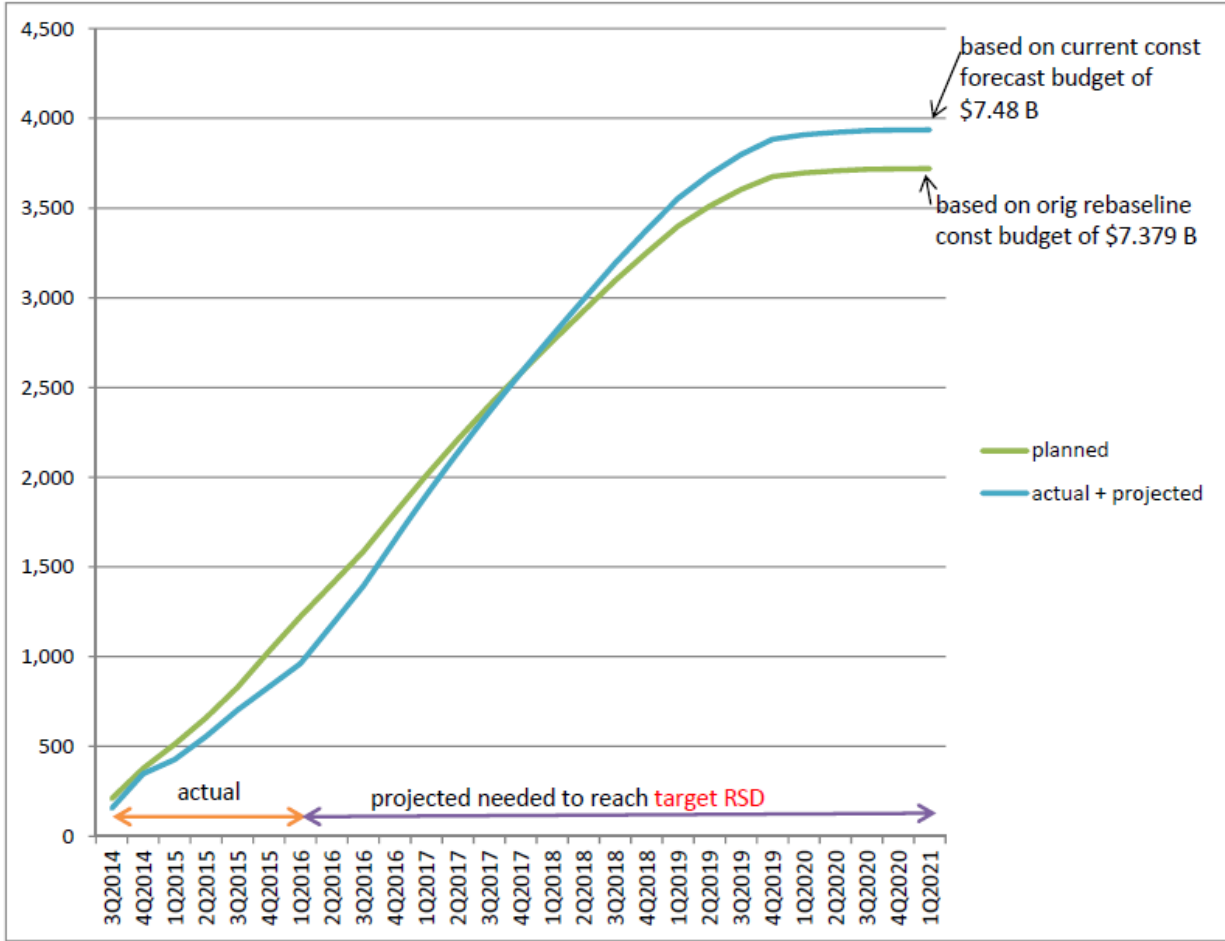
Budget/Cost: The ESA 1Q2016 Progress Report (April 1 Data date) shows that the actual total project progress was 62.1% versus 63.7% planned against the Current Baseline Budget (CBB) of \$10.178 billion. Total actual construction progress was 62.3% versus 64.6% planned based on the total invoiced amount of construction (details of project budget and expenditures are shown in Appendix B, Tables 2 and 3). A PMOC review of the ESA Planned Cash Flow Chart shows that it is based on a February 2021 completion date. This now aligns with the Early Revenue Service date resulting from the March 1 data date of the IPS. Based on the cash flow report from ESA, as of the end of the 1Q2016, construction expenditures are 91.5% of what was planned since the re-baselining in 2014. As a result of its inability to achieve the planned construction spending, and the increase in construction budget from the 2014 re-baselining to current, MTACC is no longer striving to achieve the Early Revenue Service Date. This spending trend and future projections are shown in Tables 3-1 and 3-2 below.

