

PMOC COMPREHENSIVE MONTHLY REPORT

East Side Access (MTACC-ESA) Project
Metropolitan Transportation Authority
New York, New York

Report Period June 1 to June 30, 2016



PMOC Contract No. DTFT6014D00017

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

Urban Engineers of New York, D.P.C., 2 Penn Plaza, Suite 1103, New York, NY 10121

PMOC Lead: E. Williamson, 212-736-9100; ejwilliamson@urbanengineers.com

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

TABLE OF CONTENTS

EAST SIDE ACCESS PROJECT (ESA)

THIRD PARTY DISCLAIMER.....	1
REPORT FORMAT AND FOCUS.....	1
MONITORING REPORT	1
EXECUTIVE SUMMARY	1
ELPEP COMPLIANCE SUMMARY.....	9
1.0 GRANTEE’S CAPABILITIES AND APPROACH	11
1.1 TECHNICAL CAPACITY AND CAPABILITY	11
1.2 PROJECT MANAGEMENT PLAN	12
1.3 PROJECT CONTROLS.....	12
1.4 FEDERAL REQUIREMENTS	13
1.5 SAFETY AND SECURITY.....	4
1.6 PROJECT QUALITY	14
1.7 STAKEHOLDER MANAGEMENT.....	2
1.8 LOCAL FUNDING	2
1.9 PROJECT RISK MONITORING AND MITIGATION	3
2.0 PROJECT SCOPE.....	4
2.1 ENGINEERING/DESIGN AND CONSTRUCTION PHASE SERVICES	4
2.2 PROCUREMENT	6
2.3 CONSTRUCTION.....	7
2.4 OPERATIONAL READINESS	29
2.5 VEHICLES.....	29
2.6 PROPERTY ACQUISITION AND REAL ESTATE.....	43
2.7 COMMUNITY RELATIONS	44
3.0 PROJECT MANAGEMENT PLAN AND SUB PLANS	45
3.1 PMP SUB-PLANS	45
3.2 PROJECT PROCEDURES	32
4.0 PROJECT SCHEDULE.....	33
4.1 INTEGRATED PROJECT SCHEDULE.....	33
4.2 180-DAY LOOK-AHEAD OF IMPORTANT ACTIVITIES	50
4.3 CRITICAL PATH ACTIVITIES	50
4.4 CS179 SYSTEMS PACKAGE 1-FACILITIES SYSTEM.....	51
4.5 FORCE ACCOUNT WORK.....	52
4.6 PROJECT SCHEDULE CONTINGENCY ANALYSIS.....	52

5.0	PROJECT COST	39
5.1	BUDGET/COST	39
5.2	PROJECT COST MANAGEMENT AND CONTROL	40
5.3	CHANGE ORDERS	57
5.4	PROJECT FUNDING	43
5.5	COST VARIANCE ANALYSIS	58
5.6	PROJECT COST CONTINGENCY	58
6.0	RISK MANAGEMENT.....	60
6.1	RISK PROCESS.....	46
6.2	RISK REGISTER	47
6.3	RISK MITIGATIONS	48
7.0	PMOC CONCERNS AND RECOMMENDATIONS	64
8.0	GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS	54

TABLES

TABLE 1: SUMMARY OF CRITICAL DATES	7
TABLE 2: PROJECT BUDGET/COST TABLE	8
TABLE 4.2: 3Q AND 4Q2016 UPCOMING CONTRACTS	50
TABLE 4.3: CS179 CONTRACTOR MILESTONE DATES	51
TABLE 5.1: COMPARISON OF STANDARD COST CATEGORIES: FFGA VS. CBB ...	54
TABLE 5.2: PLANNED, ACTUAL & PROJECTED CONSTRUCTION CASH FLOWS TO TARGET RSD.....	55
TABLE 5.3: PROJECT BUDGET AND INVOICES AS OF MAY 1, 2016	56
TABLE 5.4: ESA’S CHANGE ORDER LOG IN APRIL2016 (>\$100,000).....	57
TABLE 5.5: SUMMARY OF ESA COST CONTINGENCY.....	58
TABLE 5.6: CONTINGENCY FROM 2Q2014 THROUGH 1Q2016.....	59

APPENDICES

APPENDIX A – LIST OF ACRONYMS

APPENDIX B – PROJECT OVERVIEW AND MAP

APPENDIX C – LESSONS LEARNED

APPENDIX D – SAFETY AND SECURITY CHECKLIST

APPENDIX E – ON-SITE PICTURES

APPENDIX F – COST AND SCHEDULE ANALYSIS TABLES

APPENDIX G – POTENTIAL “BUY AMERICA” STATUS SUMMARY

APPENDIX H- ESA CORE ACCOUNTABILITY ITEMS
APPENDIX I – AMTRAK REMAINING ESA ELECTRIC TRACTION
CONSTRUCTION

THIRD PARTY DISCLAIMER

This report and all subsidiary reports are prepared solely for the Federal Transit Administration (FTA). This report should not be relied upon by any party, except FTA or the project sponsor, in accordance with the purposes as described below:

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 and quality 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 May 1, 2016.

MONITORING REPORT

EXECUTIVE SUMMARY

Please note there are several sections contained in this draft report that will be updated for the final report.

1. PROJECT DESCRIPTION

The East River tunnels in Manhattan are at capacity. The ESA project is anticipated to improve LIRR tunnel capacity constraints and enable the growth of the overall system. The project comprises a 3.5 mile commuter rail extension of the Long Island Rail Road (LIRR) service from Sunnyside, Queens, to Grand Central Terminal (GCT), Manhattan, utilizing the existing 63rd St. Tunnel under the East River and new tunnels in Manhattan and Queens, including new power and ventilation facilities. The project includes a new eight track terminal constructed below the existing GCT and a new surface rail yard in Queens for daytime train storage. Ridership forecast is 162,000 daily riders (27,300 new riders) in 2020. The project will provide increased capacity for the commuter rail lines of the LIRR and direct access between suburban Long Island and Queens and a new passenger terminal in Grand Central Terminal (GCT) in east Midtown Manhattan, in addition to the LIRR's current Manhattan connection at Penn Station.

2. CHANGES DURING 2nd Quarter 2016

a. Engineering/Design Progress

As of the end of April 2016 (May 1, 2016 data date), MTACC reported that the overall Engineering effort is 99.0% complete, based on Earned Value for Design Deliverables. Its Cost Report shows 92.2% of the overall EIS & Engineering category as invoiced and 92.2% of the budgeted section titled “Design” as having been invoiced.

b. New Contract Procurements

Seven technical/schedule proposals for Contract CM007, GCT Station Caverns and Track, were submitted on September 15, 2015. Seven cost proposals were submitted on October 27, 2015. Following completion of presentations by the three qualified proposers in January 2016 and negotiations with the apparent low bidder, the contract was approved by the MTA Board on January 27, 2016. The contract was awarded on April 11, 2016, with the Notice-to-Proceed on the same date.

c. Construction Progress

The Project Management Team (PMT) reported in its April 2016 Monthly Progress Report that total construction progress reached 62.8% complete, versus 65.1% planned; the Cost Report also shows 62.8% of construction as having been invoiced.

d. Continuing and Unresolved Issues

The PMOC had previously noted concerns about both the delay in the award and Notice to Proceed for Contract CM007, GCT Station Caverns and Track. Contract CM007 was awarded on April 11, 2016 with the Notice to Proceed as the same date. Delay to the Manhattan/Systems critical path was approximately 3.5 months.

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 2016 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 earlier in 2016, 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 State of New York 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.

[REDACTED]

With regard to the “ESA First” Harold Re-sequencing Plan developed in December 2014 and implemented in 2015, the PMOC notes that the ESA PMT contends that Amtrak has not been able

to provide even the reduced level of force account resources that had been planned in support of the ESA schedule. [REDACTED]

[REDACTED] ESA is nearing completion of a comprehensive study to identify and evaluate the reasons for this continuing problem and to make recommendations with regard to a revised basis for planning and scheduling the remaining work in the Harold Interlocking and a revised cost forecast. The schedule analysis and re-planning were completed and the results have been incorporated into the ESA Integrated Project Schedule (IPS). 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 and are expected to be available in July 2016.

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 provided any specific details about the ERT Lines 3 and 4 hardening work, but there is concern that significant Amtrak force account resources will be needed to support the hardening work starting in 2016 and continuing through 2019 that could further reduce the Amtrak resources available to support the revised ESA Harold Re-Sequencing Plan that has become the ESA program critical path. 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. Delays in completing the planned Harold work for LIRR service to GCT may result in pushing back essential ESA work into the timeframe for Amtrak's extended outages for ERT Lines 1 and 2. The PMOC does note, however, that Amtrak's decision about re-constructing ERT Line 2 first is not expected to directly impact the completion of the Harold work needed to commence LIRR service into GCT. No additional details, updates, or commitments regarding these issues were available as of June 30, 2016.

e. New Cost and Schedule Issues

[REDACTED]

[REDACTED] The forecast must, therefore, be considered as optimistic. The approval of the 2015 – 2019 Capital Plan has eliminated the cost uncertainty associated with funding interruptions, at least in the near term.

ESA's Integrated Project Schedule Update #80 report stated that the PMT would no longer track the Early Revenue Service Date (RSD), as the project is now forecasted to complete beyond that date. The PMT will continue to report the forecasted dates for Target and Late RSDs. As of IPS # 81 (Data Date May 1, 2016), the IPS maintains the Target RSD of February 23, 2021, and Late RSD of December 13, 2022. The PMOC is also concerned about the pace of Force Account work and has started tracking important milestones related to this work. Due to the limited resources of

Amtrak and LIRR personnel, Force Account work may become a limiting factor that could impact the program's schedule.

3. PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

a. Grantee Technical Capacity and Capability

The PMOC has concerns regarding the ability of the GEC and LIRR to support the reviews for systems design submittals by the CS179, Facilities Systems, contractor. In addition, the PMOC is concerned about the inadequate staffing levels for the project Quality staff. A more detailed discussion of the Sponsor's Technical Capacity and Capability can be found in Sections 1.1a and 1.1b below:

b. Real Estate Acquisition

MTACC did not report any significant real estate changes in its April 2016 ESA Monthly Report. Details are provided in Section 2.6 of this report.

c. Engineering/Design

Progress for remaining design work continues to lag design milestone targets. The GEC and PMT continue to miss target dates for completing the remaining design activities on the project due to scope transfers between contract packages as well as other issues. Design completion of the Contract CQ033, Mid-Day Storage Yard, package continues to be delayed due to unresolved coordination issues with LIRR, as well as late approval of track design variances required from LIRR. The need to accommodate Positive Train Control capability has also caused some delays. Additionally, review of the CS179, Facilities Design, systems design review by the GEC and LIRR are not supporting the CS179 schedule. Details are provided in Section 2.1 of this report.

d. Procurement

For the CM007 package, during November 2015, five proposers of the seven were qualified for continued negotiation. Addendum #30 was issued to three of these remaining qualified proposers who submitted revised costs and schedules, representing the first round of Best and Final Offers, on December 30, 2015. The PMOC notes that ESA has requested the proposers to modify their schedules based on an increase of contract time from 40 to 42 months and to accommodate late site access caused by the Contract CM006 Milestone #2 delay. Final presentations by the three remaining proposers for the CM007 contract were completed in January 2016. MTACC was able to complete the initial negotiations with the apparent low bidder and the contract was approved by the MTA Board on January 27, 2016. The CM007 Contract was awarded on April 11, 2016 with the Notice to Proceed as the same date. Delay to the Manhattan/Systems critical path was approximately 3.5 months.

e. Railroad Force Account (Support and Construction)

During June 2016, LIRR Signal personnel installed switch heater elements and conduits for the #3154 turnout; pulled, identified, and terminated signal cables at the "H5" and "H6" CILs; installed signal trough at the Location 30 and "H2" CILs; installed a grounding grid at Location 30; and adjusted track circuits at the new #3132E turnout. LIRR Track personnel installed the new #3154 and #3132E turnouts and realigned the Westward LIRR Passenger Track in Harold Interlocking. LIRR Electric Traction personnel megged cables between the HP3 and HP4 signal power separation poles and installed conduits between the "H4" CIL and Harold Tower. Amtrak Electric Traction personnel relocated catenary cables at the B911-1/4 catenary pole; installed back guy cables at the B923-1/3 catenary pole; installed cross track feeder wires at the B910EA catenary

pole; and demolished catenary apparatus at the B924, B913, and 914 catenary poles. Amtrak Track personnel placed the #743B turnout in place in Loop 1A Track.

f. Third-Party Construction

Manhattan:

During the first month of 2Q2016, the CM005 contractor (Manhattan South Structures) completed placement of archway pneumatically applied concrete (PAC) and masonry wall construction for the upper level of the TT1 Cavern at 38th St. Ventilation Facility. Also during 2Q2016 at the 37th St. Vent facility, the application of acoustical spray (fireproofing) and the installation of lift beams in the fan chambers was completed. Concrete slab and wall construction continued for the air plenum. Fuko and contact grouting was completed. The contractor completed set-up of the 52nd St. trailer complex. Punchlist activity in the caverns and tunnels continued. The contractor expects to complete wrap-up remaining work in 3Q2016.

The CM006 contractor (Manhattan North Structures) continued archway PAC construction at Access Tunnel 5 and Cross Passage 7. Waterproofing installation and concrete construction continued at the following locations: GCT 3 East & West Wyes, GCT 4 East & West Wyes, 50th St. Air Plenum, Connector Tunnels, and Tunnels EB4 and WB3. Duct bench construction continued at Tunnel WB1. The contractor continued construction of the upper level slab, stairs, and walls at the north end of the Westbound Cavern BOH (back of house). The contractor continued rehabilitation work at the 63rd St. Tunnels and Structures and completed lead abatement work. The contractor maintained construction operations with two shifts and expects to reduce to one shift (day) in early 3Q2016.

Also during the first month of 2Q2016, MTACC issued the Notice of Award and Notice to Proceed to the CM007 contractor, Tutor Perini Corporation. MTACC held several Construction Kick-Off Meetings. The first Construction Progress Meeting is scheduled early 3Q2016. The contractor continued mobilization, submission of permit applications, and the preparation of submittals, preliminary schedule, and other documentation for this contract. Track and Precast concrete deliveries to the site are projected to begin late 4Q2016.

Queens:

During 2Q2016, the CQ032 contractor (Plaza Substation and Queens Structures) completed exterior masonry and MEP installations, and continued architectural finish work at the Yard Services Building. At the Plaza Vent Structure, the contractor continued mechanical facilities installation. The contractor continued Plaza grading and site work. The contractor prepared for the removal of the BMT subway underpinning system on the north side of Northern Boulevard. The contractor also completed the Tunnel A fire standpipe, tested it, and placed it in service. The excavation work on the west side of 23rd St. Facility for the two remaining ventilation shafts was stopped again after encountering unforeseen underground obstruction. The contractor will resume work in early 3Q2016 after receiving GEC approved design for remediation of the conflict. Pre-existing water infiltration conditions remain to be addressed. The contractor expects to wrap-up remaining work in 3Q2016.

Harold Interlocking:

Contract CH053 (Harold Interlocking, Part 1 and G.O.2 Substation): MTACC declared “Substantial Completion” for the CH053 contract on February 29, 2016. Prior to “Final Completion”, the contractor continued to install communications duct bank, conduits for the Location 30 motor generator pad, and make punchlist repairs at the new G02 Substation and other punchlist repairs throughout Harold Interlocking during June 2016.

Contract CH057 Harold Structures Part 3: During June 2016, the CH057 contractor began excavation of the Tunnel D Approach Structure just west of the 39th St. overhead bridge. In the process, the contractor uncovered and began demolition of the Tunnel Boring Machine (TBM) cutting head left in place by the CQ031 contractor. The contractor also continued to install secant, soldier, and pre-cast concrete “H” piles to extend Tunnel D excavation eastward and completed demolition of the east and west abutments of the LIRR ML2 (Main Line #2) 48th St. undergrade bridge in Queens.

Contract CH057A (Westbound Bypass): During June 2016, the CH057A contractor completed re-assembly of its “jacked box” tunnel shield on site and began to excavate the Westbound Bypass Tunnel under Main Line #s 2 and 4 in Harold Interlocking on June 20, 2016. The contractor experienced difficulties with its initial excavation due to encountering ground that was harder than anticipated and with geometrical control of the tunnel shield. Additionally, the contractor continued to de-water the entire construction site and excavate the West Approach Structure.

Systems:

Contract CS179 – Systems Facilities Package No. 1: During June 2016, the CS179 contractor continued various elements of work (conduit installations, concrete work, temporary power installations, etc.) at the 2nd Ave.; B10; Roosevelt; Vernon; 29th St.; Queens Plaza; and 39th St. facilities. In addition, the contractor either began or, continued, the installation of tunnel lighting in Tunnels A, B/C, and LL and, the installation of Fire Stand Pipe hangers and piping in Tunnels B/C, D, and LL. The two (2) 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 is still working on solutions to this issue but no date was given for the rescinding of the SWOs. In June 2016, work at the 23rd Street facility remained on hold as a result of an issue with water infiltration through the concrete floor. Discussions with the CQ032 contractor regarding this issue continued.

Contract CS084 Traction Power System Package 4: In May and June 2016, the contractor continued to progress the L3 electrical service work to supply electrical power from Consolidated Edison (ConEd) to various signal locations in Harold Interlocking. The contractor is forecasting an early July 2016 date for completing of the current scope of the work for the L3 electrical service work. The LIRR needs to send a letter to ConEd to establish an electrical account for the L3 service so that ConEd will energize the electrical service. In May 2016, ConEd advised MTACC that it was not forecasting completion and energization of the L3 electrical service until October 2016. This month, the CS084 CM advised that MTACC was taking steps to attempt to get ConEd to accelerate this work to provide electrical service as soon as possible. Additionally, field surveys of various other work site locations are on-going. The contractor continues to report delays to contract Milestones Nos. 1, 2, and 3 resulting from the contractor’s assertions of delays associated with the timely approval of substation designs and the resolution of Supervisory Control Data Acquisition (SCADA) requirements.

g. Vehicles

Details of the vehicle procurement (non-federally funded portion) are provided in Section 2.5 of this report.

h. Commissioning and Start-Up

The last Quarterly Operational Readiness (OR) briefing was held on December 17, 2015, and the 1Q2016 and 2Q2016 briefings were postponed, due to scheduling conflicts. However, documentation regarding the status of various OR Task Working Groups (TWGs) was provided to the PMOC. A review of that documentation, along with follow up telephone calls, revealed that significant progress is being made on the Safety & Security Certification and Asset Management TWGs. The other TWGs continue to meet to develop documentation and plans to operate ESA when it is ready for revenue service. PMOC concerns are provided in Section 2.4 in this report.

i. Project Schedule

Table 1 provides a summary of critical milestone dates including PMOC and Grantee forecasts:

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.

j. Project Cost

Table 2 provides a summary of project cost estimates and expenditures vs. the FFGA forecasts:

Table 2: Project Budget/Cost Table (May 1, 2016)

	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	100.00%	\$4,724	\$11,214.0	100.00%	\$6,827.3	60.88%
Financing Cost	\$1,036	14.00%	\$617	\$1,036.0	9.24%	\$617.6	59.61%
Total Project Cost	\$6,350	86.00%	\$4,107	\$10,178.0	90.76%	\$6,209.7	61.01%
Federal Share	\$2,683	36.30%	\$1,148	\$2,699.0	24.07%	\$2,226.1	82.48%
5309 New Starts Share	\$2,632	35.60%	\$1,098	\$2,436.6	21.73%	\$1,964.0	80.6%
Non New Starts Grants	\$51	0.70%	\$50	\$67.0	0.60%	\$66.7	99.55%
ARRA	0	0.00%	0	\$195.4	1.74%	\$195.4	100.00%
Local Share	\$3,667	49.60%	\$2,959	\$7,479.0	66.69%	\$4,185.8	55.97%

k. Project Risk

The PMOC had previously expressed its concern that the risk management area has not been adequately supervised since the re-assignment of the long serving Risk Manager in late 2Q2015. The new Risk Manager, who started work on the project in January 2016, held a program-wide risk meeting with the PMOC on March 14, 2016, the first such meeting since January 2015. The PMOC believes that the risk management process on ESA will be restored to its proper functioning as a key input to the PMT's decision making process. Details are provided in Section 6.0 of this report.

l. FTA Quarterly Review Meeting

The FTA Quarterly Review Meeting for East Side Access and Second Avenue Subway (Phase 1) was held on April 21, 2016. Highlights of the ESA discussion include:

- Regarding MTACC's claim against the GEC on the ESA Project, MTACC counsel noted that the parties are currently engaged in binding arbitration. The parties are in the discovery phase now and hearings are not expected until the January/February 2017 time frame. MTACC counsel explained that the MTACC claim is regarding alleged GEC deficiencies for the design of the modifications to the Harold Interlocking. MTACC is actually litigating against the GEC's insurance underwriter for the errors and omissions coverage.