Table 3-1 Planned vs Actual Construction Cash Flow



Construction Cash Flow at 1Q 2016 – Starting at 2014 Rebaseline

Table 3-2 Actual & Projected Construction Cash Flow to Early RSD



Construction Cash Flow - Starting at 2014 Rebaseline

Several significant items were discussed at the Monthly Cost Review meetings of April 14, 2016 and May 25, 2016. ESA indicated that Force Account forecasts are currently being finalized, and will be presented to FTA and PMOC shortly. It was stated that only the near term FA estimates are included in the current forecast of \$818.9 million (this amount has remained relatively consistent since November 2015). They had previously indicated that the Force Account Forecast study would reveal that budget adjustments on the order of \$50 million will be required for Access & Protection and Amtrak/LIRR Direct Stage 2 work. In addition, their ongoing Harold Schedule Status update will likely result in the transfer of work from Amtrak FA to 3rd Party contracts.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Change Orders/Budget Adjustments: The PMT reported that, during 1Q2016, twenty (20) construction Change Orders greater than \$100,000 were executed for a total of \$38.9 million. These include construction, GEC design, and Consultant Construction Management modification.

4.0 RISK MANAGEMENT

The ESA Risk Manager has arranged for a comprehensive risk review of the CQ033 contract for the Mid-Day Storage Yard. A series of preliminary meetings to cover the CQ033 scope, schedule, and budget were held in early May 2016. The facilitated risk workshop was conducted over a two day period on May 10 and 11, 2016. The draft risk report is expected to be submitted by the facilitator in early June 2016.

For well over two years, the PMOC has identified funding availability to be a significant risk on the ESA project. Funding uncertainty has resulted in the PMT's delay of the CM007 contract award until early 2016 due to budget constraints and the restructuring of the CS179 contract by splitting it into a base contract with seven options, based on access restraints imposed by the CM006, CM007, and CM014B packages, which will significantly increase the interface risks. The PMOC did note, however, that MTA had been successful in arranging temporary funding to continue work through 2Q2016. In late October 2015, the MTA presented a \$29 billion program to its Board for the 2015 – 2019 funding cycle. An agreement was subsequently reached with the Governor regarding the 2015-2019 Capital Plan. By the end of May 2016 funding had been formally appropriated to the ESA project:

- The NYS legislature approved the 2015-19 Capital Plan in early April 2016.
- On April 24, 2016, the MTA board voted to amend the budget.
- MTA submitted the amended budget to the Capital Program Review Board (CPRB) on April 26, 2016.

- The CPRB approved MTA’s budget on May 24, 2016.

Based on long standing issues and concerns regarding Amtrak’s ability to provide sufficient force account support to the ESA project, especially Electric Traction (ET) resources, ESA completed a Harold schedule re-sequencing in December 2014, also known as “ESA First,” that advances work elements required for the new LIRR service to GCT and delays some of the FRA funded High Speed Rail (HSR) work beyond 2017. Railroad construction work prior to development of the “ESA First” schedule was also falling behind schedule due to the overall delays to much of the Harold work. MTA continues to work with both the FTA and the FRA to resolve funding drawdown issues.

The PMOC has continuing concerns regarding the impact to the ESA Harold work due to the Amtrak program to harden ERT Lines 3 and 4 in preparation for extended outages for ERT Lines 1 and 2 to complete Hurricane Sandy damage-related reconstruction work, earlier scheduled to commence in 2018, but now planned for 2019. Amtrak has not yet provided any specific details about the ERT Lines 3 and 4 hardening work, but there is concern, shared by both the PMOC and MTACC, that significant Amtrak Force Account resources will be needed to support the hardening work, which could further reduce the Amtrak resources available to support the ESA Harold Re-Sequencing Plan. There is also concern that track outages required for the hardening work may conflict with ESA needs to support the planned Harold work, including the High Speed Rail scope, by 2020. The PMOC does note, however, that Amtrak’s decision about ERT Line 2 is not expected to directly impact the completion of the Harold work needed to commence LIRR service into GCT.

With regard to the implementation of the “ESA First” Harold Re-sequencing of late 2014, the PMOC notes that through 2015 and into 2016, Amtrak has not been able to provide even the reduced level of force account resources that was planned in support of the schedule. [REDACTED]

[REDACTED] Since late 2015, ESA has been working on a comprehensive study to identify and evaluate the reasons for inadequate level of force account resources required to support the Harold schedule and to make recommendations to revise the schedule and to plan for the increasing force account costs. Based on the outcome of the study, the revised project schedule now indicates that the Harold critical path has now become the ESA program critical path and leads the secondary Manhattan/Systems critical path by three months. Cost outcomes are still being evaluated.

5.0 ELPEP COMPLIANCE SUMMARY

The current status of each of the remaining main ELPEP components is summarized as follows:

- **Technical Capacity and Capability (TCC):** The FTA requested MTACC to update its TCC Plan in response to the FTA/PMOC comments that were generated in November 2013 as a result of significant changes in key ESA upper management level positions. The MTACC submitted its revised Technical Capacity and Capability Plan (ESA and SAS) on April 13, 2015. The PMOC returned comments to the FTA on May 7, 2015. The MTACC submitted a revised TCC Plan in response to FTA/PMOC comments on June 12, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and recommended a meeting with MTACC to resolve remaining issues.

The FTA subsequently provided MTACC with the evaluation. MTACC responded with a reply on September 24, 2015.

- **Continuing ELPEP Compliance:** The following ELPEP components continue to need improvement: Management Decision; Design Development; Change Control Committee (CCC) Process and Results; Stakeholder Management; Issues Management; Procurement; Timely Decision Making; and Risk-Informed Decision Making. The PMOC had been particularly concerned about the effectiveness of the risk management process since June 2015 due to the staffing change at that time and the lack of continuity of leadership because the ESA Risk Manager position was vacant from October 2015 through early January 2016. The new Risk Manager held a long overdue program level risk meeting with the PMOC on March 14, 2016. He arranged and conducted the facilitated risk review of Contract CQ033, Mid-Day Storage Yard Facility, in May 2016. The PMOC anticipates seeing continued improvements in the risk management process.
- **Project Management Plan:** The PMOC completed its review and evaluation of the MTACC's revisions and responses and submitted its findings to FTA-RII in 4Q2014. The MTACC subsequently submitted a revised Rev. 10 on March 13, 2015, that included updated information on the Change Control Committee. The revised Rev. 10 of the PMP was reviewed by the PMOC against the PMOC's evaluation in 4Q2014. The PMOC continues to coordinate with MTACC, arranging working meetings with ESA chapter authors and the corresponding PMOC reviewers to resolve the remaining outstanding FTA/PMOC evaluation comments. Several working meetings have been held since June 2015 and continued through December 2015. MTACC and the PMOC are working to schedule the few remaining meetings required to complete this process.
- [REDACTED]

The PMOC notes that, since June 2013, the ESA project has continued to be non-compliant with ELPEP and is not meeting some of the more important requirements of the Schedule Management Plan (SMP) and Cost Management Plan (CMP) sub-plans to the PMP. The PMOC does note, however, progress in certain areas. The PMOC's major areas of concern include:

- [REDACTED] [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] The revised SMP was submitted in 4Q2015, and the PMOC is working to complete its review.
- [REDACTED]
[REDACTED]
[REDACTED]

The PMOC has noted some improvement in a number of areas, but more work is needed in other areas. After progressing with resolution of many PMOC comments, the PMOC met with MTACC in November 2015 to focus on the remaining issues. MTACC continues work on evaluating the PMOC’s recommendations in six areas. MTACC provided an initial draft of the revised CMP on December 15, 2015, and the PMOC is nearing completion of its review.

[REDACTED]

[REDACTED] The PMOC is working on a draft revision to the ELPEP document that reflects these agreements.

The next ELPEP Quarterly Review Meeting with the MTACC, FTA-RII, the SAS and ESA projects, and the PMOC had been scheduled for June 16, 2016.

6.0 SAFETY AND SECURITY

Table 6-1, below, shows the ESA Lost Time and Recordable injury ratios through April 30, 2016. The PMOC developed this table to demonstrate the effectiveness of ESA’s most recent safety efforts rather than its cumulative safety record, which ESA uses to report in each of its monthly reports. The PMOC believes that this provides a more accurate measure of ESA’s current safety performance than its cumulative record does.

Table 6-1: ESA 2016 Lost Time and Recordable Injury Ratios

	Lost Time Ratio	Recordable Ratio
2015 BLS Ratio (used by OSHA) (2016 BLS Ratio -used by OSHA not available)	1.80	3.20
ESA April 2016 Ratio	0.0	1.82
ESA CY2016 Ratio	0.57	2.29
ESA Reported Ratio (Cumulative since beginning of project as of March 31, 2016)	1.94	ESA does not report cumulative Recordable Injury Rates

Additionally, the ESA PMT did not report any significant security issues in its First Quarter 2016 Progress Report.