- MTACC counsel identified a Buy America issue on ESA involving an installed steel condenser water pipe. He stated that the ESA is preparing a letter for MTA legal review. [PMOC notes that this issue concerns ESA Contract CM013B and involves disposition of a Non-Conformance Report.]
- Regarding Capital Plan Funding, the ESA Chief of Program Operations provided a summary of the short term project funding arrangements that had been set up to support ESA operations and procurement activities through 2Q2016. MTA anticipates CPRB's approval of the ESA budget by May 31, 2016, or sooner. [PMOC notes that this occurred on May 24, 2016.]
- ESA noted the critical activities that must be achieved in Harold Intelocking to support the ESA's December 2022 Revenue Service Date:
 - Scheduled CIL cutovers must be completed as planned by September 2017 and September 2018,
 - The "Summer Outage" in 2018 involving an Amtrak 30-day track outage.
 - The 6-month LIRR track outage in 2019 to construct the Tunnel D approach structure.
- Regarding Amtrak support of the ESA Harold Schedule, ESA noted the following:
 - The remaining cutovers are under the control of ESA and LIRR with minimum Amtrak involvement.
 - Amtrak has only provided, on average, 60% of the planned FA support on weekend track outages. However, ESA notes that since the beginning of 2016, about 85% of the planned third-party work has been completed.
 - Amtrak's achieves only 60% productivity on its ET (Electric Traction) force account construction work.
 - There was a discussion regarding the competing demands placed on Amtrak ET force account resources by other non-ESA projects such as the Moynihan Station

The next ESA/SAS FTA Quarterly Review Meeting is tentatively scheduled for July 21, 2016.

MONTHLY UPDATE

The information contained in the body of this report is in accordance with Oversight Procedure #25, to "inform the FTA of the most critical project occurrences, issues, and next steps, as well as professional opinions and recommendations". Where a section is included with no text, there are no new "critical project occurrences [or] issues" to report this month.

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. 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. 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 or are deficient: Design Development; Change Control Committee (CCC) Process and Results; Stakeholder Management; Issues Management; Procurement; and Risk-Informed Decision Making. The PMOC notes progress in two components – management decision making and timeliness of 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, and in June 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 coordinated with MTACC to arrange 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 between June 2015 and continued through December 2015. MTACC and the PMOC are working to schedule the few remaining meetings with ESA chapter authors 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 of the PMP. The PMOC believes that this continues to be a deficiency and needs to be resolved as soon as possible. [Ref: ESA-114-Sep13] The PMOC does note, however, progress in certain areas. The PMOC’s major areas of concern include:

- **Schedule Management Plan (SMP):** The ESA project remains partially non-compliant with requirements for Integrated Project Schedule (IPS) Updating, Forecasting, [REDACTED] against a current baseline schedule. The revised SMP was submitted in 4Q2015, and the PMOC completed its review in June 2016.
- **Cost Management Plan (CMP):** The ESA project remains partially non-compliant with requirements for Project Level EAC Forecasting, Project Level EAC Forecast

Validation, [REDACTED] and Secondary Mitigation. 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 continued working on additional agreed upon revisions and evaluated the PMOC's recommendations in six areas. MTACC provided an initial draft of the revised CMP on December 15, 2015, and the PMOC completed its review in early June 2016. MTACC and the PMOC met on June 22, 2016, to review the PMOC comments. MTACC will follow up with the PMOC regarding any remaining actions.

Revisions to the ELPEP Document:

[REDACTED]. The PMOC's recommendations were presented at several meetings with the MTACC. [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, but was postponed.

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

a) Organization

During 1Q2016, the project organization was revised. Construction work is now managed by individual managers for Manhattan, Queens, Harold Interlocking and Systems instead of all work being managed by the Executive Construction Manager. The PMOC has been monitoring this organizational restructuring and has not noted any significant change in the Sponsor's ability to maintain the required level of Management Capacity and Capability.

b) Staffing

The PMOC had previously expressed concern 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 has held program level risk meeting with the PMOC in March 2016 and June 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.

The ESA Quality group is understaffed at the current time and the Quality Manager has announced his resignation from the project effective in July 2016. See Section 1.6 of this report for details.

1.2 Project Management Plan

a) History of Performance

MTACC re-baselined the ESA Project in May 2012. This re-baseline resulted in a risk adjusted budget of \$8.24B (not including rolling stock reserve and finance cost) and a projected RSD in

August 2019. During 2013 and 2014, ESA undertook an extensive re-planning effort to revise the Program budget and schedule as a result of the CM012R bid overrun and continuing delays in several other major procurements (e.g., CS179; CM014B). This is the third re-planning effort undertaken by ESA since the FFGA in 2006 (the first re-planning effort took place in 2009). The current re-planned budget (\$10.177B) and schedule (RSD in December 2022) were presented to the MTA CPOC in June 2014 and approved. The PMOC notes that ESA has been dealing with schedule performance set-backs primarily in the following areas: funding issues that delayed award of contracts and systems contract options; poor performance by the CM006 contractor; and continued delays in the Harold Interlocking work caused by continued lack of adequate railroad force account support.

b) PMP

MTACC submitted PMP Rev. 10 to the FTA and PMOC on July 18, 2014. This revision incorporates changes stemming from FTA/PMOC comments on PMP Rev. 9.0 provided in December 2013 as well as changes that resulted from MTACC's Candidate Revision process. Based on working meetings, dialogue, and additional clarifying review comments from the PMOC, MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The PMOC reviewed Rev. 10 and provided its comments to the FTA in 4Q2014. A subsequent update to the Rev. 10 document was submitted on March 13, 2105, reflecting only revisions to the ESA Change Control Committee. 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 continue working toward resolution of the remaining, minor, comments. MTACC and the PMOC met in June 2016 to review the PMOC's comments on the Cost Management Plan. The PMOC completed its review of the revised Schedule Management Plan in late June 2016.

1.3 Project Controls

a) Schedule

[REDACTED]

b) Cost

MTACC presented its Re-Plan baseline budget of \$10.177 billion (excluding Rolling Stock Reserve) to the MTA CPOC in June 2014. [REDACTED]

[REDACTED]

1.4 Federal Requirements

a) FFGA

As a result of MTACC's re-baselining of the ESA Project budget and schedule on three separate occasions (2009, 2012, and 2014) since the FFGA was signed in 2006, an FFGA amendment has been developed and is in the final stages of approval by the FTA. As mentioned above, MTACC presented a new project budget of \$10.177 billion (excluding the Rolling Stock Reserve and finance costs), and a new schedule with an RSD of December 2022 to the MTA CPOC in June 2014. The proposed FFGA amendment has a budget of \$10.922 billion (\$10.459 billion before Rolling Stock Reserve and finance costs) and an RSD of December 2023 based on the PMOC analysis that includes considerations of historical ESA performance and future risks.

b) Federal Regulations

As an FTA full funding grant recipient, MTA is required to meet the requirements of the Buy America Act. The PMOC makes note of current and new issues regarding this requirement in this section and includes additional details in the corresponding contract status in Section 2.3 and Appendix G.

Contract CS179, Systems Package 1: Multiple issues affecting proposed equipment. Please refer to Appendix G for details.

Track Turnouts:

As the PMOC noted in its 3Q2015 (September 2015) and subsequent Monthly Reports, MTACC has approximately 17 turnouts on hand for which it received FRA and FTA "Buy America" waivers in 2015 to use. These turnouts will be used for MTACC's track program during 2016 and 2017. There are approximately 41 turnouts (not presently on hand), however, which must still be procured in compliance with "Buy America" requirements for the years after 2017. On behalf of LIRR and Amtrak, MTACC authorized the GEC to make suggested design changes in order to provide the railroads with turnout specifications that would be "Buy America" compliant. The GEC did so for the Amtrak specification and Amtrak approved the changes in January 2016. As of June 30, 2016, however, MTACC, the GEC, and the LIRR have not been able to fully develop the LIRR turnout specification to be "Buy America" compliant. Based on this, the PMOC believes that it will be mid-to-late 3Q2016 before MTACC is in a position to place an order for these 41 turnouts. The PMOC further believes that MTACC must take a more proactive approach with both the GEC and LIRR to finish development of this specification so that the MTACC can place an order that will result in these turnouts being delivered in time for 2018 installation [Ref: ESA-123-Jun16].

1.5 Safety and Security

a) Safety Certification Process

Documents supplied by ESA for the 2Q2016 Operational Readiness Briefing indicated that construction safety certifications for the various ESA contracts have now been incorporated into the the overall ESA Project IPS and are linked to the current contract construction schedules. Thus, when a contract's Substantial Completion date is modified for any reason, the completion of the construction safety certification will automatically be adjusted accordingly. The PMOC is still requesting information regarding the status of safety certifications for the contracts still in the design phase.

b) Project Construction Safety Performance

Through May 2016, project safety statistics for lost time accident and OSHA recordable injuries on active construction contracts are trending below Bureau of Labor Statistics (BLS) national average with a CY2016 project wide ratio of 0.49* vs. 1.80 (2015 BLS average) lost time accidents (LTA) per 200,000 work hours (national average). The ESA recordable CY2016 injury rate through May 2016 was 2.12 vs. 3.2 (2015 BLS average).

* The Grantee uses a 12 month rolling average for their OSHA statistics.

c) Security

The ESA PMT did not report any significant security issues in its May 2016 Monthly Progress Report, although the PMT is in the process of re-issuing security badges to all contractors.

d) Security Certification Process

In June 2016, the PMOC met with the ESA Director of Operational Readiness and the ESA Safety/Security Representative to discuss the status of the System Safety/Security Certification for the entire ESA project. These ESA personnel provided documents showing the status and proposed schedule for various ESA construction contracts. Additional documentation is in development to identify when System Safety Certification will be accomplished for those contracts still in design or not yet awarded for the start of construction. Further, a document showing the status of Security certifications was presented and discussed. These ESA personnel advised that further investigation and progress on the Security Certifications is underway and, that the schedule for completing the Safety and Security Certification process on all ESA contracts would be incorporated into the overall ESA Integrated Project Schedule.

1.6 Project Quality

ESA Quality Staff: The ESA Quality Manager has resigned after eight years on the job. His last day worked will be July 15, 2016. The PMOC is concerned that there is insufficient quality staff. One year ago, there was a quality manager and five quality engineers. One quality engineer resigned and has not been replaced. Another is being promoted to the quality manager position so the staff is now down two quality engineers. One of the remaining three quality engineers plans to retire at the end of the year. MTACC Quality Management has stated that they are trying to find qualified individuals to fill the two vacant positions. [Ref.: ESA-122-Jun16]

GEC Quality: The GEC Quality Manager conducted an audit of the GEC's Quality System on June 21, 2016, and identified the following issues: the GEC's Quality Program has not been signed by GEC's management; there is no internal audit schedule; GEC management is not allocating sufficient time for the GEC Quality Manager to perform his duties; and the GEC is delinquent in providing updated revisions of their quality procedures.

Conditional Assessment Inspections: Every six months, the ESA Quality Manager performs Conditional Assessment Inspections. Based on experience gained in performing conditional

assessment inspections during the past year, the process used is being reviewed. It is expected that the procedure will be revised in May or June 2016.

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 have been identified with as-built drawings and the ESA Quality Manager will be meeting with the contractor to resolve them.

CM005: The ESA Quality Manager performed a walkthrough with the CM office in April 2016. The CM office still has a “punchlist” with about 125 items remaining. Although the CM Office expects all of the “punchlist” items to be closed by July 29, 2016, the PMOC is concerned that there are many actions still to be completed before this contract can be closed.

1.7 Stakeholder Management

a) Railroads

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 with regard to the FRA HSR grant. Additionally, the sequence in which Amtrak decides to do its own work to reconstruct its East River (ERT) Line 1 and Line 2 tunnels that were damaged by Superstorm Sandy will have a significant impact on the “ESA First” schedule. Amtrak recently notified MTACC that it plans to close ERT Line 2 first in 2019. Although this represents a delay from the earlier 2018 forecast time frame, the selection of Line 2 to close first does not support the current ESA Harold Schedule for work on the Eastbound Reroute track and structure. However, MTACC expects that this will not impact the remaining work in the Harold Intelocking that is required to provide service into Grand Central Terminal. Both parties need to continue to work together to develop an ERT Line 1 and Line 2 outage schedule that will have the least negative impact on ESA. At present, Amtrak’s work is not planned to begin until 2019, so there should be sufficient time to develop such a schedule.

b) Others Stakeholders

Although there are other stakeholder issues that ESA must address, at present there is no evidence that any might have a significant negative impact on the project schedule or cost.

1.8 Local Funding

a) MTA/New York State (Capital Plan)

The MTA funding request for the 2015-2019 Capital Program was submitted to the NYS Capital Program Review Board (CPRB). ESA will need to obtain funding from this program to award all the options in the CS179 contract and to award the CM007, CQ033, and CH058 contracts. The

\$10.178 billion (not including the \$463 million Rolling Stock Reserve) budget, presented to the Capital Program Oversight Committee (CPOC) in June 2014, will make the need for additional funding even greater. Until new funding is provided, the project has a funding shortfall of approximately \$2.6 billion, and is part of the un-funded MTA Budget. In late October 2015, the MTA presented a \$29 billion program to its Board for the 2015 – 2019 funding cycle. Although an agreement has been reached with the Governor, the Capital Plan funding had not been appropriated to the ESA project as of January 31, 2016. As of the end of June 2016, contract Option Nos. 1A, 2A, 2B-1, 3A, 3B, 6, and 7 have been exercised and four more (Option Nos. 1B, 2B-2, 4, and 5) must still be exercised to complete the required CS179 contract scope. In early January 2016, ESA was given an interim funding allocation of approximately \$941M in 2015 – 2019 funds, of which \$748 million was for the award of CM007. Funding will also cover the award of VQ033, forecasted overruns on Active 3rd Party contracts (excluding CH057A), CS179 Options expiring in June 2016, OCIP, cash flow needs through June 2016 for Force Account, Management, Utilities, and additional real estate and utility relocation issues. Contract deferrals were also required in order to balance available funding (new awards including Mid-Day Storage, Tunnel A, 250 Hz Track, Cab Simulator, Harold Stage 4, portion of CS179 Option 2B, etc.).

b) Other Sources

The total FTA funding commitment, as of March 2016, remained at \$2.699 billion, as indicated in Table 2 in the Executive Summary.

1.9 Project Risk Monitoring and Mitigation

a) Risk Management Plan (RMP)

The MTACC RMP, Rev. 2, dated July 2012, is a sub-plan within the ESA Project Management Plan (PMP). The RMP, Rev. 2, was updated and incorporated FTA/PMOC review comments to bring it into compliance with the ELPEP principles and requirements. The FTA formally notified MTACC of its conditional acceptance of the RMP by letter dated March 4, 2013. MTACC plans to update the RMP, if needed, after completion of its current updates of both the Cost Management Plan and the Schedule Management Plan.

b) Monitoring

The PMOC had previously reported that it was concerned about inadequate support of the program level risk management process due to the lack of continuity of supervision created by turnovers and vacancy of the ESA Risk Manager position in 2015. This concern was resolved earlier in 2Q2016 based on the PMOC's observation that the new ESA Risk Manager, who started on the project in January 2016, has demonstrated his ability to accomplish the restoration of the risk management process. The new Risk Manager has held program level risk meeting with the PMOC in March 2016 and June 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.

c) Mitigation

Current risk mitigations are discussed in Section 6.3 below.

2.0 PROJECT SCOPE

For the 48th St. Station Entrance, the MTA Board approved the design agreement with the building owner, RMC. The building owner 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.

On Contract Package CQ033 (Mid-Day Storage Yard), resolution is still required between MTACC and LIRR for final determination on the scope of the LIRR Force Account (FA) work regarding the Arch Street Yard Tie-in. The design package still requires design variance approvals regarding LIRR track standards and clearances in order to provide a yard layout having sufficient capacity to store the planned 24-12 car train-sets. MTACC is currently projecting a mid-July 2016 advertise date for this contract.

2.1 Engineering/Design and Construction Phase Services

As of the end of April 2016, 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%. Its Cost Report shows 92.2% of the overall EIS & Engineering category as invoiced and 92.2% of the budgeted section titled “Design” (including Design Settlement) as having been invoiced.

Status:

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 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 a yard layout having sufficient 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 NYSDOT. LIRR action is required. The advertise date for CQ033 is forecast for July 18, 2016, but the PMOC believes that this will likely be further delayed.

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 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, driven by schedule requirements to complete the CIL cutovers as planned during 2017 and 2018. 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.

The CS179 contractor continues to work on the design development of the various contract required systems. As noted in previous reports, the reduction of the backlog of submittal and RFI reviews remains as a serious issue and, although this continues to be an area of focus for the CS179 project team, very little progress on reducing the backlog has occurred. Discussions on ways to remedy this issue continue between MTACC-ESA senior management and LIRR management. During 2Q2016, 8 of 11 Control System designs underwent the Second Design Review (SDR) process, bringing the total number of SDRs completed to 9 out of the 11 required Control Systems. The remaining two Control Systems (CCTV & Security Management System and the Control Center Fit Out) underwent Preliminary Design Reviews in April 2016 and are currently scheduled for SDRs in July 2016.

The CS084 contractor continued to transmit contractual submittals and substation design documents. However, the contractor continues to assert that delays in receiving comments back in a timely manner from the MTA are impacting its ability to meet its own design, fabrication, and installation schedules. The CS084 CM noted that the LIRR recently engaged a consulting firm to assist in processing design reviews. At the mid-June 2016 CS084 Progress meeting, it was noted that the number of overdue submittal responses has climbed to 294 out of the 388 pending a response; thus, it was not apparent to the PMOC that this additional assistance was improving the efficiency of this process. Additionally, the GEC has yet to provide design documents to address extra work related to the grounding and testing of existing transformers and panels installed earlier by one or more ESA contractors; and, the MTA has yet to resolve the outstanding issue concerning the SCADA requirements.