7.0 ISSUES AND RECOMMENDATIONS

Design: The PMT design management team needs to focus on achieving intermediate milestones in a timely fashion and working closely with the GEC to facilitate finalization of the scope of work for the remaining procurement and construction packages. The continued shifting of scope between packages has made finalizing design documents and drawings very challenging and time

consuming. Also, approvals from the railroads, both LIRR and Amtrak, are requiring considerably more time than expected. The PMOC recommends that the PMT engage upper level management of stake holders involved to assist in resolution of the more challenging issues. The GEC is challenged to meet the schedule requirements for review of design submittals from the CS084 and CS179 contractors. The PMT needs to address this continuing problem and to also better coordinate the associated LIRR reviews.

Procurement: The lack of stability in the contracting strategy and Contract Packaging Plan remains a concern. The scope shifting among different packages delays completion of the required design packages and makes it difficult to fully understand the impact of these changes to the overall ESA Project. The PMOC continues to recommend that the ESA PMT should make an effort to adhere to the current version of the CPP and minimize shifting scope for the remainder of the project.

Contract CS179: As noted in previous reports, the PMOC remains concerned that, Buy/Ship America compliance issues remain as significant risks to timely and successful completion of this contract. The MTA needs to decide if it intends to request Buy/Ship America waivers for the potential non-compliance issues and proceed accordingly so as not to adversely impact the CS179 and overall ESA project schedule.

A fully tested solution to the numerous water infiltration issues in the equipment rooms remains a concern to the PMOC. To avoid Contract CS179 schedule slippage, proposed mitigation solutions need to be quickly progressed so that these equipment rooms can be turned over to the CS179 contractor as soon as possible.

The ESA CS179 PMT needs to ensure that the contractor has enough information related to LIRR operations to ensure that the contractor's proposed Control System designs meet the contract requirements and the operational requirements of the specific LIRR user groups. Proposing Control System designs that do not meet the expectations or the operational requirements of the various LIRR user groups could result in considerable delays in design completion. The PMOC continues to recommend that MTACC coordinate meetings between the contractor, MTACC, and the LIRR user groups to ensure that all the parties are in agreement on the operational requirements, user expectations, and contractual obligations of the various System designs.

Contract CS084: The PMOC continues to encourage the ESA CS084 CM to expedite resolution of the SCADA system requirements so that the final designs for the substation facilities can be approved. This will enable the contractor to begin the substation equipment procurement process and the design of the remaining substations.

The PMOC remains concerned about the numerous water infiltration issues in the equipment rooms and the solutions that need to be implemented to provide permanent mitigation of the water infiltration in rooms with electronic equipment. While the GEC has now proposed a possible mitigation methodology, its implementation has yet to begin and its ability to successfully mitigate the water infiltration problem can only be validated after the mitigation work is complete.

Contract CM006: Last month, ESA reported that the contract schedule is being replaced by a new schedule. ESA needs to complete execution of the contract modification so that a realistic schedule is available to track construction progress.

Contract CM007: The CM007 contract was awarded on April 11, 2016, with the Notice to Proceed as the same date. Delay to the program critical path at that time was approximately 3.5 months. Because the current project critical path has shifted to the remaining work in Harold Interlocking, the PMOC will need to review schedule impacts of the delayed award and NTP for the CM007 contract along the secondary critical path through the Manhattan/Systems work. The PMOC will be able to evaluate the impacts during its review of the IPS update for May 2016 and will report its finding in its next monthly report.

Project Funding: As stated in the Risk Management section above, the PMOC believes that the timing and availability of funding had presented a significant schedule risk to the project for almost two years. The PMOC notes that MTA had been successful in arranging temporary funding to continue work through May 2016. With CPRB approval of the 2015-2019 Capital Plan in May 2016, project funding availability is no longer a risk for the remaining duration of the current Capital Plan.

[REDACTED]

Project Schedule: The PMOC is concerned that, as stated by the PMT, Amtrak is not providing enough resources to support the ESA's scheduled critical work. The PMT has stated that they will continue to meet with Amtrak and has obtained clearances to transfer Amtrak work to 3rd parties to try to partially mitigate schedule delays. The PMOC was previously concerned that Harold Interlocking may already have been the Project Critical Path prior to it being reported as such by the PMT. As noted in Section 2.0 above, IPS #80 does indeed show that Harold is now the controlling critical path for the Late RSD, as tracked in the IPS. [REDACTED]

[REDACTED]

Risk Management: In the PMOC's opinion, funding availability had been a significant risk to the ESA project for almost two years through April 2016. Funding uncertainty has already resulted in the following:

- PMT's delay of the CM007 contract award until 2016 due to budget constraints;
- The restructuring of the CS179 contract by splitting it into a base contract with seven options, based predominately on access restraints imposed by the CM006, CM007,

- and CM014B packages. This will significantly increase the construction contract interface risks; and,
- With CPRB approval of the 2015-2019 Capital Plan in May 2016, project funding availability is no longer a risk.