Contract CS284 (GEC Contract 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 forecast for September 6, 2016.

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

Observation:

The GEC and PMT continue to consistently miss many of the target dates for completion of remaining design activities on the project. Some of the delays are caused by the requirement to add Positive Train Control to the associated systems design and equipment. The PMOC remains concerned about any potential impacts on the CS179 and CS084 contract schedules that may result from the lack of timely design decisions and the lengthy turn-around time to review and respond to design submittals and contractor inquiries.

Concerns and Recommendations:

MTACC needs to focus on achieving intermediate milestones in a timely fashion and work closely with the GEC to help make this happen. The continual shifting of scope among various packages has made finalizing design documents and drawings extremely difficult. Additionally, MTACC management needs to more actively engage outside stakeholders such as building owners and the LIRR to resolve lingering design issues. The PMOC recommends that the PMT develop a design milestone tracking process for the remaining design work on the project in order to more effectively manage the design effort.

2.2 Procurement

As of end of April 2016, the Cost Report showed total procurement activity on the project as 80.6% complete, with \$8.201 billion in contracts awarded out of the \$10.177 billion current reported budget.

Status:

The CM007 package was advertised on December 23, 2014, and contract documents were made available for proposers on January 15, 2015. The pre-proposal conference and site tour were held in early March 2015. The proposal due date was extended four times from May 2, 2015, to September 15, 2015, when seven technical/schedule proposals were submitted. The cost proposal due date was pushed back several times from October 6, 2015, to October 27, 2015, when seven cost proposals were submitted. The PMT technical ranking recommendation letter was finalized, approved, and issued on October 30, 2015. During November 2015, five proposers of the seven were qualified for continued negotiation. Addendum #30 was issued to three remaining proposers and revised costs and schedules, representing the first round of Best and Final Offers, were submitted on December 30, 2015. The PMOC notes that ESA has requested the proposers to modify their schedules based on an increase of contract time from 40 to 42 months and schedule changes to accommodate delayed site access caused by the Contract CM006 Milestone #2 delay. Final presentations by the proposers for the CM007 contract were completed in January 2016. MTACC was able to complete the initial negotiations with the apparent low bidder and the contract was approved by the MTA Board on January 27, 2016. Award was delayed pending completion of negotiations on the Best and Final Offer (BAFO) schedule and acceptance of the final contract price and schedule. Contract CM007 was awarded on April 11, 2016 with the Notice to Proceed as the same date.

Design work on the new, stand-alone CH061A package (completion of Queens Tunnel “A”) was completed in 1Q2016. Contract advertisement had originally been scheduled for December 14, 2015, and then revised to March 1, 2016, but this was delayed pending final MTA approval. The CCC approved the budget adjustments to provide funding and ESA had been awaiting final MTA approval based on NYS-CPRB sign-off on the Intent to Advertise. This delay was resolved with the CPRB approval of the 2015-2019 Capital Plan and the ESA budget. The CH061A contract was advertised on May 23, 2016, with a bid due date of July 21, 2016.

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

During 2Q2016, the MTACC exercised two additional contract Options for contract CS179. This brings to seven the number of options exercised on this contract, with five more (Option Nos. 1B, 2B-2, 4, and 5) remaining to be exercised. All the currently identified CS179 contract Options are part of the original contract work and must be exercised to successfully complete the required contract work. The schedule for exercising the remaining contract options indicates that all of them must be exercised by early 4Q2017 to meet the revised contract substantial completion date.

Concerns and Recommendations:

The lack of stability in the contracting strategy and Contract Packaging Plan (CPP) remains a concern. The scope shifts among different packages during 2015 have made it difficult to fully understand the impact of these changes to the overall ESA Project. The current CPP update (revision 10.2) was submitted on November 13, 2015. 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.

The PMOC had previously expressed its concern that the Contract CM007 proposal due date has been delayed a total of 4.5 months and that this significantly reduced the time for negotiations on this very large contract that is currently on the program schedule critical path. MTACC was not able to award this contract as planned before December 31, 2015, and the Manhattan/Systems critical path has been delayed approximately 3.5 months. With award of Contract CM007 on April 11, 2016, this issue is now resolved. [Ref: ESA-121-Sep 15]

2.3 Construction

The PMT reported in its April 2016 Monthly Progress Report (May 1, 2016, data date) that the total construction progress reached 62.8% complete vs. 65.1% planned.

Manhattan Contracts

CM005 – Manhattan South Structures

Status: As of April 30, 2016, the MTACC Forecast at Completion for CM005 increased slightly to \$243,214,020. The MTACC forecast for Substantial Completion (SC) remained April 22, 2016. ESA reports that the slip beyond the contract SC date is due to the remaining work volume and the contractor's slow production rate. Actual construction progress for April 2016 was 0.4% versus 0.9% planned. Cumulative progress through April 30, 2016, was 98.1% actual versus 99.2% planned.

	1	2	3	4	5	6	
	Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$200.6M (Award)	\$239.9M	+39.3M +19.6%	\$243.2M	+42.6M +21.2%	+3.3M +1.4%	
Scheduled SC Date	02/06/16	02/06/16		04/22/16			
Duration (NTP-SC)	29 mos.	29 mos.	0 mo. 0.0%	32 mos.	3 mos. 10.3%	3 mos. 10.3%	
Percent Complete	Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
99.2%	98.1%	21.7%	1.8%	5.1%	0.8%	N/A	N/A

From April 2016 ESA Monthly Report

Construction Progress: During June 2016, the contractor continued punchlist activity in the caverns and tunnels. The contractor continued concrete construction of intermediate slabs, struts, walls, and ceiling at the 37th St. Plenum. The contractor also continued utility work at the upper 37th St. facility.

Observations/Analysis: ESA reports all work required for Substantial Completion was completed in April 2016, and that Substantial Completion will be declared when outstanding contract deliverables are received. ESA and the contractor continue to work well together, however, the work continues beyond contract Substantial Completion and may impact the follow-on CM007 contract.

Concerns and Recommendations: ESA and the contractor must remain diligent to resolve issues and complete contract CM005 close-out.

CM006 – Manhattan North Structures

Status: As of April 30, 2016, MTACC decreased its Forecast at Completion for CM006 to \$359,212,550. The MTACC forecast for Substantial Completion remained at June 1, 2017. Actual construction progress for April 2016 was 3.6% versus 1.6% planned. Cumulative progress through April 30, 2016, was 74.2% actual versus 88.3% planned. In March 2016, MTACC and the contractor reached agreement on a new contract schedule to align with CM007 contract access restraints. ESA still needs to complete execution of the contract modification; however, ESA is reporting the new schedule as the current baseline.

		1	2	3	4	5	6
		Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)
Contract Cost		\$294.2M (Award)	\$324.6M	+30.4M +10.3%	\$359.2	+65.0M +22.1%	+34.6M +10.7%
Scheduled SC Date		11/30/16	6/01/17*		6/01/17		
Duration (NTP-SC)		32 mos.	38 mos.	6 mos. 18.8%	38 mos.	6 mos. 18.8%	0 mo. 0.0%
Percent Complete		Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
88.3%	74.2%	50.9%	4.2%/mo.	30.6%	5.1%	2.0%/mo.*	2.0%/mo.

From April 2016 ESA Monthly Report

* Pending execution of contract modification

Construction Progress: Construction Progress: During June 2016, the CM006 contractor continued rehabilitation/remediation work at the 63rd St. Tunnels and Structures. The contractor continued arch rebar and pneumatically applied concrete (PAC) at Access Tunnel 5 and Cross Passage 7. The contractor continued rebar, shotcrete & waterproofing construction at the 50th St. Air Plenum and Connector Tunnels. Waterproofing, rebar & shotcrete installation continued at GCT 3 East & West. The contractor continued duct bench construction at Tunnel WB1. Contact grouting continued at Tunnel EB2. The contractor continued arch concrete construction at Tunnel EB4 and waterproofing & arch concrete at Tunnel WB3. The contractor continued construction of the upper level west walls at Westbound Cavern BOH (back of house). The contractor will continue two shifts (day & swing) for the 63rd St. Tunnels and Structures work.

Observations/Analysis: A contract modification for the new CPM schedule has not been executed due to legal issues that are being resolved. ESA and the contractor continued to use both new and old schedules for tracking the progress of work. ESA and the contractor continued to work well together.

Concerns and Recommendations: As reported last month, ESA needs to complete the execution of the contract modification so that a realistic schedule is available to track construction progress.

CM007 - GCT Station Caverns and Track:

Status: MTACC issued the Notice of Award and Notice to Proceed to the contractor, Tudor Perini Corporation, on April 11, 2016. MTACC reports that, through May 1, 2016, the forecast cost at completion was \$712,311,733. The Substantial Completion date is January 28, 2020. Actual monthly construction progress versus planned and cumulative progress through the end of the reporting month, actual versus planned, will be reported when available from MTACC.

	1	2	3	4	5	6	
	Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$663.1M (Award)	\$663.1M	+\$0.00M +0.00%	\$712.31M	+\$49.21M +7.4%	+\$49.21M +7.4%	
Scheduled SC Date	1/28/20	1/28/20		1/28/20			
Duration (NTP-SC)	46 mos.	46 mos.	+0 mo. +0.00%	46 mos.	+0 mo. +0.00%	+0 mo. +0.00%	
Percent Complete	Actual – 12 mos.		Actual- 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
N/A*	N/A*	N/A*	N/A *	N/A*	N/A*	2.2%	2.2%

From April 2016 ESA Monthly Report

* April 2016 was the first month for which MTACC reported CM007, however MTACC has not generated a progress curve for CM007 yet, therefore there is no historical data to populate these columns.

Construction Progress: The contractor is continuing with submittals, construction of mockups, and development of the Preliminary and Baseline Schedules. The Environmental Kick-Off Meeting was held on June 17, 2016. The first Construction Progress Meeting is scheduled for July 14, 2016.

Observations/Analysis: None at this time.

Concerns and Recommendations: None at this time.

CM014A – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that, through May 1, 2016, the forecast project cost at completion was \$56,887,117, reduced from the previous \$58,128,537. MTACC reports in their April 2016 Monthly Report it is considering declaring Substantial Completion November 1, 2015, following negotiations with contractor and the bonding company. The MTACC Project Office has advised the PMOC that Substantial Completion will be based on completion of energization of all 6 electrical feeds. MTACC reports there was zero actual construction progress for April and May 2016, as the contractor has not been on site. Cumulative progress through May 1, 2016 remained 97.0% versus 100.0% planned.

		1	2	3	4	5	6
		Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)
Contract Cost		\$43.50M (Award)	\$58.87M	+\$15.37M +35.33%	\$56.88M	13.38M 30.76%	1.99M -3.80%
Scheduled SC Date		4/25/13	9/7/15		11/1/15		
Duration (NTP-SC)		18 mos.	46 mos.	+28 mos. +155.56%	+48 mos.	+30 mos. +166.67%	+2 mos. +4.08%
Percent Complete		Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
100%	93.4%	N/A	N/A	N/A	N/A	N/A	N/A

From April 2016 MTA Monthly Report

Construction Progress: During June 2016, the contractor did come back to the site with a minimum level of personnel, after having no personnel on site for both April and May 2016. The CCM has reported to the PMOC that one of the remaining 2 breakers was racked in. However, this project is now in the ConEd Summer Moratorium, so ConEd has come on site and disconnected breakers where it is needed to assist them with unrelated issues in other parts of the service line. This will probably continue until the end of the moratorium in September 2016. During June 2016, power taps, where needed, were changed in the transformers.

Remaining work continues to include: Completing the outstanding work items list (approximately 60 items) and, 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 (As-Builts must also include electrical equipment survey data which includes 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.

Observations/Analysis: The CM014B contractor is still not using the power from the temporary switchgear fed by the permanent power in the B-30 Substation. One of the reasons claimed is that CM014A installed 300A breakers, and the breakers must be 400A.

Concerns and Recommendations: The PMOC remains concerned that the continued presence of the CM014A contractor at the site gives CM014B an excuse for delay claims. Through June 2016, the B30 Substation has still not been turned over to CM014B.

CM014B – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that, through May 1, 2016, the the forecast project cost at completion remained \$463,617,500. The Substantial Completion date remains August 18, 2018. Actual construction progress for April 2016 was 1.4% versus 2.5% planned. Cumulative progress through April 30, 2016 was 16.5% actual versus 19.6% planned.

	1	2	3	4	5	6	
	Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$404.62M (Award)	\$428.22M	+\$23.60M	\$463.62M	+\$59.00M +14.58%	+\$35.40M +8.27%	
Scheduled SC Date	8/18/18	8/18/18		8/18/18			
Duration (NTP-SC)	42 mos.	42 mos.	0 mo.	42 mos.	0 mo.	0 mo.	
Percent Complete	Actual – 12 mos.*		Actual- 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
19.6%	16.5%	15.3%	1.28%	7.5%	1.25%	2.98%	2.98%

From April 2016 MTA Monthly Report

Baseline Schedule – The final submission was received on February 16, 2016, and returned PAN (Proceed as Noted) on March 17, 2016.

Milestone #1(March 5, 2016; now June 1, 2016) Complete Terminal Management Center, Communication Room C-2 & Communication Closet C-5) – The extended milestone date has been met. The room is complete and punchlist work is underway.

Milestone #2 (June 4, 2016) 50th St. Vent Facility Comm Room CR102, Tunnel Fan Control Room, Electrical Room #126 & ICC Room ready – The CCM reports that this milestone will be delayed. The reason is that one of the rooms, has a wall that is a part of the Elevator #9 shaft, where out of alignment block walls may have to be torn out and reconstructed. These walls were constructed

by the CM013 contractor. The GEC is reviewing shaft survey data to make a final corrective procedure.

Milestone 5A (March 17, 2017) Complete all work at 48th St. Entrance – The demolition of the Hog Houses has been completed. Demolition of the MTA Building remains delayed by MTACC. Relocation of personnel will be to the new trailer park at 52nd St. which is not completed. The issue has been with establishing an approved emergency egress from the area. It has been determined that the corrective procedure will be the construction of a stair tower to the street with a “Bilco” exist hatch at the street level at E. 52nd St. This work is being performed by the CM005 contractor.

Construction Progress: Work Trains are loaded/unloaded at B/N Yard. Surveying continues throughout and will continue for the duration of the project.

Concourse(MadisonYard) – Stantec Repairs (structural repairs to columns in Madison Yard that are privately owned) continue throughout. The contractor continues with waterproofing, rebar, forming and placement of cast-in-place manholes and ejector pits and continues to place PAC (Pneumatically Applied Concrete) headers at the top of the CMU and UA walls in Zone #2 along Track #115 and along the west UA wall at new room construction. Placement of CLSM (Controlled Low Strength Material) backfill continues from south to north in various areas. Final concrete slab invert placement and grounding grid installation was completed at the north end of the concourse for the new BP-20 Substation. Final concrete slab invert placement continues from north to south. Stored equipment continues to be transferred on work Trains and placed in the designated locations on pads in the BP20 Substation.

Wellways – Conduit, racks and sprinkler piping installation is complete in Wellway #1 and ongoing in Wellway #2. Sprinkler line installation is underway in Wellway #1. Work platform erection began in Wellway #3. All ceiling and other finish work must be completed before the escalators are installed. No work will be allowed over the new escalators.

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

Dining Concourse Connection – Structural steel fabrication/delivery continues for the upper floor deck framing of the escalator opening. The escalators for this area are on site on a work train flatbed.

Elevator T-01 - Demolition of the exterior of the existing shaft continues at night.

48th St. Entrance – Rock excavation is approximately 85% complete. The invert slab at the west end was placed.

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

50th St. Vent Building – Continued installation of sprinkler piping throughout. A change order has been developed 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. The contractor continues to install seismic clip angles for masonry and ductwork/fans and paint walls throughout.

Observations/Analysis: The PMOC observes that the contractor has been having issues with completing the finishes in the wellway arches. This is impacting the schedule for delivery of the escalator components, which may delay removal of the tracks for the work trains.

Stantec Repairs (structural repairs to privately owned columns in Madison Yard) are repairs to the Madison Yard structure, including structure owned by both MTA and private building owners. Under a separate contract, Stantec Consulting performed a structural survey and produced drawings and specifications for the repairs of this portion of GCT. These repairs started in the CM014-A contract and now are being completed under this contract.

The PMOC notes that the gap between actual cumulative construction progress and planned has widened from 87.6% accomplished (14.9% / 17.0%) to 84.2% (16.5% / 19.6%) since the March 2016 report. The PMT attributes this to delays in steel submittals and subsequent steel fabrication.

Concerns and Recommendations: The PMOC is concerned about the widening gap between planned and actual construction and recommends that the PMT and the contractor double their respective efforts to improve the submittal and fabrication process.

Queens Third-Party Contracts

CQ032 Contract – Plaza Substation and Queens Structures

Status: As of April 30, 2016, the Forecast at Completion for CQ032 increased from \$261,737,072 to \$263,432,066. MTACC Forecast for Substantial Completion remained September 6, 2016. ESA reports that work at the 23rd St. Vent Facility is delayed because an unforeseen concrete obstruction was found which required redesign of the vent shaft by the GEC. MTACC reports actual construction progress for April 2016 was 5.6% versus 1.9% planned. MTACC reports cumulative progress through April 30, 2016 was 96.5% actual versus 94.7% planned.

	1	2	3	4	5	6	
	Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$147.4M (Award)	\$260.0M	+\$112.6M +76.4%	\$263.4M	+\$116.0M +78.7%	+\$3.4M +1.3%	
Scheduled SC Date	8/14/14	9/6/16		9/6/16			
Duration (NTP-SC)	36 mos.	61 mos.	+25 mos.	61 mos.	+25 mos. +69.4%	0 mos. 0.0%	
Percent Complete	Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
94.7%	96.5%	19.0%	1.6%/mo	5.5%	0.9%	0.9%/mo.	0.9%/mo.

From April 2016 ESA Monthly Report

Construction Progress: During the month of June 2016, the CQ032 contractor continued architectural finishes at the Yard Services Building (YSB). The contractor continued installation of mechanical facilities at the Plaza Vent Structure (PVS). Removal of the BMT underpinning system on north side of Northern Blvd. remains to be started. The contractor continued demobilization and punchlist activity throughout the project site. After receiving the GEC's design for remediation of the utility conflict the contractor will resume work at the 23rd St. Facility

Observations/Analysis: ESA reports the work at the 23rd St. facility is projected to be completed by the Substantial Completion date. Pre-existing water infiltration conditions at the 23rd St. facility and at the Plaza Structure remain to be addressed by ESA.

Concerns and Recommendations: ESA and the contractor need to re-double efforts at the 23rd St. facility to meet the Substantial Completion date. The PMOC remains concerned that the water infiltration issues at 23rd St. and Plaza Structure have not been resolved.

Harold Interlocking Contracts

CH053 Contract – Harold Structures Part 1 and G.0.2 Substation

Status: MTACC declared “Substantial Completion” for the CH053 contract on February 29, 2016, and discontinued reporting financial and construction progress as of its 1Q2016 Monthly Report. The last Forecast at Completion MTACC reported for CH053 indicates a slight decrease to \$290,321,730, as of February 29, 2016. The last cumulative construction progress MTACC reported for CH053, through February 29, 2016, was 96.1% actual versus 100.0% planned.

	1	2	3	4	5	6	
	Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$137.3M (Award)	\$296.7M	+\$159.4M +116.1%	\$290.3M*	+\$153.0M +111.4%	-\$6.4M -2.2%	
Scheduled SC Date	5/5/10	2/18/15		2/29/16A			
Duration (NTP-SC)	28 mos.	85 mos.	57 mos. +203.6%	97 mos.	+69 mos. +246.4%	+12 mos. +14.1%	
Percent Complete	Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
100.0%	96.1%	0.6%	0.1%	0.3%	0.1%	NA	Achieved SC 2/29/16

From February 2016 ESA Monthly Report (*last monthly report in which ESA reported CH053 progress)

Construction Progress: Although MTACC declared “Substantial Completion” for CH053 in February 2016, nonetheless the contractor continued to install communications duct bank, conduits for the Location 30 motor generator pad, and make punchlist repairs at the new G02 Substation and Harold Interlocking during June 2016.

Observations and Analysis: The PMOC believes that the punchlist repairs noted above could take through most of 3Q2016 to complete.

Concerns and Recommendations: The PMOC no longer has concerns about the CH053 contract, but it does recommend that MTACC and the contractor continue to aggressively pursue all remaining punchlist repairs necessary to achieve “Final Completion”.

CH057 Contract – Harold Structures Part 3

Status: MTACC’s Forecast at Completion for CH057 increased to \$90,225,843 during April 2016, although MTACC did not provide a reason for the increase in its Monthly Report. MTACC’s

forecast for Substantial Completion remained at August 18, 2017, although this contract has several options which are likely extend the eventual Substantial Completion date. Actual construction progress for April 2016 was 13.6% versus 4.2% planned. Cumulative progress through April 30, 2016, was 17.7% actual versus 9.2% planned.

	1	2	3	4	5	6	
	Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$53.4M (Award)	\$53.4M	\$0.0M 0.0%	\$90.2M	+\$36.8M +68.9%	+\$36.8M +68.9%	
Scheduled SC Date	7/5/17	7/5/17		8/18/17			
Duration (NTP-SC)	19 mos.	19 mos.	0 mo. 0.0%	21 mos.	+ 2 mos. +10.5%	+2 mos. +10.5%	
Percent Complete	Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
9.2%	17.7%	N/A	N/A	17.7%	3.9%	5.3%/mo.	5.9%/mo.

From April 2016 ESA Monthly Report

Construction Progress: During June 2016, the CH057 contractor continued to install secant and soldier and pre-cast concrete “H” piles in the East Approach Structure of Tunnel D, installed temporary lagging and support struts in the TBM reception pit, and began excavation in the reception pit. As the contractor excavated, it uncovered the TBM cutting head which had been left by the CQ031 contractor and CH057 began demolition of it. The contractor also continued to demolish the east and west abutments of the LIRR ML2 bridge over 48th St. in Queens.

Observations and Analysis: The contractor continued its field construction and demolition in June 2016 and is presently slightly ahead of schedule.

Concerns and Recommendations: The PMOC has no concerns about or recommendations for the CH057 contract at this time.

Contract CH057A – Part 3 Westbound Bypass

Status: MTACC’s Forecast at Completion for CH057A increased slightly during April 2016 to \$149,255,778 due to execution of contract modifications and scope additions. MTACC’s forecast

for Substantial Completion remained at June 6, 2017. Actual construction progress for April 2016 was 0.9% versus 0.0% planned. Cumulative progress through April 30, 2016, was 34.9% actual versus 100.0% planned (the PMOC estimates that the contract remains at least 8 months behind schedule although MTACC has not made any schedule adjustments to reflect this).

		1	2	3	4	5	6
		Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)
Contract Cost		\$103.3M (Award)	\$110.4M	+\$7.1M	\$149.3M	+\$46.0M +44.5%	+\$38.9M +35.2%
Scheduled SC Date		1/31/16	1/31/16		6/16/17		
Duration (NTP-SC)		26 mos.	26 mos.	0 mo.	44 mos.	+18 mos. +40.9%	+18 mos. +40.9%
Percent Complete		Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
100.0%	34.9%	12.8%	1.1%	5.6%	0.9%	6.3%/mo.	5.4%/mo.

From April 2016 ESA Monthly Report

Construction Progress: During June 2016, the CH057A contractor continued to de-water the entire construction site, continued excavation of the East and West Approach Structures of the Westbound Bypass Tunnel, completed assembly of tunnel shield and began excavation of the tunnel on June 20, 2016. As of June 30, 2016, the contractor had excavated a total of 20 lineal feet of the tunnel. The contractor also continued to excavate and place concrete for miscellaneous catenary foundations throughout Harold Interlocking.

Observations and Analysis: After many months of delay, the contractor began excavation of the Westbound Bypass Tunnel in June 2016. In the process, it encountered difficulties (ground harder than anticipated and difficulty controlling cutting direction of tunnel shield) which allowed it to identify the particular problems it will face for the remainder of its excavation. In the PMOC's opinion, the contractor and the PMT are taking the appropriate steps to properly address these problems, and this should make the remainder of the excavation proceed as smoothly as possible.

Concerns and Recommendations: Although excavation of the Westbound Bypass Tunnel has begun, the PMOC is concerned that it has not gone as well as anticipated. As of June 30, 2016, the contractor still remains in the "learning curve" portion of its construction. The PMOC recommends that the ESA PMT and the contractor work together to develop ways to overcome the contractor's initial difficulties and then remain vigilant for ways to improve upon the schedule, if possible.

Systems Contracts

VH051 (Part 1) – Harold and Point Central Instrument Locations (CILs) and Harold Tower Supervisory Control Ssystem (VH051 Part 2)

Status: VH051 Part 1 and 2 are procurement packages for LIRR Communications and Signal (C&S) system equipment and apparatus for the Harold and Point Interlocking Central Instrument Locations (CILs) (Part 1) and Harold Tower Supervisory Control System (Part 2), respectively. Purchase of all materials has already been made and delivery of remaining CILs will be a “just in time” for “ESA First” scheduled installation. Factory Acceptance Testing will be done prior to scheduled delivery of each CIL. The Harold Tower Supervisory Control System (Part 2) is in service. To date, both the “H4” and “H3” CILs in Harold Interlocking have been placed in service. “H5”, “H6”, and Location 30 CILs are presently scheduled for cutover in 2017 and “H1” and “H2” CILs are scheduled for 2018.

CS179 - Systems Package 1-Base Contract

Status: As of the end of April 2016, the MTACC continues to show a Forecast cost of \$608,313,473 versus a current approved Budget of \$606,938,540; the same figures as those noted in the PMOC’s previous report. No information has been provided to the PMOC regarding any details of why the Forecast exceeds the Budget by \$1.375M, or what steps the MTACC is undertaking to either decrease the Forecast or increase the Budget. In its April 2016 Monthly Report, MTACC shows a progress curve for the CS179 contract that presents actual contract progress as 20.4% versus a planned 51.1%; numbers that are based on actual versus projected costs, not physical construction efforts. As presented, these progress numbers continue to imply that the contract is moving further behind schedule from previous reports. In the Milestones chart of its April Monthly Progress Report for this CS179 contract, MTACC is now showing a July 1, 2020, Substantial Completion (SC) date; 218 days later than the original SC date. This shift in the SC date is the result of a major contract modification (Modification No. 18) that revised contract Milestone and Access Restraint dates. Modification No. 18 purportedly took into account various construction issues (e.g., water infiltration mitigations) and the award and proposed work schedule of the CM007 contract, which was awarded in April 2016. As noted by the PMOC in earlier reports, the water infiltration issue at the Vernon substation facility must still be successfully mitigated to progress CS179 Milestone No. 1 work and also work associated with the CS084 contract. Several CS179 contract options, or parts thereof, have been exercised to date as a result of the appropriate funding becoming available. As of the end of June 2016, contract Option Nos. 1A, 2A, 2B-1, 3A, 3B, 6, and 7 have been exercised and four more (Option Nos. 1B, 2B-2, 4, and 5) must still be exercised to complete the required CS179 contract scope. As the systems designs have progressed, several potential Buy/Ship America compliance issues with contract material and systems equipment were identified. Originally, these potential issues included CCTV and video display panel equipment, Heating Ventilation and Air Conditioning (HVAC) units, variable frequency drives for motors, door hardware for pressurized doors, and DC transfer switches. As of the end of June 2016, the CS179 CM indicated that compliant solutions were identified for the CCTV cameras, variable frequency drives, door hardware, and DC transfer switches; leaving only two items (main video display panels and specialized air conditioning units) as potentially non-compliant issues. In June 2016, the PMOC learned from the CS179 CM that the MTACC had rejected the last two monthly schedule updates from the contractor. Additionally, the contractor has yet to submit an acceptable schedule that incorporates the contract Modification No. 18 date revisions. Until such a comprehensive schedule is submitted, it will be impossible for anyone to

perform an analysis of the contract schedule to validate contractor assertions regarding delays. The PMOC continues to request that copies of the contractor’s monthly schedule updates, and the MTACC comments on that particular schedule, be provided to the PMOC.

	1	2	3	4	5	6	
	Original Baseline Award+ Options	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$454.6M	\$459.5M	+\$4.9M +1.0%	\$606.9M	+\$152.3M +33.5%	+\$147.5M +32.1%	
Scheduled SC Date	11/25/19	7/1/10		7/1/20			
Duration (NTP-SC)	68 mos.	68 mos.	0 mo.	68 mos.	0	0	
Percent Complete	Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total*	Avg./mo.*	Total	Avg./mo.	Contract SC	Forecast SC
51.1%	20.4%	NA	NA	5.0%	0.8%	1.5%/mo.	1.6%/mo.

* MTACC did not produce a CS179 progress curve until its November 2015 Monthly Report

Design Progress: The CS179 contractor continues to work on the design development of the various contract required systems. As noted in previous reports, the reduction of the backlog of submittal and RFI reviews remains as a serious issue and, although this continues to be an area of focus for the CS179 project team, very little progress on reducing the backlog has occurred. Discussions on ways to remedy this issue continue between MTACC-ESA senior management and LIRR management. During 2Q2016, 8 of 11 Control System designs underwent the Second Design Review (SDR) process; bringing the total number of SDRs completed to 9 out of the 11 required Control Systems. The remaining two Control Systems (CCTV & Security Management System and the Control Center Fit Out) underwent Preliminary Design Reviews in April 2016 and are currently scheduled for SDRs in July 2016. Additionally, design modifications for equipment room conflicts at the Vernon and other substation locations have yet to be completed or issued by the GEC; raising concerns from the contractor about potential schedule delays.

Construction Progress: During June 2016, the CS179 contractor continued various elements of work (conduit installations, concrete work, temporary power installations, etc.) at the 2nd Ave.; B10; Roosevelt; Vernon; 29th St.; Queens Plaza; and 39th St. facilities. In addition, the contractor began, or continued, the installation of tunnel lighting in Tunnels A, B/C, and LL and, continued the installation of Fire Stand Pipe hangers and piping in Tunnels B/C, D, and LL. The two (2) 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 is still working on solutions

to this issue and no date was given for the rescinding of the SWOs. In June 2016, work at the 23rd Street facility remained on hold as a result of an issue with water infiltration through the concrete floor. Discussions with the CQ032 contractor regarding this issue continued. An analysis of the contractor’s monthly schedule updates will be needed to ascertain if the milestones are delayed by any amount and what impact they might present to the completion of the contract. The PMOC continues to request that the contractor’s monthly schedule updates, and the MTACC’s comments on the updates, be provided to the PMOC.

Concerns and Recommendations: The PMOC remains concerned regarding the timely delivery and discussion of the contractor’s monthly schedule updates. These schedule updates are currently not available for discussion at the monthly progress meetings, nor are they, or the MTACC’s comments about them, made available to the PMOC for review and evaluation on a consistent basis. Additionally, the PMOC has concerns regarding the timely preparation and submission of any Buy/Ship America waiver requests for potentially non-compliant material or equipment on the CS179 contract. Any delay in providing compliant material or equipment could have a significant impact on the timely completion of this work. Further, the PMOC remains very concerned about the numerous water infiltration issues in the equipment rooms that are identified and the solutions that need to be developed and implemented to provide permanent mitigation of the water infiltration in rooms with electronic equipment. While a potential solution for the mitigation of water infiltration through one of the floor slabs has been identified, there is no testing method identified that would guarantee that this solution, once implemented, will permanently mitigate the problem.

CS084 - Traction Power System Package #4

Status: In its April 2016 Monthly Report, the MTACC’s Budget and Forecast for the CS084 contract remained at \$79,717,772. The forecast for Substantial Completion remained at December 2, 2019, a date that coincides with the contractor’s latest monthly schedule update. Actual construction progress for April 30, 2016 was 1.1% versus 1.7% planned, with cumulative progress through April 2016, at 7.8% actual versus 15% planned; 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. Following the June 2016 Monthly Progress meeting, the PMOC attended a special schedule meeting called by the CS084 CM to discuss the contractor’s latest schedule update. The contractor’s schedule update now shows delays to contract Milestones Nos. 1, 2, and 3 as a result of delays associated with the approval of substation designs and the resolution of Supervisory Control and Data Acquisition (SCADA) requirements. Additionally, the contractor asserts that the lack of a decision on the SCADA requirements will cause additional impacts on contract Milestones Nos. 1, 2, and 3; and, eventually, the contract’s Substantial Completion (SC) date. MTACC indicated that it would review and evaluate the contractor’s schedule submission to determine the validity of these assertions.

	1	2	3	4	5	6
	Original Baseline	Current Approved Baseline	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)

Contract Cost		\$71.2M (Award)	\$71.2M	+\$0.0 0.0%	\$79.7M	+\$8.5M +11.9%	+\$8.5M +11.9%
Scheduled SC Date		12/3/19	12/2/19	/	12/2/19	/	/
Duration (NTP-SC)		61 mos.	61 mos.	0	61 mos.	0	0
Percent Complete		Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total*	Avg./mo.*	Total	Avg./mo.	Contract SC	Forecast SC
10.5%	6.1%	N/A	NA	1.9%	0.3%/mo.	1.6%/mo.	2.2%/mo.

* MTACC did not produce a CS084 progress curve until its November 2015 Monthly Report

Design Progress: The CS084 contractor continued to transmit contractual submittals and substation design documents. However, the contractor continues to assert that delays in receiving comments back in a timely manner from the MTA are impacting its ability to meet its own design, fabrication, and installation schedules. The CS084 CM noted that the LIRR recently engaged a consulting firm to assist in processing design reviews. At the mid-June 2016 CS084 Progress meeting, it was noted that the number of overdue submittal responses has climbed to 294 out of the 388 pending a response; thus, it was not apparent to the PMOC that this additional assistance was improving the efficiency of this process. Additionally, the GEC has yet to provide design documents to address extra work related to the grounding and testing of existing transformers and panels installed earlier by one ore more ESA contractors; and, the MTA has yet to resolve the outstanding issue concerning the SCADA requirements. 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 design fix so that the CS084 contractor can install the DC cables.

Construction Progress: In May and June 2016, the contractor continued to progress the L3 electrical service work to supply electrical power from Consolidated Edison (ConEd) to various signal locations in Harold Interlocking. The contractor is forecasting an early July 2016 date for completing of the current scope of the work for the L3 electrical service work. The LIRR needs to send a letter to ConEd to establish an electrical account for the L3 service so that ConEd will energize the electrical service. In May 2016, ConEd advised the MTACC that it was not forecasting completion and energization of the L3 electrical service until October 2016. This month, the CS084 CM advised that the MTACC was taking steps to attempt to get ConEd to accelerate this work to provide electrical service as soon as possible. Additionally, field surveys of various other work site locations are on-going. The contractor continues to report delays to contract Milestone Nos. 1, 2, and 3 resulting from the contractor’s assertion of delays associated with the timely approval of substation designs and the resolution of Supervisory Control Data Acquisition (SCADA) requirements. As noted above, in the discussion on contract CS179, the

continuing water infiltration issue and the lack of approved substation and equipment designs are, per the contractor, precluding the commencement of any physical work in the substation facilities.

Concerns and Recommendations: The PMOC encourages the ESA PMT to decide upon the SCADA requirements so that the substation designs can be completed and so that any potential negative impact to the contract schedule can be mitigated. The water infiltration issues in the various facilities is, in the opinion of the PMOC, a serious problem that needs to have an acceptable mitigation methodology identified and successfully implemented so as to preclude any serious schedule impact on the CS084 and CS179 contracts. The ESA PMT needs to prioritize the steps to permanently mitigate this problem.

PMOC Note about Amtrak Force Account Packages FHA01, FHA02 and FQA65: The Substantial Completion dates shown in the following Amtrak Force Account sections reflect MTACC’s “ESA First” schedule, which originally extended each of the work packages approximately 24 months. Since the original extension, MTACC has continued to update those dates on a monthly basis.

Harold Stage I Amtrak FA (FHA01)

Status: MTACC’s Forecast at Completion for FHA01 remained at \$18,824,861 during April 2016. MTACC extended its forecast for Substantial Completion by 3 weeks to October 6, 2019. Actual construction progress for April 2016 was 0.0% versus 0.0% planned. Cumulative progress through April 30, 2016, was 98.8% actual versus 100.0% planned.

X	1	2	3	4	5	6
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	Original Baseline	Current Approved Baseline*	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$9.5M (Award)	\$18.8M	+9.3M +97.9%	\$18.8M	+9.3M +98.0%	\$0.0 0.0%	
Scheduled SC Date	9/30/10	2/4/16		10/6/19**			
Duration (NTP-SC)	39 mos.	103 mos.	64 mos. +164.1%	147 mos.	+108 mos. +276.9%	+44 mos. +42.7%	
Percent Complete	Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
100.0%	98.8%	1.0%	0.1%	0.0%	0.0%	N/A- Past Due	0.03%/mo.

From April 2016 ESA Monthly Report

*The term “baseline” is a misnomer with Force Account work. In Amtrak’s case, the “original baseline” has increased to account for scope changes as detailed in the Project Initiations (PIs) that have been executed for Stage 1. It is presented in the table to be consistent with the contract tables contained elsewhere in this report.

**Substantial Completion dates for all Amtrak Force Account Work packages extended as a result of the MTACC’s “ESA First” Schedule re-baseline.

Construction Progress: Amtrak Force Account personnel did not perform any significant Stage 1 construction during June 2016.

Observations and Analysis: As a result of the adoption of the “ESA First” construction schedule, MTACC has de-emphasized its previous program of construction by “stages”. Consequently, the remaining former Stage 1 construction elements are not presently ESA PMT priorities.

Concerns and Recommendations: Because the “ESA First” schedule re-baseline extended much of the remaining Amtrak Force Account construction, the PMOC presently has no concerns that Amtrak has the technical capacity and capability to perform the work by the revised Substantial Completion date. As a result, the PMOC has no recommendations at this time.

Harold Early Stage 2 Amtrak FA (FHA02)

Status: MTACC’s Forecast at Completion for FHA02 remained at \$60,150,231 during April 2016. The MTACC forecast for Substantial Completion was extended by 2 weeks to December 20, 2020. Actual construction progress for April 2016 was 0.0% versus 1.0% planned. Cumulative progress through April 30, 2016, was 100.0% actual versus 99.6% planned (MTACC does not offer an explanation for this discrepancy although the PMOC notes that it reports construction progress based on accumulated project cost rather than actual construction).