This segmentation of construction packages has created multiple inter-contract interfaces and milestones. In the PMOC's opinion, the probability of successfully achieving all of them is low, and leads to the possibility of a ripple effect of delays and coordination difficulties between contracts. There is very limited opportunity, at best, for the contractors to make up any of the time lost to interface delays due to work site time and access constraints. Should delays start to accumulate, recovery will likely not be possible. Managing inter-contract handoffs and interfaces will be challenging and represents significant MTACC-retained risks. The PMOC does recognize the PMT's efforts to mitigate some of the potential cost exposure by negotiating adjustments to schedule constraints across the four ESA contracts currently held by the same contractor (CM006, CM007, CS179, and CQ032). These mitigations, however, are not necessarily effective in solving the productivity challenges that result from the CM007 schedule that the PMOC considers very aggressive. Funding was not in place to fully exercise the three options in the CS 179 contract package that were scheduled for November 6, 2015, and another option scheduled in January 2016. As noted in an earlier PMOC report, the Options exercised in November 2015, as scheduled, were Option Nos. 2A, 6, and 7 and the Option scheduled to be exercised in January 2016 was Option No. 3, which was split into Options 3A and 3B that have since been exercised. In the original baseline schedule, Access Restraints were correlated to the contract options; however, a review of the changes made as a result of Contract Modification No. 18 is required to determine to what extent these activities are still interconnected.

The PMOC remains concerned about the coordination risk retained by MTACC on the completion of the work in Manhattan, especially construction and testing interface management for the systems work. When combined with the extensive scope re-configuration changes associated with the Harold Interlocking work, the PMOC believes that this may create significant changes to the overall project risk profile.

The PMOC considers the major risks for the Eastside Access Program to be:

- Program Funding (resolved in May 2016);
- Successful execution of dozens of hand-off interfaces across multiple contracts;
- Contractor access and work area coordination in Manhattan;
- Duration of integrated systems testing;
- Continued availability of adequate Amtrak and LIRR force account resources [increasing risk trend noted in 3Q through 4Q2015 and into 2Q2016]; and,
- Continued availability of required track outages in Harold Interlocking.

The PMOC notes that, although MTACC has actively engaged Amtrak to develop some specific mitigations for the last two risks and continues to work on strategies for mitigating many of the other identified risks, continued shortcomings in provision of adequate force account resources have adversely impacted the current Harold schedule and have caused the remaining Harold work to become the ESA program schedule critical path. The developments made known to the FTA and the PMOC during April 2016 with regard to the remaining work in the Harold Interlocking

are certainly not encouraging. Many external stakeholder issues with Amtrak and LIRR will remain beyond MTACC's direct control, however, and are likely to complicate development and acceptance of the specific problem resolutions essential to completion of the project.

The PMOC notes that ESA has been unable to develop a sustainable schedule for the remaining Harold Interlocking work that can be achieved despite the most recent full re-plans in 2013-2014 and again in 2015 as the "ESA First" Harold Re-Sequencing. Based on insufficient support from Amtrak during 2015 and into 2016, ESA has undertaken another Harold re-plan effort that reflects the continued deterioration of Amtrak support with regard to force account resources and track outages for ESA work. The results of the study, along with the recent Amtrak decision about the ERT tunnel program, do not provide any basis for optimism going forward, especially considering that the situation has deteriorated so quickly since the current baseline was established less than 2 years ago:

- [REDACTED]
- [REDACTED]
- The Harold critical path has now become the ESA Program Critical Path and leads by three months, the secondary Manhattan/Systems critical path; and,
- Amtrak's decision to take ERT Line 2 out of service first for an extended outage of one year or more will not support the current ESA planning to complete all of the remaining Harold work, including the High Speed Rail work by 2020.