	1	2	3	4	5	6	
	Original Baseline	Current Approved Baseline*	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$9.70M (Award)	\$46.5M	+\$36.8M +379.4%	\$60.2M	+50.5M +520.6%	+\$14.3M +30.8%	
Scheduled SC Date	9/30/13	8/15/17		12/20/20**			
Duration (NTP-SC)	58 mos.	106 mos.	48 mos. +82.8%	146 mos.	+88 mos. +151.7%	+40 mos. +37.7%	
Percent Complete	Actual – 12 mos.		Actual- 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
99.6%	100.0%	4.2%	0.4%	N/A	N/A	1.7%	0.04%

From April 2016 ESA Monthly Report

* The term “baseline” is a misnomer with Force Account work. In Amtrak’s case, the “original baseline” has increased to account for the scope changes as detailed in the Project Initiations (PIs) that have been executed for Stage 2. It is presented in the above table to be consistent with the contract tables contained elsewhere in this report.

**Substantial Completion dates for all Amtrak Force Account Work packages extended as a result of the MTACC’s “ESA First” Schedule re-baseline.

Construction Progress: During June 2016, Amtrak Electric Traction personnel relocated catenary cables at the B911-1/4 catenary pole, installed back guy cables at the B923-1/3 catenary pole, installed cross track feeders at the B910EA catenary pole, and demolished catenary apparatus at the B924, B913, and B914 catenary poles. Amtrak Track personnel placed the #743B turnout in position in Loop 1A Track.

Observations/Analysis: Substantial Completion for FHA02 was extended as a result of MTACC’s adoption of the “ESA First” Schedule. The PMOC believes that Amtrak will be able to perform all remaining FHA02 work by the new Substantial Completion date. Please see the summary of the remaining Amtrak ESA Electric Traction Construction details in Table I in Appendix I.

Concerns and Recommendations: The PMOC has no concerns about or recommendations for FHA02 construction at this time.

Loop Interlocking CIL Amtrak FQA65

Status: MTACC’s Forecast at Completion for FQA65 remained at \$33,287,863 during April 2016. The MTACC forecast for Substantial Completion was extended by 6 months to June 5, 2023. Actual construction progress for April 2016 was 0.5% versus 0.3% planned. Cumulative progress through April 30, 2016, was 19.3% actual versus 54.7% planned. MTACC placed a “Hold” on FQA65 construction in late April/early May 2016. As a result, Amtrak abolished (laid off) its C&S personnel that were working on FQA65.

		1	2	3	4	5	6
		Original Baseline	Current Approved Baseline*	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)
Contract Cost		\$9.1M (Award)	\$21.0M	+11.9M	\$33.3M	+24.2M +265.9%	\$12.3M +58.6%
Scheduled SC Date		8/12/18	8/12/18		6/5/23**		
Duration (NTP-SC)		55 mos.	55 mos.	No Change	113 mos.	+58 mos. +105.5%	+58 mos. +105.5%
Percent Complete		Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
54.7%	19.3%	10.0%	0.8%	4.5%	0.8%	1.8%	1.0%/mo.

From April 2016 ESA Monthly Report

* The term “baseline” is a misnomer with Force Account work. In Amtrak’s case, the “original baseline” has increased to account for the scope changes as detailed in the Project Initiations (PIs) that have been executed for Stage 2. It is presented in the above table to be consistent with the contract tables contained elsewhere in this report.

**Substantial Completion dates for all Amtrak Force Account Work packages extended as a result of the MTACC’s “ESA First” Schedule re-baseline.

Construction Progress: Amtrak personnel did not perform any significant FQA65 construction during June 2016.

Observations/Analysis: Substantial Completion for FQA65 was extended as a result of MTACC’s adoption of the “ESA First” Schedule. The PMOC believes that Amtrak will be able to perform all remaining FQA65 construction by the new Substantial Completion date.

Concerns and Recommendations: The PMOC has no concerns or recommendations for FQA65 at this time.

Harold Stage 1 LIRR FA (FHL01)

Status: MTACC’s Forecast at Completion for FHL01 remained at \$24,379,363 during April 2016. The MTACC forecast for Substantial Completion was extended by 7 months to April 11, 2017. Actual construction progress for April 2016 was 0.0% versus 0.0% planned. Cumulative progress through April 30, 2016, was 86.8% actual versus 100.0% planned.

		1	2	3	4	5	6

	Original Baseline	Current Approved Baseline*	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)	
Contract Cost	\$28.8M	\$24.4M	-\$4.4M -15.3%	\$24.4M	-\$4.4M -15.3%	\$0.0 0.0%	
Scheduled SC Date	9/30/10	4/9/15		4/11/17			
Duration (NTP-SC)	39 mos.	94 mos.	+55 mos. +141.0%	118 mos.	+79 mos. +202.6%	+24 mos. +25.5%	
Percent Complete	Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress		
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
100.0%	86.8%	-13.2%*	-1.1%	0.1%	0.02%	0.1%	2.2%

From April 2016 ESA Monthly Report

* The term “baseline” is a misnomer with Force Account work. In the LIRR’s case, the “original baseline” has decreased to account for the scope changes as detailed in the Memoranda of Understandings (MOUs) that have been executed for Stage 1. It is presented in the above table to be consistent with the contract tables contained elsewhere in this report. The negative total actual percent complete since June 2015 indicates that ESA increased FHL01 funding by \$3.6M between June 2015 and December 2015.

Construction Progress: LIRR Force Account personnel did not perform any significant Stage 1 FHL01 construction during June 2016.

Observations and Analysis: Recent ESA PMT priorities have been on Stage 2 and Stage 3 work. Significant remaining LIRR Stage 1 construction includes completion and commissioning of the new signal power separation system and the new G02 Substation.

Concerns and Recommendations: The PMOC remains concerned that, because of MTACC’s present emphasis on Stage 2 and Stage 3 construction, Stage 1 work will be left incomplete until the end of the project. The PMOC believes that work not done when scheduled will tend to accumulate and may eventually delay the project’s RSD further. The PMOC recommends that the ESA PMT monitor incomplete or unstarted tasks, develop a master list of critical ones, and develop a plan to address them well before the RSD date approaches.

Harold Early Stage 2 LIRR FA (FHL02)

Status: MTACC’s Forecast at Completion for FHL02 remained at \$92,932,559 during April 2016. MTACC extended its forecast for Substantial Completion by 6 weeks to July 29, 2019. Actual construction progress for April 2016 was 0.2% versus 1.0% planned. Cumulative progress through April 30, 2016, was 85.6% actual versus 92.6% planned.

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		Original Baseline	Current Approved Baseline*	Change to Original (2-1)	EAC/ Forecast	Change to Original (4-1)	Change to Current (4-2)
Contract Cost		\$7.40M	\$78.5M	+\$71.1M +960.8%	\$92.9M	+\$85.5M +1155.4%	+\$14.4M +18.3%
Scheduled SC Date		11/30/15	11/25/16		7/29/19		
Duration (NTP-SC)		75 mos.	87 mos.	+12 mos. +16.0%	119 mos.	+44 mos. +58.7%	+32 mos. +36.8%
Percent Complete		Actual – 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo.	Total	Avg./mo.	Contract SC	Forecast SC
92.6%	85.6%	14.0%	1.2%	4.2%	0.7%	1.3%/mo.	0.4%/mo.

From April 2016 ESA Monthly Report

*The term “baseline” is a misnomer with Force Account work. In LIRR’s case, the “original baseline” has increased to account for the scope changes in the MOUs that have been executed for Stage 2. It is presented in the above table to be consistent with the contractor tables contained elsewhere in this report.

Construction Progress: During June 2016, LIRR Signal personnel installed switch heater elements and conduits for the #3154 turnout, pulled, identified, and terminated cables at the “H5” and “H6” CILs, installed signal trough at the Location 30 and “H2” CILs, installed a grounding grid at Location 30, installed internet cable at Harold Tower, and adjusted track circuits at the new #3132E turnout. LIRR Track personnel installed the new #3154 and #3132E turnouts and realigned the Westward LIRR Passenger Track. LIRR Electric Traction personnel megged cables between the HP3 and HP4 signal power separation poles and installed conduits between the “H4” CIL and Harold Tower.

Observations and Analysis: The PMOC does not consider the 2016 LIRR ESA construction program to be very aggressive with only 2 turnout installations and cutovers of the new G02 Substation and the Signal Power Separation systems (both of which have been under construction for several years) scheduled. Additionally, the last major cutover of “H5”, “H6”, and Location 30 (one cutover) has been delayed from 2016 to 2017. Although LIRR Signal personnel continue to construct the revised signal system on a daily basis, LIRR needs to pursue its Track and Electric Traction work more aggressively if it does not want construction tasks to accumulate near the end of the project.

Concerns and Recommendations: The PMOC remains concerned that LIRR Stage 2 work may not be completed on schedule and will continue to accumulate along with leftover Stage 1 and future Stage 3 work if the LIRR does not pursue its portion of the ESA construction more aggressively. The PMOC recommends that LIRR develop more aggressive Track and Electric Traction programs in future years and that it develop a master list of incomplete or unstarted tasks to ensure that all critical items needed for RSD are properly addressed.

2.4 Operational Readiness

Due to various scheduling conflicts, no Quarterly Operational Readiness (OR) briefings were held since the one in December 2015. However, documentation regarding the status of various OR Task Working Groups (TWGs) was provided to the PMOC. A review of that documentation, along with follow up telephone calls, revealed that significant progress is being made on the Safety & Security Certification and Asset Management TWGs. The other TWGs continue to meet to develop documentation and plans to operate ESA when it is ready for revenue service.

Observation: The PMOC noted that the construction Safety Certifications for the various ESA contracts are now incorporated into the overall ESA Project IPS; linking completion of the certifications to any variations in the contract substantial completion dates. Additionally, a schedule for completion of Security Certifications has been established. Both these measures demonstrate an increased focus by ESA on the entire Safety and Security Certification process.

Concerns and Recommendations: The PMOC is still requesting information regarding the status of safety certifications for the contracts still in the design phase.

2.5 Vehicles

Status: The LIRR Vehicle Procurement Schedule for the M-9 and M-9A vehicles indicates that the RFP for the M-9A was supposed to be issued during April 2016. As of June 30, 2016, however, the MTA had not authorized LIRR to begin the procurement process.

Observations and Analysis: Because the LIRR was not authorized to begin the procurement process in accordance with the plan, the PMOC estimates that vehicle acquisition is at least 3 months behind schedule.

Concerns and Recommendations: Based on the LIRR Procurement Schedule, the start of M-9A vehicle delivery is not required prior to April 2021. The PMOC is concerned, however, that MTACC and the LIRR do not have a good historical procurement track record and this delay could extend even longer. The PMOC recommends that the responsible parties do everything possible to mitigate this delay immediately in order to issue the RFP.

2.6 Property Acquisition and Real Estate

Status/Observations:

During April 2016, MTA Real Estate continued to negotiate agreements with the owners of 335 Madison Avenue, 415 Madison Avenue, and 280 Park Avenue to progress ESA construction at those locations.

Observations and Analysis: MTA Real Estate continues to perform its real estate responsibilities in an entirely effective manner.

Concerns and Recommendations: The PMOC has no concerns or recommendations for MTA real estate issues at this time.

2.7 Community Relations

Status: During April 2016, MTA Community Relations continued its community outreach program in Manhattan, Queens, and Sunnyside to notify residents and businesses of upcoming ESA construction activities, especially Signal Bridge 23 construction, in Sunnyside.

Observations and Analysis: The MTACC Community Relations Staff continues to perform its outreach campaign in an entirely effective manner.

Concerns and Recommendations: The PMOC has no concerns about ESA community relations at this time and recommends that the ESA Community Relations staff continue to perform its duties in the same manner as it has in the past.

3.0 PROJECT MANAGEMENT PLAN AND SUB PLANS

Status:

MTACC submitted PMP Rev. 10 to the FTA and PMOC on July 18, 2014. This revision incorporates changes stemming from FTA/PMOC comments on PMP Rev. 9.0 provided in December 2013, as well as changes that resulted from the MTACC's Candidate Revision process. Based on working meetings, dialogue, and additional clarifying review comments from the PMOC, MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The PMOC completed its review and evaluation of MTACC's revisions and responses and submitted its findings to FTA-RII in 4Q2014. MTACC subsequently submitted a revised Rev. 10 on March 13, 2015, that included updated information on the Change Control Committee. The PMOC coordinated with MTACC to arrange a series of working meetings with ESA chapter authors and the corresponding PMOC reviewers to resolve the outstanding FTA/PMOC evaluation comments. Several working meetings were held during the period from May 2015 through December 2015.

Observation: The PMOC is working with MTACC to resolve the remaining issues, mostly minor, with the PMP and will follow up with FTA in finalizing responses.

Concerns and Recommendations: There are no major concerns at this time.

3.1 PMP Sub-Plans

Status:

The status of the key PMP sub-plans is discussed in the ELPEP Compliance Section of this report. MTACC issued updates to its TCC and Cost Management Plans in June 2015. The PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments on both the TCC and the CMP and recommended meeting with MTACC to resolve remaining issues. The FTA subsequently provided MTACC with the TCC and CMP evaluations for their review and action. MTACC responded with a reply for the TCC on September 24, 2015.

MTACC submitted its revised Cost Management Plan (ESA and SAS) on April 13, 2015. The PMOC returned comments to the FTA on May 8, 2015. The MTACC submitted a revised CMP in response to FTA/PMOC comments on June 30, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and met with MTACC on November 16, 2015. MTACC is working on additional agreed revisions and is evaluating the PMOC's recommendations in six areas. MTACC issued an interim revision update in December 2015 and the PMOC completed its review in early June 2016. MTACC and the PMOC met on June 22, 2016, to review the PMOC comments. MTACC will follow up with the PMOC regarding any remaining actions.

MTACC issued its revised Schedule Management Plan (SMP), which now includes both the ESA and SAS projects, on October 26, 2015. The PMOC completed its review in June 2016.

Observations:

MTACC has revised its TCC Plan, Cost Management Plan, and its Schedule Management Plan. The PMOC anticipates updates to the Risk Management Plan.

Concerns and Recommendations:

MTACC needs to ensure that the proper candidate revisions are prepared and presented to the CCC for approval before any changes are incorporated into these plans.

3.2 Project Procedures

Status: Revisions to the CMP and SMP may require updates to the referenced Project Procedures. The PMOC will evaluate the need for any required updates to the Project Procedures in conjunction with the effort to close out all remaining comments on the CMP and SMP.

Observations: None

Concerns and Recommendations: There are no significant concerns at this time.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The most significant change during 2Q2016 was that the PMT reported that the Manhattan Systems work no longer controls the critical path to the Late RSD. During the March 2016 IPS update, the critical path to the Late RSD changed to be controlled by Harold work and has remained that way for the April 2016 IPS updates. The critical path of IPS Update #81 goes through the following contracts and tasks, leading to the Late RSD of December 13, 2022:

- Wiring, Testing, and cable termination atr Harold MG Function;
- Implementation of Cut-over sequencing plans (phases 0, I, and II);
- 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).

The May 1, 2016 ESA IPS (Update No. 81) reported the following regarding the critical path:

In April, the GEC and LIRR SYSTRA LOC30 concurrent design submission review was completed. The Harold critical path for this month now starts with Ansaldo STS's addressing of the LOC30 submission review comments and incorporation of them into the resubmission. The critical path then continues on into the GEC/LIRR re-submission review, LIRR simulation and comments, then LIRR approval. It then flows through the H5/H6/Loc 30 (2G) pretesting and 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 then 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. The current IPS forecasts the Target Revenue Service Date (RSD) in February 2021, with the Late RSD forecast for December 2022.

Observations, Analysis, and Concerns:

It is noted that the ESA 2012 Schedule Re-Baseline was in place for only two years before the next re-baseline was established in 2014. This is indicative of the need for an updated Basis of Schedule that would address the issues that caused the failure of the 2012 baseline. The PMOC is concerned about the basis of ESA’s schedule and the fact that the IPS baseline has not been preserved since July 2014.

1. The PMOC has observed changes in the Harold critical path, with regard to durations, logic, and sequencing of activities. The PMOC recommends that the PMT explain any changes to the program’s critical path in detail in its IPS report. The specific issues noted by the PMOC are listed below, in Section 4.3 of this report.
2. The PMOC has observed that the IPS contains a large amount of open-ended activities. An open-ended activity is defined as an activity that is not logically connected to the rest of the CPM schedule network – i.e. that it does not have a predecessor and/or successor activity. This results in an incomplete network within the IPS. Good scheduling practices require that the only activity in a CPM schedule without a predecessor is the first activity or milestone, and the only activity that should not have a successor is the last activity or milestone. FTA requires that the schedule be “mechanically correct and complete,” which the PMOC takes to include a complete logic network throughout the IPS. The PMOC recommends that the PMT provide its reasoning for having an incomplete network within its IPS and how the PMOC/FTA can be assured that impacts resulting from changes to important milestones or activities month-to-month are picked up in follow-on work.

4.2 180-Day Look-Ahead of Important Activities

Table F-2 in Appendix F shows package-specific 180-day Look-Ahead (this table reflects milestones and significant activities that are forecasted to occur in the next 180 days). Table 4.2 below is a list of upcoming contracts in the next two quarters as reported by the PMT.

TABLE 4.2 – 3Q and 4Q2016 Upcoming Contracts

Contract Description	Advertise Date	Bid Date	NTP	Project Period	Substantial Completion
CM015 48th Street Entrance	8/25/2016	10/20/2016	1/3/2017	24 Months	1/3/2019
CQ033 Mid-Day Storage Yard	7/18/2016	9/21/2016	12/29/2016	40 Months	4/10/2020
CH061A Tunnel A	5/23/2016	7/12/2016	10/25/2016	16 Months	2/27/2018
CS086 Systems Package 2: Signal	9/6/2016	10/17/2016	12/12/2016	43 Months	7/1/2020

4.3 Critical Path Activities

As the PMOC tracks progress along the program’s critical path, changes were noted between the remaining work along the March and April 2016 IPS Harold critical paths. The PMOC is concerned about changes to critical path activities with regard to duration, logic, and sequencing of activities. There appears to be some discussion of these changes within the associated IPS update reports, but the PMOC believes the discussion to be general and not developed with enough detail. The following items are of concern to the PMOC and recommends that the PMT provide additional details regarding these items:

1. The type of logical relationship between critical activity FHL0266330: Cutover (2G) H5 / H6 / Loc 30 CIL (2G) w/o Diamond Crossover and its critical successor activity FHL02-CSR460: Pre-testing – H1/H2/Loc 30 was changed between the March and April 2016 IPS updates. The March 2016 IPS update shows these activities connected with a Finish-to-Start (FS) relationship with a zero-day lag; meaning that FHL02-CSR460 cannot begin until its predecessor FHL0266330 is complete. However, the April 2016 IPS update shows that while the type of relationship remained the same (FS), a negative five (-5) day lag was introduced. This allowed the forecasted start of FHL02-CSR460 to begin before its predecessor FHL0266330 was complete. The PMT should explain this change and how it was determined and agreed upon by all affected parties.
2. The Harold critical path leading up to the Late RSD contains an activity towards the end that represents approximately 30 working days for LIRR training as a predecessor to LIRR-3M20: LIRR Final 3 Months Period. However, in the PMT’s March 2016 IPS update, this activity is represented by CONT-P130: Train Contract Staffs LIRR prior to LIRR 3 Months Period, while in the PMT’s April 2016 IPS update, this activity is represented by LIRR-3M-CONT20: LIRR Planning Ready for Final LIRR/ Training. The PMT needs to explain why the Activity ID and Description for this critical activity changed between the March and April IPS updates and whether this is meant to represent the same work.