APPENDIX A - ACRONYMS

AFI	Allowance for Indeterminates
ARRA	American Recovery and Reinvestment Act
BLS	Bureau of Labor Statistics
BOH	Back of House
BAFO	Best and Final Offer
C&S	Communication and Signals
CCC	Change Control Committee
CCM	Consultant Construction Manager
CIL	Central Instrument Location
CLSM	Controlled Low Strength Material
CM	ESA Construction Manager assigned to each contract
CMP	Cost Management Plan
CMU	Concrete Masonry Unit
ConEd	Consolidate Edison Company
CPOC	Capital Program Oversight Committee
CPP	Contract Packaging Plan
CPR	Contractor Proposal Request
CPRB	Capital Program Review Board
EAC	Estimate at Completion
ELPEP	Enterprise Level Project Execution Plan
ERT	East River Tunnel
ESA	East Side Access
ET	Electric Traction
FA	Force Account
FDR	Final Design Review
FFGA	Full Funding Grant Agreement
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GCT	Grand Central Terminal
GEC	General Engineering Consultant
HSR	High Speed Rail

IEC	Independent Engineering Consultant (to MTA)
IFB	Invitation for Bid
IPS	Integrated Project Schedule
IST	Integrated System Testing
LIRR	Long Island Rail Road
MOD	Contract Modification
MNR	Metro-North Railroad
MTA	Metropolitan Transportation Authority
MTACC	Metropolitan Transportation Authority Capital Construction
N/A	Not Applicable
NTP	Notice to Proceed
NYAR	New York and Atlantic Railroad
NYCT	New York City Transit
PAC	Pneumatically Applied Concrete
PDR	Preliminary Design Review
PEP	Project Execution Plan
PMOC	Project Management Oversight Contractor (Urban Engineers)
PMP	Project Management Plan
PMT	ESA Project Management Team
PQM	Project Quality Manual
PVS	Plaza Vent Structure
PWE	Project Working Estimate
QA	Quality Assurance
RAMP	Real Estate Acquisition Management Plan
RFI	Request for Information
RFP	Request for Proposal
RMP	Risk Management Plan
ROD	Revenue Operations Date
ROW	Right of Way
RPR	Relocated Primary Route
RSD	Revenue Service Date
RTU	Remote Terminal Unit

SC	Substantial Completion
SCADA	Supervisory Control and Data Acquisition
SCC	Standard Cost Category
SDR	Second Design Review
SMP	Schedule Management Plan
SMU	Snow Melter Unit
SOE	Support of Excavation
SSMP	Safety and Security Management Plan
SWO	Stop Work Order
TCC	Technical Capacity and Capability
TELP	Temporary Eastbound LIRR Passenger
WBY	Westbound Bypass Tunnel
YSB	Yard Services Building

APPENDIX B – TABLES

Table 1: Summary of Critical Dates

	FFGA	Forecast (F) Completion, Actual (A) Start	
		Grantee*	PMOC**
Begin Construction	September 2001	September 2001(A)	September 2001(A)
Construction Complete	December 2013	December 2022 (F)	September 2023(F)**
Revenue Service	December 2013	December 2022 (F)	September 2023 (F)

* Source – Grantee forecast Revenue Operations Date per information presented to the MTA CPOC in June 2014.

**Source –Based on PMOC 2014 schedule trending analysis representing a medium degree of mitigation.

Table 2: Project Budget/Cost Table

	FFGA			MTA's Current Baseline Budget CBB		Expenditures	
	(Millions)	(% of Grand Total Cost)	Obligated	(Millions)	(% of Grand Total Cost)	(Millions)	(% of CBB)
Grand Total Cost	\$7,386	100.0%	\$4,724	\$11,214.0	100.00%	\$6,805.7	60.69%
Financing Cost	\$1,036	14.0%	\$617	\$1,036.0	9.24%	\$617.6	59.61%
Total Project Cost	\$6,350	86.0%	\$4,107	\$10,178.0	90.76%	\$6,188.1	60.80%
Federal Share	\$2,683	36.3%	\$1,148	\$2,699.0	24.07%	\$2,023.9	74.99%
5309 New Starts Share	\$2,632	35.6%	\$1,098	\$2,436.6	21.73%	\$1,761.8	72.31%
Non New Starts Grants	\$51	0.7%	\$50	\$67.0	0.60%	\$66.7	99.55%
ARRA	0	0.0%	0	\$195.4	1.74%	\$195.4	100.0%
Local Share	\$3,667	49.6%	\$2,959	\$7,479.0	66.69%	\$4,164.2	55.68%

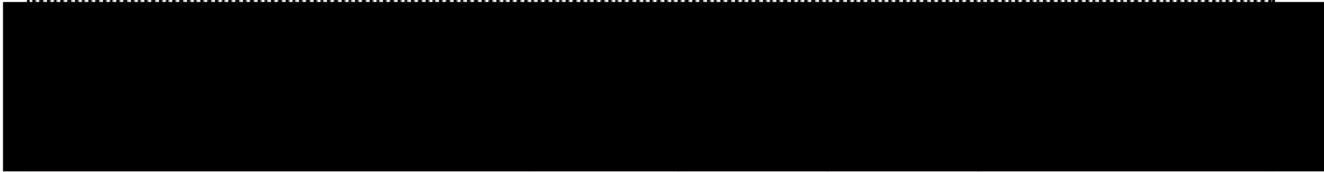
Table 3: Project Budget and Invoices as of March 31, 2016

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (March 2016)	Actual Awards (March 2016)	Paid to Date (March 2016)	Actual % Budget Paid
Construction	\$7,379,296,706	\$7,433,222,051	\$6,323,534,115	\$4,506,987,089	60.60%
Soft Costs Subtotal	\$2,798,474,304	\$2,740,548,959	\$1,729,595,328	\$1,679,768,268	61.29%
Engineering	\$720,615,810	\$722,491,293	\$683,769,656	\$664,849,171	92.02%
OCIP	\$282,613,620	\$282,613,620	\$214,470,653	\$214,047,299	75.74%
Project Mgmt.	\$972,168,644	\$972,168,644	\$714,993,386	\$686,252,138	70.59%
Real Estate	\$182,076,230	\$179,080,316	\$116,361,633	\$114,619,660	64.00%
Rolling Stock	\$202,000,000	\$202,000,000	\$0	\$0	0.00%

Note: ESA is currently carrying the Rolling Stock Reserve as an off-line cost, not in the Budget.

Table 4: Comparison of Standard Cost Categories: FFGA vs. CBB

Standard Cost Category (SCC) No.	FFGA SCC baseline (YOE \$) M	June, 2014 Re-Plan (YOE \$)	December 2015 SSC (YOE \$) M	January 2016 SSC (YOE \$) M	February 2016 SSC (YOE \$) M	March 2016 SSC (YOE \$) M	CBB Variance from FFGA %
10	1,989	3,405	3,420	3,419	3,419	3,443	73.10%
20	1,169	2,238	2338	2,338	2,338	2,314	97.95%
30	356	474	472	472	472	472	32.58%
40	205	611	593	593	593	594	189.76%
50	619	606	566	566	566	569	-8.08%
60	165	220	218	217	217	216	30.91%
70	957	210	210	210	210	210	-78.06%
80	1,184	1,975	1,976	1,977	1,977	1,977	66.98%



100	1,036	1,036	1,036	1,036	1,036	1,036	0.00%
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Table 5: Quarterly ESA Planned Cash Flow- Actuals to Date and Actuals Remaining (as of 1Q2016)

Planned vs Actual Cash Flow at End of 1st Quarter 2016						
Quarter/year	Construction \$(000)	Engineering \$(000)	OCIP \$(000)	Project Mgmt. \$(000)	Real Estate \$(000)	Rolling Stock \$(000)
Paid To Date	3,660,194,771	646,377,892	155,604,955	580,041,291	112,634,547	0
Remaining	3,719,144,273	74,237,918	127,008,665	392,127,353	69,441,683	202,000,000
3Q2014	209,340,620	-3,311,163	4,774,951	16,667,454	0	0
4Q2014	168,280,817	-3,290,689	4,774,951	16,667,454	75,948	0
1Q2015	134,568,200	-3,183,384	4,619,246	16,123,950	4,506,241	0
2Q2015	147,357,357	-3,290,689	4,774,951	16,667,454	4,658,137	0
3Q2015	169,688,509	-3,290,689	4,774,951	16,667,454	4,658,137	0
4Q2015	201,239,698	-3,290,689	4,774,951	16,667,454	4,658,137	0
1Q2016	193,275,933	-3,219,153	4,671,147	16,305,118	4,556,873	0
Remaining Planned	2,495,393,139	97,114,374	93,843,517	276,361,015	46,328,210	202,000,000
Remaining Actual	2,928,921,542	57,642,122	68,566,321	285,916,506	64,387,785	202,000,000
2Q2016	180,854,738	-3,290,689	4,774,951	16,667,454	4,658,137	8,666,545
3Q2016	181,988,455	-1,983,850	4,774,951	16,652,320	4,658,137	13,070,855
4Q2016	214,173,807	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
1Q2017	210,556,624	6,509,009	4,619,246	15,450,479	4,506,241	12,644,631
2Q2017	199,737,103	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
3Q2017	189,382,506	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
4Q2017	182,084,699	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
1Q2018	174,210,593	6,509,009	4,619,246	15,450,479	4,506,241	12,644,631
2Q2018	170,524,739	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
3Q2018	168,497,619	6,728,414	4,774,951	15,971,281	4,658,137	14,014,767
4Q2018	155,245,094	6,728,414	4,774,951	15,971,281	50,632	14,014,767
1Q2019	148,441,548	6,509,009	4,619,246	15,450,479	0	13,557,764
2Q2019	110,893,994	6,728,414	4,774,951	15,971,281	0	14,014,767
3Q2019	93,559,944	6,728,414	4,774,951	15,971,281	0	14,014,767
4Q2019	71,649,848	6,728,414	4,774,951	15,971,281	0	14,014,767
1Q2020	20,704,406	6,582,144	4,671,147	15,624,080	0	5,043,553
2Q2020	11,682,057	6,728,414	4,774,951	15,971,281	0	943,912
3Q2020	7,573,078	2,267,183	4,947,825	5,381,627	0	0
4Q2020	2,750,374	0	5,035,679	0	0	0
1Q2021	881,913	0	3,256,771	0	0	0
2Q2021	0	0	0	0	0	0
3Q2021	0	0	0	0	0	0
4Q2021	0	0	0	0	0	0