The PMOC recommends that any change in critical path activities between updates should be described in more detail in the associated IPS report.

4.4 CS179 Systems Package 1 – Facilities Systems

ESA provided in the IPS several Milestone Date Tables and Table 4.4 below is a sample of the table provided for CS179 Systems Package 1 – Facilities Systems in the PMT’s April 2016 IPS report:

TABLE 4.3 - CS179 Contractor Milestone Dates

Milestone	Description	Contract Date	Last Month	Current Month	*Delta (CD)
MS #1	Complete All Work in TPSS C05 at Vernon Blvd Ventilation Facility	12/31/2016	12/31/2016	12/31/2016	0
MS#3	Complete All Work Plaza Rooms (CIR, Signal Reactor, Interlocking 1D, TPSS C06 & C07)	12/31/2016	12/31/2016	12/31/2016	0
MS #4A	Complete All Work in Traction Power S/S C04 on Level P1 in 2 nd Ave. Vent Facility	2/1/2017	2/1/2017	2/1/2017	0
MS #5	Complete All Work in GCT-6 CIR to Room Ready Condition	4/30/2017	4/30/2017	4/30/2017	0
MS #6	B10Complete All Work in Bulk Power Substation for Energization of 13.2 kV Cables	1/31/2017	1/31/2017	1/31/2017	0
MS #7	Complete All Work in GCT-5 CIR to Room Ready Condition	4/30/2017	4/30/2017	4/30/2017	0
MS #8	Complete All Work in GCT-4 CIR to Room Ready Condition	4/30/2017	4/30/2017	4/30/2017	0
MS #9	Complete All Work in Traction Power Substations C01 and C02 - Tail Tracks	6/8/2017	6/8/2017	6/8/2017	0
MS #10	Complete All Work in GCT-3 CIR to Room Ready Condition	9/6/2017	9/6/2017	9/6/2017	0
MS #11	Complete All Work in Traction Power Substations C03 at 55th Street Vent Facility	3/25/2018	3/25/2018	3/25/2018	0

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

Milestone	Description	Contract Date	Last Month	Current Month	*Delta (CD)
MS #12A	Complete All Work in the TMC, TOC, BCS, and FON to Commence IST	9/1/2018	9/1/2018	9/1/2018	0
MS #12B-1	Complete Integrated Testing of all equipment installed under Contract CM007	3/23/2020	3/23/2020	3/23/2020	0
MS #12B-2	Complete Integrated Testing of all equipment installed under Contract CM014A	3/23/2020	3/23/2020	3/23/2020	0
MS #12B-3	Complete Integrated Testing of all equipment installed under Contract CM014B	3/23/2020	3/23/2020	3/23/2020	0
MS #13	Substantial Completion	7/1/2020	11/25/2019	7/1/2020	0

It should be noted that the above Contract Dates changed significantly as a result of the approval of Mod18. The PMOC has observed that the PMT's IPS report has stopped tracking some milestones in the above table between its March and April 2016 updates. For example, Milestone #2 and Milestone #4B were previously tracked and included in the table above for the March 2016 update, but were deleted and are no longer being tracked.

4.5 Force Account Work

The PMOC has noted a trend in Force Account Work not being completed as scheduled, due to a lack of resources within LIRR and Amtrak personnel needed to perform the work. Due to the concern that this work may begin to have an impact on the Project, the PMOC has been tracking this work and will begin to incorporate an analysis of any noted delays in these reports.

█ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

5.0 PROJECT COST

Note: All references to expenditures in this report are with respect to the current cost baseline that was agreed upon at the MTA CPOC meeting in June 2014.

5.1 Budget/Cost

Table 5.1 below shows the

changes in the SCC budget breakdown between the FFGA Baseline budget and the 2014 re-planned budget.

Observations: It is expected that the results of the ongoing Harold Schedule Status update and the ongoing Force Account Overrun Analysis will reveal further schedule issues and resultant cost impacts. The current forecast of Force Account costs does not include any amounts from these studies. The forecast must therefore be considered as optimistic. In addition, the results of the in-depth risk assessment for Contract CQ033 have not yet been reported. This outcome may also affect future forecasts.

Concerns and Recommendations: [REDACTED]

Table 5.1: Comparison of Standard Cost Categories: FFGA vs. CBB

Standard Cost Category (SCC) No.	FFGA SCC baseline (YOES) M	June, 2014 Re-Plan (YOES)	Q2 2015 SSC (YOES) M	Q3 2015 SSC (YOES) M	Q4 2015 SSC (YOES) M	Q1 2016 SSC (YOES) M	CBB Variance from FFGA %
10	1,989	3,405	3,432	3,421	3,420	3,443	73.10%
20	1,169	2,238	2339	2,339	2,338	2,314	97.95%
30	356	474	474	473	472	472	32.58%
40	205	611	583	593	593	594	189.76%
50	619	606	576	565	566	569	-8.08%
60	165	220	219	219	218	216	30.91%
70	957	210	210	210	210	210	-78.06%
80	1,184	1,975	1,975	1,975	1,976	1,977	66.98%
[REDACTED]							
[REDACTED]							
100	1,036	1,036	1,036	1,036	1,036	1,036	0.00%
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

*This total amount does not include Regional Investment amount of \$758,260,953.
 Note: Sum of rounded values for current month is less than actual summed value.

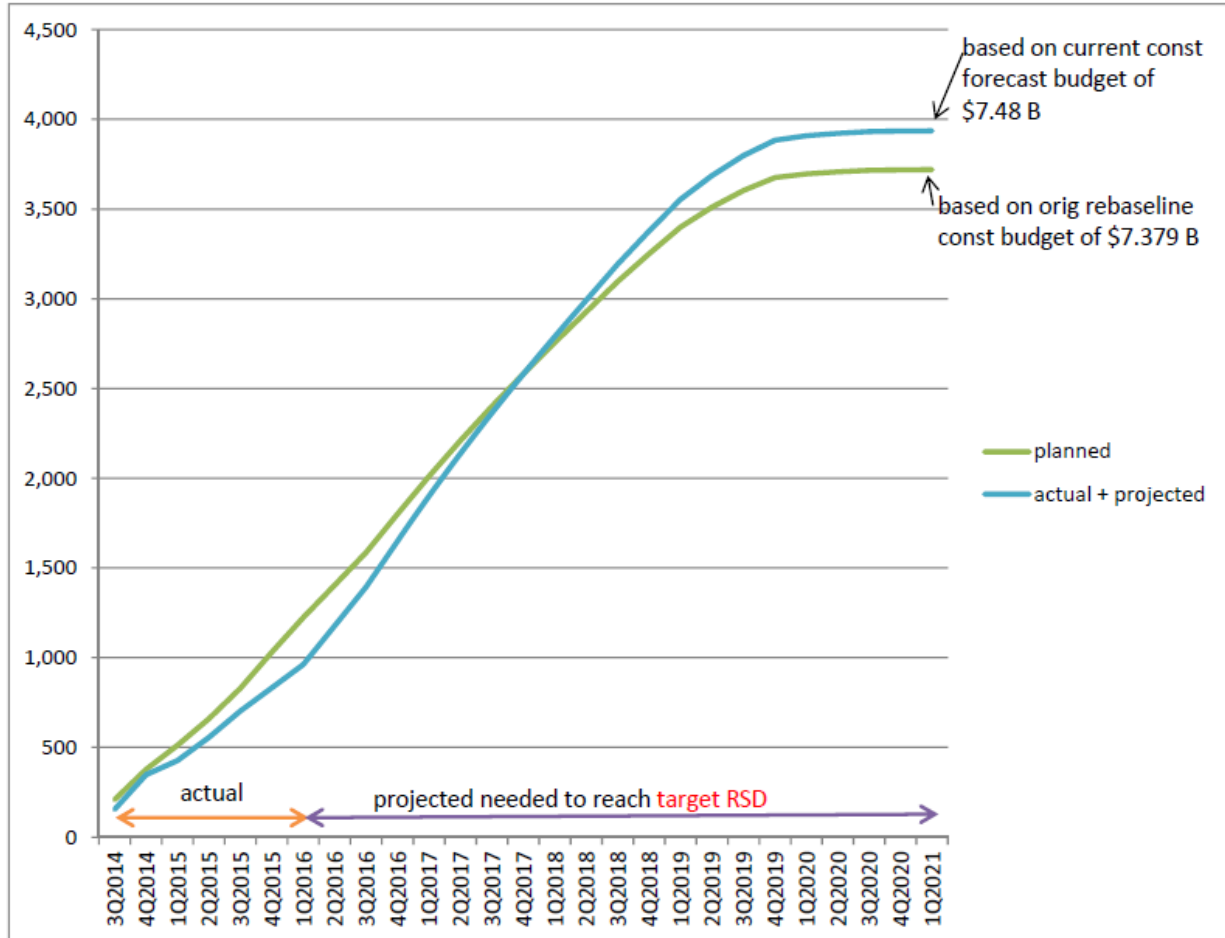
5.2 Project Cost Management and Control

Status:

The PMT has reported that, as of May 1, 2016, the actual total project progress was 62.8% vs. 64.4% planned progress resulting from the June 2014 re-baseline (based on the total amount invoiced compared to the total current budget). In addition, construction progress was reported as 62.8% actual vs. 65.1% planned. Table 5.2 shows the planned construction spending through

completion at the target RSD vs. actual spending through 1Q2016, and projected required spending.

Table 5.2 Planned, Actual & Projected Construction Cash Flows to Target RSD



Construction Cash Flow - Starting at 2014 Rebaseline

Table 5.2 - The "planned" curve shows construction cash flow that was planned by ESA at the 2014 re-baselining in order to reach revenue service by the 1st quarter of 2021. At that time the total construction budget was \$7.38 billion. The vertical axis is \$million, starting at \$0 at the time of the re-baselining. The "actual" curve, up to the 1st quarter of 2016, shows actual construction spending as reported by ESA. The "projected" portion of that curve, from the 1st quarter of 2016 through the 1st quarter of 2021, shows the PMOC's projected construction spending rate to reach the current \$7.48 billion final construction budget by the 1st quarter of 2021.

Table 5.3 shows the budget status of contracts awarded to date and invoiced amounts to date.

Table 5.3: Project Budget and Invoices As of May 1, 2016

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (April 2016)	Actual Awards (April 2016)	Paid to Date (April 2016)	Actual % Budget Paid
Construction	\$7,379,296,706	7,468,573,285	6,382,959,010	4,521,332,195	60.54%
Soft Costs Subtotal	\$2,798,474,304	\$2,709,197,725	\$1,817,634,061	\$1,688,406,231	62.32%
Engineering	\$720,615,810	\$723,521,828	\$684,403,356	\$666,668,604	92.14%
OCIP	\$282,613,620	\$282,613,620	\$282,613,620	\$214,730,699	75.98%
Project Mgmt.	\$972,168,644	\$972,168,644	\$734,139,903	\$692,309,681	71.21%
Real Estate	\$182,076,230	\$178,049,781	\$116,477,182	\$114,697,247	64.42%
Rolling Stock	\$202,000,000	\$202,000,000	\$0	\$0	0.00%

Concerns and Recommendations:

The PMOC recommends that ESA complete and present the Harold and Force Account Overrun Analysis in short order, so that the impacts may be incorporated into the cost forecast. The ESA PMT has stated that it continues to have a critical shortage of Amtrak resources and has indicated that it will escalate these concerns to high level Amtrak officials. The ESA PMT has also indicated that the future cutovers of CILs will require increased resources from LIRR.

5.3 Change Orders

Table 5.3 below shows the executed mods greater than \$100,000 during April 2016:

Table 5.4: ESA’s Change Order Log in April 2016 (>\$100,000)

Contract	Mod #	Description	Executed Date	Amount
Harold Structures Part 3-CH057	2	Fibre Manhole FMH1 relocation & UPB ductbank	4/14/16	\$133,122.
Harold Structures Part 3 WBBP – CH057A	14	Removal of ductbank in conflict with west approach	4/14/16	\$205,000
Harold Structures Part 3 WBBP – CH057A	16	Signal bridge 16 north foundation	4/14/16	\$112,200
Harold and Point CILs – VH051A	12	Excusable Time Extension to Dec 31, 2016	4/6/16	\$103,617
GCT Concourse/Facilities fit-out – CM014B	14	North sub-station ConEd mech interlocks	4/15/16	\$123,556
Manhattan Structures South – CM005	24	Lower level cavern walls reconciliation	4/20/16	\$251,283
Plaza Substation & Queens Structures – CQ032	70	Yard services building MEP & ped bridge interface changes	4/20/16	\$438,000
GEC Design Engineering	114	Repackage CH058	4/6/16	\$475,866
GEC Design Engineering	119	Catenary structures repackaging	4/6/16	\$111,506
GEC Design Engineering	116	48th St entrance revisions	3/4/16	\$1,218,414

Status/Observation:

The information in Table 5.3 above is taken from the ESA Monthly Progress Report of April 2016. The PMOC believes that there are several Mods which were executed in January 2016 with values greater than \$100,000 which should also appear in the table:

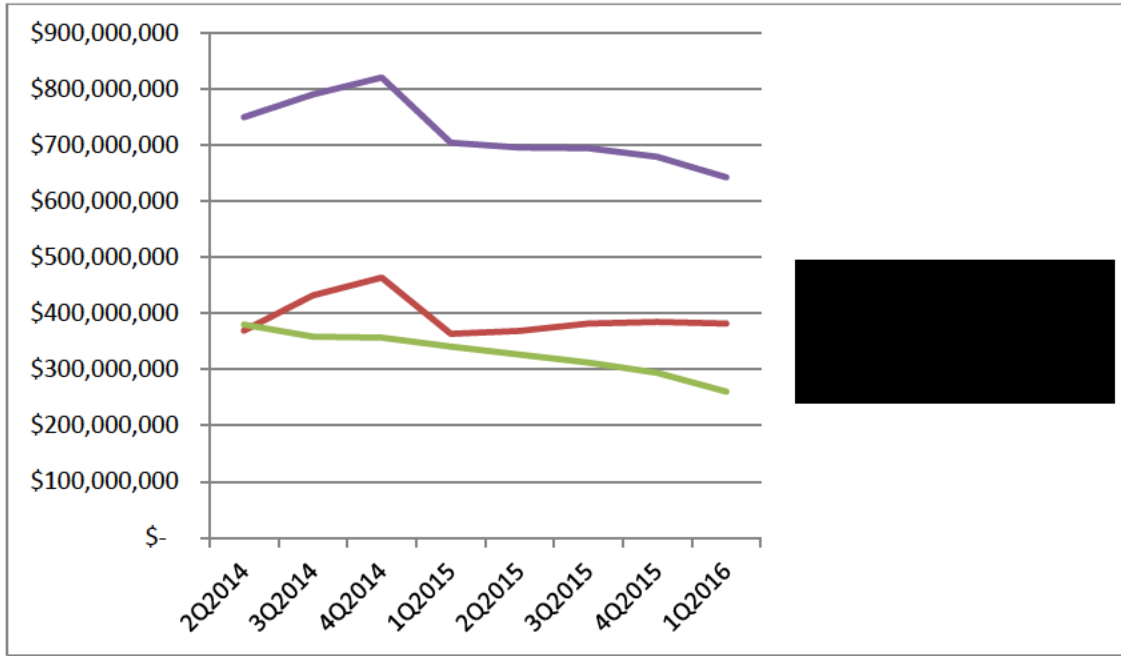
Mod 0037 Bechtel/URS/Greiner JV Extension to Dec 31 2017 \$25,413,603

Mod 00014 Jacobs Engineering Extension to June 30, 2016 \$9,445,968

5.4 Project Funding

a) Federal Funding

[REDACTED]



6.0 RISK MANAGEMENT

The PMOC had previously reported that it was concerned about inadequate support of the program level risk management process due to the lack of continuity of supervision created by turnovers and vacancy of the ESA Risk Manager position in 2015. This concern was resolved during 2Q2016 based on the PMOC’s observation that the new ESA Risk Manager, who started on the

project in January 2016, has demonstrated his ability to accomplish the restoration of the risk management process.

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 completion of the planned Harold work, including the High Speed Rail scope, by 2020. The PMOC does note, however, that Amtrak's decision about taking ERT Line 2 out of service first, in 2019, for the 18-month reconstruction work 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 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 impacts are still being evaluated and are expected to be available in July 2016.

6.1 Risk Process

Status/Observations:

The PMOC observes that the new ESA Risk Manager has been actively working to re-establish the ESA risk management process as a key element for the PMT's decision making process. He has resumed the program risk meetings with the PMOC and held meetings in March 2016 and June 2016. A series of preliminary meetings to cover the CQ033 scope, schedule, and budget were held in early May 2016. The facilitated risk workshop for CQ033 was conducted over a two day period on May 10 and 11, 2016.

Concerns and Recommendations:

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. With the CPRB approval, the ESA funding issue is no longer a risk through 2019, the remaining time of the current Capital Plan.

The PMOC had previously expressed its concern that procurement delays have significantly reduced the time for negotiations on the CM007 contract that had been on the program schedule critical path but is now on the secondary Manhattan/Systems critical path. MTACC was not able to award this contract as planned before December 31, 2015, but did award the CM007 contract on April 11, 2016, and this resulted in a 3.5 month delay to the secondary Manhattan/Systems critical path.

The 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 with regard to the construction and testing interface management for the systems work. When combined with the extensive scoping re-configuration changes associated with the Harold Interlocking work, the PMOC believes that this may create significant changes to the overall project risk profile.

6.2 Risk Register

Status/Observation:

Due to the lack of continuity of leadership for the risk management process caused by the resignation of the ESA Risk Manager in October 2015, the PMT had not been able to update the risk register on a regular basis. This situation is being resolved by the new ESA Risk Manager who started work on the ESA project in January 2016. He has issued a draft updated program

Risk Register during 2Q2016 and is working on some revision to the register to streamline the risk review and tracking process.

Concerns and Recommendations:

ESA needs to continue regularly scheduled updates of the Risk Register as called for in the RMP. The ESA Risk Manager is actively working to resume this process.

The PMOC considers the major risks for the East Side 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 for both construction and third-party contractor support in Harold Interlocking [increasing risk trend noted in 4Q2015, 1Q2016 and 2Q2016]; and,
- Continued availability of required track outages in the Harold Interlocking.

6.3 Risk Mitigations

Current Risk Mitigation Efforts:

The PMOC notes that the PMT is implementing mitigation strategies for a number of identified risks. Examples include advancing procurement of the eight CILs for the Mid-Day Storage Yard and actively engaging Amtrak to develop some specific strategies to mitigate many of the identified risks, to pursue labor agreements that will provide flexibility and additional resources to allow more third-party work in Harold Interlocking. Implementation of the Harold schedule re-sequencing to support the “ESA First” approach of advancing work elements required to provide LIRR service into GCT will help mitigate some of the schedule delay risks. However, implementation of the Harold re-sequenced schedule has not met the established goals because Amtrak has not been able to provide the necessary force account support to the third-party contractors and complete their own force account construction work elements on schedule. As a result, MTACC has reviewed the 2015 Harold schedule re-sequencing plan to determine the detailed causes of the schedule slippage. MTACC has revised the Harold schedule to reflect the current status and expected level of support from Amtrak and LIRR and the associated revision to the Integrated Project Schedule shows that the remaining work in the Harold Interlocking is now on the program critical path. MTACC continues to re-evaluate the cost of force account support going forward and the results of this effort are expected in July 2016.