**Table 6: MTA ESA Project Summary by FTA Standardized Cost Categories
2014 Re-plan (\$ in Thousands)**

Standardized Cost Category	FFGA	May 2012 Re-Baseline	June 2014 Re-Plan	Awarded Value March 2016	Paid To Date March 2016
10- Guideway & Track Elements	\$1,988,742	\$2,943,165	\$3,405,463	\$3,030,382	\$2,297,078
20- Stations, Stops, Terminals, Intermodal	\$1,168,655	\$1,513,998	\$2,238,235	\$2,144,451	\$1,204,284
30- Support Facilities, Yards, Shops, Admin Buildings	\$356,264	\$384,583	\$474,177	\$228,024	\$207,026
40- Site Works and Special Conditions	\$205,105	\$491,341	\$610,570	\$447,124	\$454,991
50- Systems	\$619,343	\$698,296	\$605,592	\$430,046	\$302,052
60-ROW, Land, Existing Improvements	\$165,280	\$203,639	\$219,397	\$153,683	\$152,014
70- Vehicles	\$493,982	\$674,372	\$209,938	\$7,838	\$5,549
80- Professional Services	\$1,184,000	\$1,648,606	\$1,975,398	\$1,613,234	\$1,565,149
Estimated Financing Cost	\$1,036,100	\$1,116,000	\$1,036,000	\$617,607	\$617,607

Table 7: ESA Core Accountability Items

Project Status:		Original at FFGA	Current*	ELPEP **
Cost	Cost Estimate	\$7.368 billion	\$10.178 billion	\$8.119 billion
██████████	██████████	██████████	██████████	██████████
	██████████	██████████	██████████	██████████
	██████████	██████████	██████████	██████████
	██████████	██████████	██████████	██████████
Schedule	RSD	December 31, 2013	December 2022	April 30, 2018
Total Project Percent Complete	Based on Invoiced Amount	62.1% (ESA Figure)		
	Based on Earned Value ±	91.6% (PMOC Calculation)		
Project Performance Rate(Since 2014 ESA "Re-Plan")				
Major Issue	Status	Comments		
Project Schedule	██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████ ██████████	<p>The PMOC remains concerned about recent developments with regard to the remaining work in Harold Interlocking.</p> <ul style="list-style-type: none"> ██████████ ██████████ ██████████ ██████████ Amtrak's decision to take ERT Line 2 out of service first for an extended outage of one year or more will not support the current ESA planning to complete all of the remaining Harold work, including the High Speed Rail work, by 2020. 		
Harold Re-planning	Based on continuing issues with inadequate railroad force account support, ESA completed a Harold schedule re-sequencing in December 2014, also known as "ESA First", that advances work elements required for the new LIRR service to GCT and delays the FRA funded High Speed Rail Work beyond 2017. The 2015 Harold Re-Sequenced schedule advanced completion of ESA elements but did not achieve goals due to insufficient Amtrak force account support. Schedule has again been re-evaluated and the ESA Program Critical Path now passes through the remaining work in the Harold Interlocking.	Work on Harold Interlocking is subject to influences outside of the control of ESA. Continuing issues with the level of Amtrak force account support, currently providing only 60% of required resources, to support the "ESA First" schedule, has further delayed completion of the Harold Interlocking work and has forced it onto the ESA Program Critical Path.		

*Current Budget was approved by MTA CPOC in June 2014.

** 2010 Enterprise Level Project Execution Plan (ELPEP) reflecting medium level of risk mitigation, excluding financing cost of \$1,116 million. This is currently being re-evaluated.