Concerns and Recommendations:

MTACC has completed several programmatic risk assessments and multiple package level risk reviews. The PMOC believes that MTACC is capable of developing effective mitigation strategies for the risks identified, tracking and reporting on them on a regular basis as required by the RMP. MTACC needs to continue to focus on developing, updating, and implementing effective mitigation plans for both the currently identified major risks and for future potential risks.

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 schedule performance of 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. The PMOC does note, however, that MTACC believes that Amtrak's decision about ERT Line 2 will not impact the remaining work in the Harold Interlocking required to provide LIRR service to Grand Central Terminal.

During 2Q2016, ESA continued to experience a worsening trend of insufficient Amtrak Force Account personnel, predominately Electric Traction (ET), to properly support its 3rd Party contractors currently working in Harold Interlocking, CH053, CH057, and CH057A.

Additionally, the ESA PMT has reported that it does not receive all the rack outage it requires to do the work that it schedules. The ESA PMT has stated that both of these conditions have been major factors for why Harold construction recently became the critical path of the ESA Project. The PMOC recognizes ESA's efforts to rebaseline the remaining work in the Harold Interlocking to reflect more realistic expectations of Amtrak support. However, the situation continues to deteriorate and the PMOC recommends that the PMT engage senior management in MTACC and MTA to assist with resolution of this problem [ESA-124-Jun16].

7.0 PMOC CONCERNS AND RECOMMENDATIONS

Priority in Criticality column

1 – Critical 2 – Near Critical

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
ESA-114-Sep13	3.0 ELPEP Compliance	<p><u>ELPEP Compliance:</u> With MTACC’s submission of its East Side Access FTA Quarterly Report (Apr, May, June ’13) and then continuing with all subsequent reports through April 2016, the PMOC notes that the ESA project continues to be partially non-compliant with ELPEP and is not meeting some of the more important requirements of the SMP and CMP sub-plans to the PMP.</p> <p><u>Status Update:</u> Specific areas of non-compliance were provided to MTACC at the September 12, 2013 ELPEP Quarterly Review Meeting and additional details provided on October 30, 2013. MTACC provided preliminary draft responses (partial) to the PMOC list of ELPEP non-compliances at the December 12, 2013, ELPEP Quarterly Compliance Meeting. MTACC and the PMOC met on February 27, 2014, to discuss the FTA and PMOC’s concerns. At that meeting, MTACC acknowledged the need for more transparency/clarity in documenting the cost/schedule management processes to support traceability in the decision making process. Since that time, the PMOC has endeavored to engage the ESA Project Controls in productive discussions regarding improvements to cost and schedule reporting during the monthly cost and schedule review meetings. MTACC noted that both Cost and Schedule Management Plans will be revised, after completion of the PMP update, to improve the management processes and reporting. MTACC submitted the revised CMP on June 30, 2015 and two review cycles culminated in a working meeting on November 16, 2015 to review outstanding PMOC issues/concerns. MTACC issued an interim revision update of the CMP in December 2015 and the PMOC completed its review and met with MTACC in June 2016. The revised SMP was submitted by MTACC on October 26, 2015 and the PMOC completed its review in June 2016.</p> <p>The PMOC notes that the updated TCC Plan was expected earlier in 2014 but was submitted on June 11, 2015, based on finalization of the role, responsibilities, and level</p>	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		<p>of authority of the ESA Change Control Committee. The FTA has provided MTACC with the PMOC review comments on both the TCC and the CMP. The PMOC is in the process of resolving all remaining issues with MTACC via working level meetings.</p> <p><u>Recommendation:</u> The PMOC will continue to work with MTACC at the monthly cost and schedule review meetings to advance progress in this area. Although some improvements to the transparency/clarity and traceability of the decision-making process with regard to cost and schedule have been noted, the PMOC’s opinion is that MTACC’s continued efforts to improve are still needed.</p>	
ESA-120-Sep15	3.f Third Party Construction	<p><u>CM006 (Manhattan North Structures):</u> The contractor was behind the contract schedule and not meeting its recovery schedule.</p> <p><u>Status Update:</u> At the end of 1Q2016 ESA and the contractor reached agreement on a new schedule that aligns with the CM007 contract access requirements, eliminates interim milestones, and establishes new Substantial & Final Completion dates. A contract modification for the new schedule has not been executed due to legal issues that are being resolved. ESA and the contractor continued to use both new and old CPM schedules for tracking progress of work</p> <p><u>Recommendation:</u> ESA needs to complete the execution of the contract modification so that a realistic schedule is available to track construction progress.</p>	1
ESA-121-Sep15	2.2 Procurement	<p><u>CM007 (GCT Caverns and Finishes):</u> The procurement of this contract that is on the program schedule critical path continues to be extended.</p> <p><u>Status Update:</u> The PMOC is concerned that the CM007 contract proposal due date has been delayed a total of 4.5 months. This significantly reduced the time for negotiations on this very large contract that is currently on the program schedule critical path. Award of this contract had been scheduled to be awarded by December 31, 2015, but was not achieved. Although the contract was “approved” by the MTA Board in January 2016, it was not awarded until April 11, 2016 and has delayed the secondary Manhattan/Systems critical path by 3.5 months.</p>	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		<u>Recommendation:</u> With award of Contract CM007 on April 11, 2016, this issue is now closed.	
ESA-122-Jun16	1.6 Project Quality	<p><u>Quality Staff Insufficient and Quality Manager has resigned:</u> The original Quality Staff in 2015 consisted of Quality Assurance Manager and a staff of five Quality Managers/Engineers.</p> <p><u>Status Update:</u> Since then, a Quality Manager/Engineer left in July 2015 who covered CS179 and CS084 and the Quality Assurance Manager is resigning as of Friday July 15, 2016. This will leave a Quality Staff of four. Out of the remaining staff, one quality representative covers CM007 and CS179, a second representative covers CM005 and CM006, a third representative is covering CQ014B and CH057A, and the final representative is covering CH053 and CH054 contracts (which are closing) and CQ032 and CH057. The Quality Assurance Manager was covering CS084 and VM014, which will now need to be covered. No word has been received for the replacement of the Quality Assurance Manager nor any replacement of staff.</p> <p><u>Recommendation:</u> The PMOC recommends that MTACC fills these vacant positions as soon as possible to return to it's original staff level.</p>	1
ESA-123-Jun16	1.4b Federal Regulations	<p><u>Track Turnouts for LIRR – continued delays to finalizing specification.</u></p> <p><u>Status Update:</u> There are approximately 41 turnouts remaining (from former Stages 3 and 4) to be installed in Harold Interlocking. These turnouts need to be “Buy America” compliant. During 3Q2015, the ESA PMT authorized the GEC to develop compliant specifications for, and in coordination with, the LIRR. As of June 30, 2016, however, the parties have not been able to completely develop specifications. This could have a severe negative impact on delivery of turnouts after a procurement order is eventually placed.</p> <p><u>Recommendation:</u> The PMOC recommends that the ESA PMT take a more aggressive approach with the GEC and the LIRR to develop the required specifications as soon as possible and to concurrently prepare all preliminary internal documentation so that an order can be placed immediately after the specification is approved.</p>	2

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
ESA-124-Jun16	6.3-Risk Mitigations	<p><u>Continued issues with insufficient Amtrak FA support of third-party contractors and lack of required track outages.</u></p> <p><u>Status Update:</u> During 2Q2016, ESA continued to experience a worsening trend of insufficient Amtrak Force Account personnel, predominately Electric Traction (ET), to properly support its 3rd Party contractors currently working in Harold Interlocking, CH053, CH057, and CH057A. Additionally, the ESA PMT has reported that it does not receive all the rack outage it requires to do the work that it schedules. The ESA PMT has stated that both of these conditions have been major factors for why Harold construction recently became the critical path of the ESA Project.</p> <p><u>Recommendation:</u> The PMOC recognizes ESA’s efforts to rebaseline the remaining work in the Harold Interlocking to reflect more realistic expectations of Amtrak support. However, the situation continues to deteriorate and the PMOC recommends that the PMT engage senior management in MTACC and MTA to assist with resolution of this problem.</p>	2

8.0 GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS

Priority in Criticality column 1 – Critical 2 – Near Critical

Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution Date
ESA-A46-Dec12	Section 4.2	The ESA PMT agreed at a meeting held with FTA/PMOC on July 30, 2012, to develop a set of critical metrics jointly with the FTA/PMOC and MTA IEC that would be used as an early indicator of issues that need to be addressed by senior management. The need to do this was reiterated at the November 8, 2012, ESA/SAS mini-quarterly meeting. Critical metrics cannot be properly updated until approved baseline schedules are fully incorporated into their respective IPSs. At present, ESA has incorporated the latest Harold Re-Sequencing, developed in 2Q2016, into the IPS schedule. MTACC needs to check the schedule baseline related to the activity ID numbering so that an accurate comparison can be completed between the July 2014 baseline and the current monthly IPS updates.	2	8/30/16

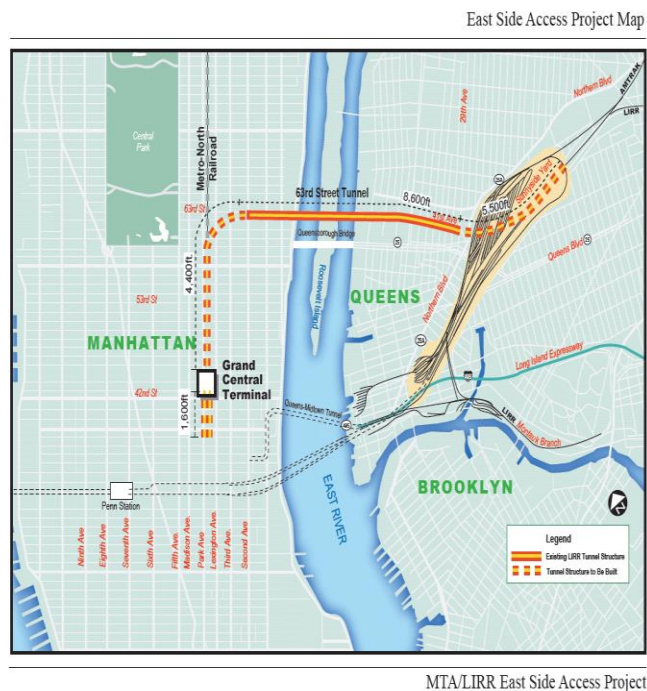
APPENDIX A - LIST OF ACRONYMS

ARRA	American Recovery and Reinvestment Act
CBB	Current Baseline Budget
C&S	Communication and Signals
CCC	Change Control Committee
CCM	Consultant Construction Manager
CM	ESA Construction Manager assigned to each contract
CMP	Cost Management Plan
CPOC	Capital Program Oversight Committee
CR	Candidate Revision
CIL	Central Instrument Location
CPRB	Capital Program Review Board
CPP	Contract Packaging Plan
DCB	Detailed Cost Breakdown
ELPEP	Enterprise Level Project Execution Plan
ERT	East River Tunnel
ESA	East Side Access
ET	Electric Traction
FA	Force Account
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
GCT	Grand Central Terminal
GEC	General Engineering Consultant
HTSCS	Harold Tower Supervisory Control System
IEC	Independent Engineering Consultant (to MTA)
IFB	Invitation for Bid
IPS	Integrated Project Schedule
IST	Integrated System Testing
LIRR	Long Island Rail Road
LTA	Lost Time Accidents
MEP	Mechanical/Electrical/Plumbing
MNR	Metro-North Railroad
MTA	Metropolitan Transportation Authority
MTACC	Metropolitan Transportation Authority Capital Construction
N/A	Not Applicable

NTP	Notice to Proceed
NYCT	New York City Transit
NYSPTSBS	New York State Public Transportation Safety Board
OR	Operational Readiness
PE	Preliminary Engineering
PEP	Project Execution Plan
PMOC	Project Management Oversight Contractor (Urban Engineers)
PMP	Project Management Plan
PMT	Project Management Team
PQM	Project Quality Manual
PWE	Project Working Estimate
QA	Quality Assurance
RAMP	Real Estate Acquisition Management Plan
RAP	Rail Activation Plan
RFP	Request for Proposal
RMP	Risk Management Plan
ROD	Revenue Operations Date
ROW	Right of Way
RSD	Revenue Service Date
SC	Substantial Completion
SCC	Standard Cost Category
SMP	Schedule Management Plan
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSPP	System Safety Program Plan
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCC	Technical Capacity and Capability
WBS	Work Breakdown Structure
WBY	Westbound Bypass Tunnel

APPENDIX B - PROJECT OVERVIEW AND MAP

Project Overview and Map – East Side Access



Scope

Description: This project is a new commuter rail extension of the Long Island Rail Road (LIRR) service from Sunnyside, Queens to Grand Central Terminal (GCT), Manhattan, utilizing the existing 63rd Street tunnel under the East River and new tunnels in Manhattan and Sunnyside yard. Ridership forecast is 162,000 daily riders (27,300 new riders).

Guideway: This two-track project is 3.5 route miles long, it is below grade in tunnels and does not include any shared use track. In Harold interlocking, it shares ROW with Amtrak and the freight line.

Stations: This project will add a new 8 track major terminal to be constructed below the existing GCT. The boarding platforms and mezzanines of the new station will be located approximately 90 feet below the existing GCT lower level. A new passenger concourse will be built on the lower level of the terminal.

Support Facilities: New facilities will include: the LIRR lower level at GCT, new passenger entrances to the existing GCT, the East Yard at GCT, the Arch Street Shop and Yard, a daytime storage and running repair/maintenance shop facility in Queens, and ventilation facilities in Manhattan and Queens.

Vehicles: The scope and budget for the ESA project include the procurement of 160 new electric rail cars to support the initial service.

APPENDIX C – LESSONS LEARNED

#	Date	Phase	Category	Subject	Lessons Learned
1	Dec-12	Construction	Construction	Muck Handling	During cavern excavation, the CM019 contractor became muck-bound, which caused a project delay of several months. The PMOC recommended that the contractor make extraordinary effort to evacuate the muck. After several months, it finally did, but the schedule time could not be recovered by that point. Lesson learned was to develop a well thought out muck handling plan (including establishment of proper haul roads) before work begins and to follow it during excavation.
2	Dec-12	Construction	Management	Stakeholder Management	The CH053 contractor incurred many months of initial construction delay because Amtrak did not approve the Electric Traction design documents on the project's schedule. A major contributing factor to this was because the MTACC had not established a contractual working relationship with Amtrak prior to letting the CH053 contract. The PMOC recommended that the MTACC and its GEC more closely design the project in accordance with the comments that Amtrak was submitting. To date, the MTACC has exhibited some improvement in this matter, but there are still 2+ Stages to construct, and improvement has not been fast enough or consistent over time. Lesson learned was to develop good working relationships with all project stakeholders before any contracts are let.
3	June-13	Construction	Planning/ Construction	Haul Roads	Haul roads to remove muck need to be passable (preferably paved with a mud slab) with locations pre-determined in areas of confined space such as caverns and tunnels.

#	Date	Phase	Category	Subject	Lessons Learned
					Deep, muck-filled haul roads contributed to the contractor's slow progress in removal of muck during construction. Lesson learned was to plan haul roads in advance and ensure that the muck haulers can travel at a specific rate of speed in order to meet production goals.
4	June-13	Construction	Training	Operator Skill with drill rigs	Lack of proper operator training contributed to inconsistent drilling of 10' deep blast holes which resulted in under/overbreak of excavated material, thus requiring rework to achieve desired results. Lesson learned was to ensure that drill rig operators are properly trained before being allowed to operate a production drill rig.
5	June-13	Procurement	Contract Development	Contract Packaging	Access to work sites, interface with other contracts, and contract staging must be considered when projects employ multiple contractors that may conflict with each other, particularly in confined spaces such as tunnels and caverns. Lesson learned is to carefully consider the access that each contractor may require, perhaps developing a scale model of the expected operation, so that expected operation of each contractor is included in its contractual requirements.
6	June-13	Administration	Quality	Submittals	Identification and resolution of quality issues (e.g. As-Built drawings, NCRs, etc.) must be managed on a daily basis to avoid creation of a backlog. Lesson learned is for the owner to have a well-trained staff with a consistent, coordinated approach (including appropriate pre-approved corrective action) when obtaining contractually required documents from contractors.

#	Date	Phase	Category	Subject	Lessons Learned
7	June-13	Contract Specs/ Construction	Construction	Pneumatically Applied Concrete (PAC)/ Shotcrete	Mismanagement of PAC/Shotcrete application has many different aspects which could adversely affect a project. Lesson learned is that all projects which anticipate use of PAC/shotcrete should carefully examine all aspects of its use and that a careful engineering analysis of the expected use be made so that the approved use can be included in the contract documents for the project.
8	June-13	Procurement/ Construction	Procurement	Qualified Personnel	Ensure that project key personnel are properly qualified and experienced for the positions they will fill on the project. Lesson learned is that personnel not properly qualified, experienced, or possessing the requisite credentials can do more harm than good. The owner should ensure that it is getting the contractor's best personnel when excavating a tunnel or cavern.
9	June-13	Scheduling	Construction	TBM Production	Project management should ensure that accurate, up-to-date, production rates for machinery are used when project schedules are developed. PMOC analysis has revealed that ESA schedules for the Manhattan Tunnel Boring Machines were based on a planned excavation rate of 53 linear feet/day. Actual TBM excavation averaged 34 LF/day, a difference of 35%. Lesson learned is that, depending on the length of excavation, inaccurate estimates can have a large negative impact on project schedule.

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**APPENDIX E – ON-SITE PICTURES
(TRANSMITTED AS A SEPARATE FILE)**

APPENDIX F - COST AND SCHEDULE ANALYSIS TABLES

Table F-1: ESA Planned vs Actual Construction Cash Flow as end of 1Q2016

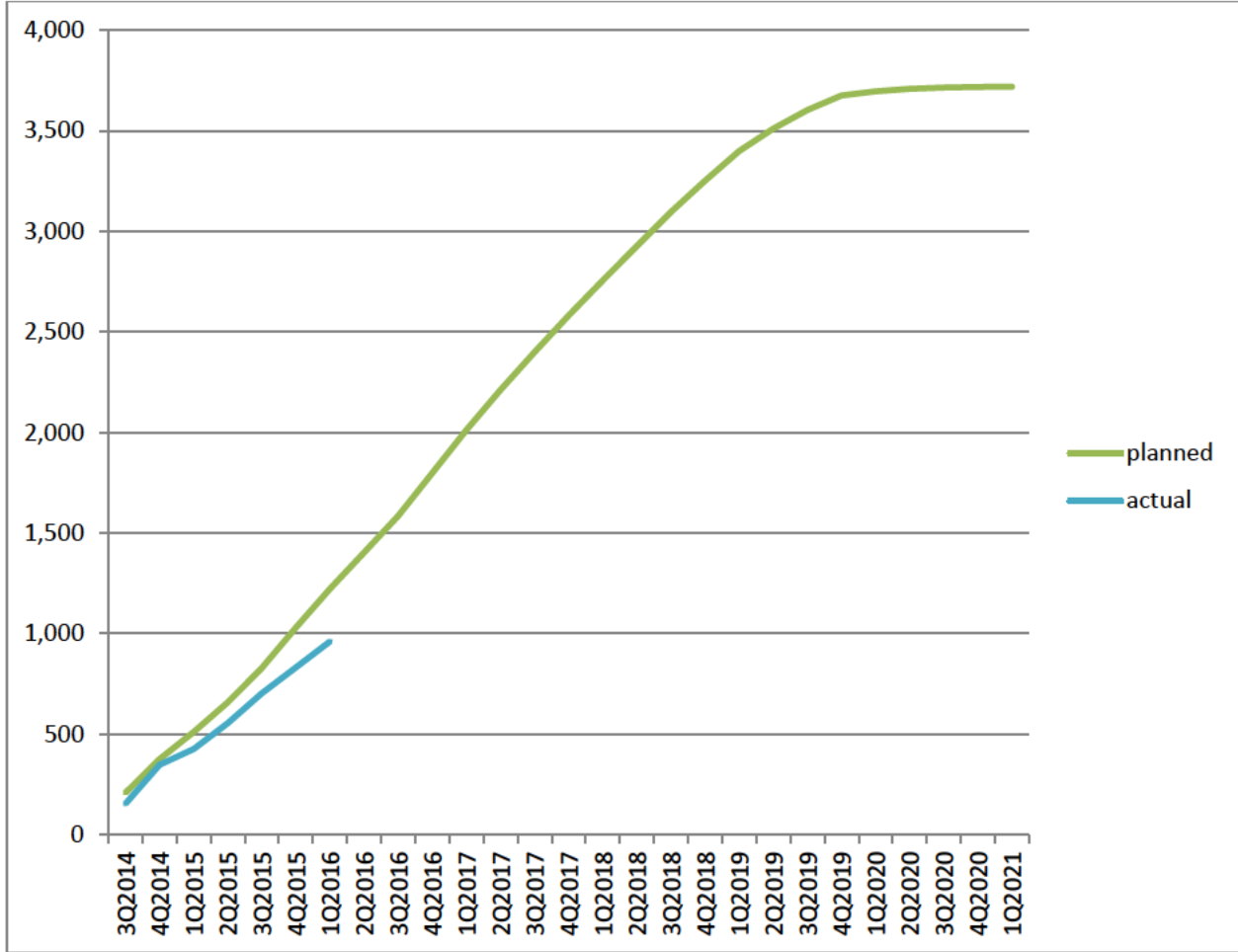


Table F-1 - The "planned" curve shows construction cash flow that was planned by ESA at the 2014 re-baselining in order to reach revenue service by the 1st quarter of 2021. The vertical axis is \$million, starting at \$0 at the time of the re-baselining. The "actual" curve, up to the 1st quarter of 2016, shows actual construction spending as reported by ESA.

Table F-2: 90 Day Look-Ahead Schedule – ESA IPS Schedule-2016-02-01

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
CQ033-2446	Substantial Completion CM005		11-Jul-16
CS084-MS11	CS084 Milestone LOE	01-May-16	01-Jan-20
HAROLD CONTRACTS			
CH057: Harold Structure - Part 2/3 Loop Box Approach, & EBRR West Approach & Tunnel			
CH057-3040	Procure Catenary material (12 Weeks)	16-Feb-16 A	05-May-16
CH057-3110	Complete Catenary / Signal Tower Relocation for L & T CIH Cutover		02-May-16
CH057-3370	Construct "D" Pit (Incl TBM Recovery) - For Cutover New Main Line 4	14-Dec-15 A	24-Feb-17
CH057-3420	Install Excavation Support for Tunnel D Reception Pit	13-Apr-16 A	25-May-16
CH057A - Westbound Bypass Structure (exclude Slab)			
CH057A-1050	Procure Catenary material for LP1A & 747 (12 Weeks)	11-Dec-15 A	26-Jul-16
CH057A-1390	(CH057 Jack) Install Jacking Frame To Secants	05-Apr-16 A	25-May-16
CH061A: Tunnel A			
CH061A-2100	CH061A Legal / Procurement Review/Intent to Advertise Approved	01-Sep-15 A	28-Apr-16 A
CH061A-2130	CH061A - Bid Due Date		12-Jul-16
CH061A-CONT	CH061 - Prepare for Advertisement	02-May-16	20-May-16
CH058A: Harold Structures - B/C Structure/ Catenary Structure			
CH058A-0000	Develop/Finalize 90% Design Documents - CH058A	01-Apr-15 A	31-May-16
CH058B: Harold Structures - Eastbound Reroute Structure			
CH057-MS1000	Remove Signal Hut "B" - after H3 CIL cutover		06-May-16
FHL01: Harold Stage 1 - LIRR F/A			

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
FHL01-1150	Complete Trough H2 to H3 (Track A)		04-Aug-16
FHL01-1400	12 KV Cutover + Demo existing (CH053)		02-Dec-15 A
FHL02: Harold Stage 2 - LIRR F/A			
FHL02-5160	Cutover Harold Emergency Generator		05-Jul-16
FHL02-SI5010	Install Remaining Conduit and Pull boxes in H5-CIL Location	22-Jun-16	25-Jul-16
FHL02.MS.00095	Cutover #L-2 Service for H3, H4 CIL's		13-Jun-16
FHL02.TK.00700	Fabricate Panels For Two No. 20 Turnouts 6176W(K3) & The 5 Degree 43'42" Diamond To Complete The Hx2-Kx2 No. 20 Double C	13-Jul-16	21-Jul-16
FHL03: Harold Stage 3 - LIRR F/A			
FHL03500710	Signal Works for Removing 843 Switch	23-Jan-17	03-Feb-17
FHA01: Harold Stage 1 - Amtrak F/A			
FHA01-1050	ET-Catenary: Thomson to Queens for Loop 1A Track (ESA)	17-Feb-14 A	07-May-16
FHA02: Harold Stage 2 - Amtrak F/A: Balance Work			
FHA02-1060	CH054A - Completed SMUS 1 & 2 / Install New RTU		09-May-16
FHA02-1220	Cutover F1/F2 Crossover (771): **WITH NEW SNOW MELTER CASE**	04-Jun-16	05-Jun-16
FHA02-1230	Cutover ZJ1/ZJ2 Crossover (747) **WITH OUT NEW SNOW MELTER**	01-May-16*	14-May-16
FHA02-1350	Cutover DN2 (743B)	10-Dec-16	11-Dec-16
FHA02-1540	Cutover: ZJ1/ZJ2 (747) (signal)	01-May-16*	14-May-16
FHA02-1730	Circuit Revision and Testing for LP1A cutover	22-Aug-16	16-Sep-16
FHA02-1780	Cutover New RTU with SMUS 1&2	09-May-16	20-May-16
SUMFHA02-1540	Cutover - ZJ1/ZJ2 (747)		14-May-16
SUMFHA02-1560	Cutover - DN2 (743B)		11-Dec-16
FHA03: Harold Stage 3 - Amtrak F/A			
FHA03-1210	Remove Existing Cables and Cases after Cutover Stage 2	06-Jun-14 A	27-Jul-16
H051A (Part 1): Harold & Point CILs			

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

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
VH51C0340	FIAT COMPLETED (w/HTSCS Contract)		29-Jun-16
VH051B (Part 2): Harold Tower SCS			
VH51H0300	As-Built Drawings	01-May-15 A	13-Jul-16
VH051C: 250 Hertz Misroute/ Tunnel Collision Avoidance			
VH051C	VH051C - 250 Hz Track Circuits	1-May-16	16-Apr-23
VH052: Cab Simulator			
VH052	VH052 - Cab Simulator	1-May-16	16-Apr-23
VHA03: Procure Materials for Harold Stage 3 - Amtrak F/A			
VHA03	VHA03 -Procure Amtrak Materials - Harold Stage 3	05-May-14 A	13-Oct-22
VHA04: Procure Materials for Harold Stage 4 - Amtrak F/A			
VHA04-1000	NTP VHA04 - Procure Materials Stage 4 - Amtrak	01-May-16*	
VHL02: Procure Materials for Harold Stage 2 - LIRR F/A			
VHL02-1010	Procure ZE Crossover	30-Jul-14 A	02-May-16
VHL03: Procure Materials for Harold Stage 3 - LIRR F/A			
VHL03-1000	VHL03 - Procure LIRR Materials - Harold Stage 3	01-Jun-14 A	01-Dec-21
VHL04: Procure Materials for Harold Stage 4 - LIRR F/A			
VHL04-1000	NTP VHL04 - Procure Materials stage 4 - LIRR	01-May-16*	
FML-LIRR	FML05, FML06, FML07 - Cavern,63rd Tunnel Rehab & Bellmouth-LIRR	09-Sep-13 A	28-Jan-20
FMM-MNR	FML05, FML06, FML07 - Cavern,63rd Tunnel Rehab & Bellmouth-MNR	09-Sep-13 A	28-Jan-20
CM005: Manhattan South Structures			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
CM005-1040	Milestone 4 Complete Balance of Project (Substantial Completion) - MS60 - (February 6 2016)		11-Jul-16

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
CM005-TO25	CM005 MS #1 Turnover to CM014B AR5a-5d (Bottom of Wellways 1 thru 4)	15-May-15 A	19-Jun-15 A
CM005-TO30	CM005 MS #4 Turnover to CS179 AR05 (LL Tail Tracks)	11-Jul-16	09-Sep-16
CM005-TO35	CM005 MS #4 Turnover to CS179 AR05 (UL Tail Tracks)	11-Jul-16	09-Sep-16
CM005-TO40	CM005 MS #4 Turnover to CS179 AR05 (38th St Facility)	11-Jul-16	09-Sep-16
CM005-TO45	CM005 MS #4 Turnover to CS179 AR05 (GCT 1/2)	11-Jul-16	09-Sep-16
CM005-TO50	CM005 MS #4 Turnover to CS284 AR (LL Tail Tracks)	11-Jul-16	09-Sep-16
CM005-TO55	CM005 MS #4 Turnover to CM007 Unlimited NTP	11-Jul-16	09-Sep-16
CM005-TO60	CM005 MS #4 Turnover to CM014B AR03 (44th St Vent Pant & Connex Boxes)	11-Jul-16	09-Sep-16
CM005-TO65	CM005 MS #4 Turnover to CS179 AR11 (Access Tunnel #1)	11-Jul-16	09-Sep-16
CM005-1650	West Cavern - Install Concrete & Strip Forms (S. End Wall Remaining)	10-Aug-15 A	16-Feb-16 A
CM013A: 55th Street Vent Facility			
CM014B-2410	CM014B - EL-01 and EL-02 - Prep Site/Prelim Work - Incl Provision of Shaft, Hoist Beams , Machine Rm & Temp Utilities	16-May-16	17-Jun-16
CM004: 245 Park Ave. Entrance & 44th Street Vent Structure			
CM04-C0940	CM004 Contractual Final Completion (ML#2 Date 820 CDs from NTP)		19-Jul-16
CM006: Manhattan North Structures			
CM006-MS2A	CM006 Milestone #2A (55th Street Vent Facility Complete - 702 days from NTP (3/2/16))		05-Aug-16
CM006-MS5	CM006 Milestone #5 (GCT 4 Facility Room - 460 CD from NTP (7/4/2015))		11-May-16
CM006-TO140	CM006 MS#2A Turnover to CS179 AR 14 (55th Street)	06-Aug-16	06-Aug-16

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
CM006-TO150	CM006 MS #5 Turnover to CS179 AR12 (GCT 4 Facility Room)	12-May-16	12-May-16
CQ032: Plaza Substation & Queens Structures			
CQ032-MS11	Milestone #11 Complete YLT Ductbench Work Between Station 1181+89--1225+10		31-May-16
CQ032-TO20	CQ032 MS #2 Turnover to Other Contracts: YL Track Level Complete	13-Jun-16	13-Jun-16
FQA65: Loop Interlocking - Amtrak F/A			
FQA65-3010	CH057: Complete Catenary Structure for Loop and T CIHs (65-0) Part 2		02-May-16
VQ065: Loop Interlocking CIL (Amtrak)			
VQ065RI	VQ065 RI - Loop Interlocking	12-Sep-12 A	14-Mar-20
VQ331020	VQ065A - Loop Interlocking CILs (by Amtrak)	12-Sep-12 A	14-Mar-20
CQ033: Mid-Day Storage Yard Facility (Procurement Status TBD)			
CQ033-1020	CQ033 Ready for Procurement	20-Jun-16	08-Jul-16
CQ033-1015	LIRR/DOT Permit to Demo Montauk Cutoff Structure - 4 MONTHS COMPLETE BY NTP	02-May-16	30-Aug-16
SYSTEM-WIDE CONTRACTS/WORK PACKAGES			
CS084 System Package 2 - Traction Power			
CS084-3460	CS284 C08 TPSS Prefabrication (4 months submittals+10 months fabrication)	01-May-15 A	18-Aug-17
Contract Milestones (Updated: 02/16/16)			
CS084-MS001	MILESTONE # 1- Energize Traction Power Substation C08		01-May-16
CS084-MS002	MILESTONE # 2- Energize Traction Power Substation C04 and C05		01-May-16
CS084-MS003	MILESTONE # 3- Energize Traction Power Substation C06 and C07		01-May-16
CS084-MS004	MILESTONE # 4- Energize Traction Power Substation C01 and C02		01-May-16
CS084-MS005	MILESTONE # 5- Energize Traction Power Substation C03		01-May-16

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
CS084-MS006	MILESTONE # 6- Complete Local testing of all substation/Start Integration		01-May-16
CS084-MS007	MILESTONE # 7- Substantial completion & Final Completion		01-May-16
CS179: System Package 1 - Facilities Systems			
CS079-B6450	CR-125 @ Yard Services Bldg. - Complete Equip Installation	09-Nov-15 A	15-Jul-16
CS079-B6530	CR-125 @ Yard Services Bldg. - TEST - Start of Subsystem Testing (SST)	18-Jul-16	
CS179	CS179 - Facilities Systems Construction	31-Mar-14 A	01-Jul-20
CS179-1090	(CS179 MS2) CS179 Completion of Yard Lead Construction - Turnover to Other Contracts	N/A**	N/A**
CS179-AR27A	CS179 AR 10A.1 - Access to GCT Concourse Zone 1	15-Jun-16*	
CS179-MS02	CS179 MS 02 - Completion of Yard Lead Construction (1231+00 to W. End of Plaza Interlocking)		N/A**
CSU99: Systems Utility Relocations			
CSU99	CSU99 - Systems Utilities Relocations	30-Sep-14 A	03-Aug-20
VS086: System Package 3 - Signal Equipment Procurement			
VS086-1005	Prepare/Furnish Signal Equipment Catalog Cuts	12-Dec-14 A	01-Feb-17
FSA79: Communication, Controls, Security and Fire Detection - Amtrak F/A			
FSA79	FSA79-Power, Signals, Comm & Security Sys	31-Mar-14 A	02-May-16
FS099: Force Account Support			
FS099	FS099 - Force Account Support	30-Sep-14 A	03-Aug-20
LIRR 3.3.7	Take Over Preparation for GCT Building Management System (BMS)	30-Jun-16	25-Dec-18

**APPENDIX G – MTA EAST SIDE ACCESS PROJECT –
BUY AMERICA STATUS SUMMARY
TABLE G – CONTRACT CS179 (As of June 30, 2016)**

Equipment	Current Status
Radiax Cable	The contractor advised that the proposed cable, originally only produced in Germany, would be fabricated in a facility in Connecticut. A piece of the cable, installed in the WSA tunnels, is under evaluation to determine if the cable meets the contract's functional requirements. If the cable proves to be technically proficient and gets approved for use, this will no longer be a compliance issue.
CCTV Security Cameras	The contractor reports that ILS, the selected video integrator, sent a letter to the CS179 contractor certifying that it can provide Buy America compliant CCTV cameras. This is no longer being carried as a potential Buy America issue by the MTA and will be dropped from any future PMOC reports.
Wall Anchors for Brackets	MTA Legal considers the use of the adhesive in the Hilti wall anchors as a subcomponent of the fastening system and, therefore, contends that this is not a compliance issue. This will be dropped from any future PMOC reports.
Small HVAC Units for Equipment Rooms	The contractor asserts that the specified low-profile HVAC unit is not available from any US-based HVAC manufacturer and that the manufacturer of the specified unit (Mitsubishi) cannot manufacture the unit in the USA. The MTACC advised that documentation to substantiate a Buy America waiver request to the FTA is being assembled.
Variable Frequency Drives for Motors	The MTACC reports that Buy America compliant Variable Frequency Drives were identified; thus, this will be dropped from any future PMOC reports.
Security Door Hardware	The MTACC reports that Buy America compliant Security Door Hardware was identified; thus, this will be dropped from any future PMOC reports.
DC Transfer Switches	The MTACC reports that Buy America compliant DC Transfer Switches were identified; thus, this will be dropped from any future PMOC reports.
Video Display Panels	The contractor reports that, despite an exhaustive search, there is no USA-based manufacturer of the main video display panels that will be used in the various control rooms. The MTACC advised that documentation to substantiate a Buy America waiver request to the FTA is being assembled.

**APPENDIX I – AMTRAK REMAINING ESA ELECTRIC TRACTION
CONSTRUCTION***

**Table I – Remaining Catenary Construction Start and Finish Dates from IPS #81
(Data Date – May 1, 2016)**

<u>Last Activity in IPS ID# String</u>	<u>Scope</u>	<u>IPS Start</u>	<u>IPS Finish</u>	<u>Status</u>
FHA03-3150	Install 1,100 LF CA RPR Track	11/4/16	11/11/16	CH057 presently installing CP foundations.
CH057A-6280	Install 7,100 LF CA WBY Track (or FHA02-1830)	3/7/16	3/22/17	CH057A has not started any catenary work yet.
FHA03-1200	Install 2,500 LF CA ELIP Track from #4164 TO to #747 TO (or FHA02-1040-3)	11/4/16	11/11/16	Not started yet.
CH057A-2050	Install 6 CAs LIRR/3rd Party Crossovers	9/15/18	9/28/18	None of the Crossovers have been installed yet.
CH057-C1740	Relocate cross catenary east of 39th St. as result of construction of Tunnels A, B/C, and D	1/13/17	1/29/18	Not started yet.
FHA04-1030	Install 1,000 LF (est.) CA MDSY Sub 4 to Line 2 Connection	12/28/19	2/15/20	CQ033 not awarded yet.
FHA04-1050	Install 3,600 LF CA EBRR Track	10/26/19	10/12/21	CH058B not awarded yet.
FHA02-1850	Install CAs 5 other locations FHA02	8/6/15	2/5/21	#771-#747 complete. Remainder not started.
FHA03-1490	Install CAs 11 other locations FHA03	7/19/13	10/21/22	Not started yet.
FHA04-1020	Install CAs 3 other locations FHA04	1/2/19	12/19/20	Not started yet.
FHA02-2299	Install 2,400 LF CA Loop 1A Track - FQA65 (or FQA65-9999)	3/31/16	12/3/16	Loop 1A Track construction partially complete. No ET construction started yet.
CH057-55101	Wire Transfer for demolition of Montauk Cutoff Platform	3/8/17	4/3/17	CQ033 not awarded yet.
FQA65-1092	Install CAs 24 Turnouts in Loop and T Interlockings - FQA65	2/16/20	3/23/23	Loop and T Interlocking construction on "hold" by MTACC. Not required until late in program.

CA = Catenary Assembly, CP = Catenary Pole, TO = Turnout, XO= Crossover

* This table is a high level summary of the remaining Electric Traction construction program. The PMOC will maintain details for FTA review.