

PMOC COMPREHENSIVE MONTHLY REPORT

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

Report Period March 1 to March 31, 2015



PMOC Contract No. DTFT60-09-D-00007

Task Order No. 7, Project No. DC-27-5235, Work Order No.4

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

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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. DTFT60-09-D-00007, Task Order No. 007. 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.

MONITORING REPORT

EXECUTIVE SUMMARY

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 8 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 1st Quarter 2015

a. Engineering/Design Progress

As of the end of February 2015, MTACC reported that the overall Engineering effort is at 98.8% complete, based on Earned Value for Design Deliverables. Their Cost Report shows 88.7% of the overall EIS & Engineering category as invoiced and 88.7% of the budgeted section titled “Design” as having been invoiced, the same as last month in both areas.

b. New Contract Procurements

Contract CM014B (GCT Concourse and Facilities Fit-out) was awarded in January 2015 with a Notice to Proceed of February 2, 2015.

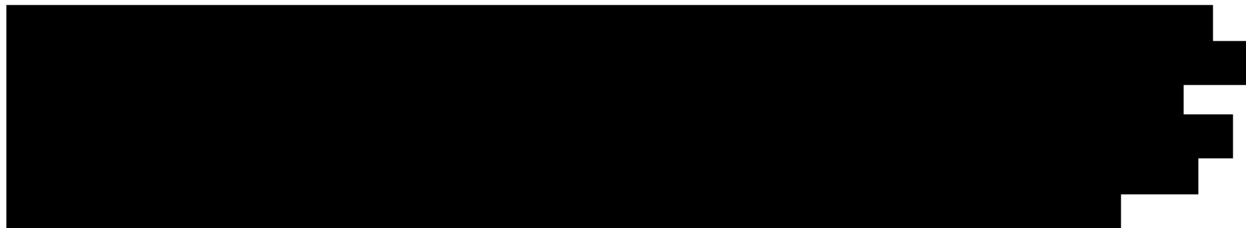
c. Construction Progress

The PMT reported in its February 2015 Monthly Progress Report that the total construction progress reached 54.6% complete; the Expedition Cost Report also shows 54.6% of Construction as having been invoiced.

d. Continuing and Unresolved Issues

The new baseline total cost and Revenue Service Date were presented to the MTA CPOC on June 23, 2014. ESA continues to incorporate the new data into its regular reporting processes, but must now more effectively forecast and manage the scope, schedule and Program Budget. While not a new issue, the current potential shortfall in funding availability and timing could have a significant impact on the Program schedule. This issue is discussed further in Section 6.0, Risk Management, of this report.

e. New Cost and Schedule Issues



In response to Amtrak’s continued inability to provide the necessary force account resources to support the Harold schedule re-plan of 2013/2014, 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 pushes back the Federal Railroad Administration (FRA) funded High Speed Rail Work beyond 2017. For this reason, MTACC is seeking a time extension from the FRA for the funding and has been actively engaging FRA in discussions and meetings to reach this goal. As of March 31, 2015, FRA has not yet provided formal approval for the changes. Additionally, MTACC needs to present the Harold Re-Sequencing Plan to Amtrak for their review and concurrence.

The PMOC has 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, currently scheduled to commence in 2018. 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 and this could further reduce the Amtrak resources needed to support the ESA Harold Re-Sequencing Plan. Delays in completing the Harold Re-Sequencing Plan may result in essential ESA work being pushed back into the timeframe for Amtrak's extended outages for ERT Lines 1 and 2.

3 PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

a. Grantee Technical Capacity and Capability

There have been no changes in key ESA personnel during 1Q2015.

b. Real Estate Acquisition

Details of the Real Estate acquisition activities are provided in Section 2.6 of this report. The major open issue remains the finalization of a Design Agreement with the property owners of 415 Madison Avenue for the 48th Street Entrance. Discussions with the owner are continuing.

c. Engineering/Design

Progress for remaining design work continues to lag design milestone targets. The GEC and PMT continue to consistently miss target dates for completing the remaining design activities on the project due to continuing scope transfers between Contract packages. Details are provided in Section 2.1 of this report.

d. Procurement

Contract CM014B (GCT Concourse and Facilities Fit-out) was awarded in January 2015 with a Notice to Proceed of February 2, 2015. MTACC advertised the CM007 Contract package on December 23, 2014. Proposal documents were made available on January 15, 2015. The pre-proposal conference and site visit were held in early March 2015. Proposals are due on May 1, 2015.

e. Railroad Force Account (Support and Construction)

Although all Harold construction during 1Q2015 was extremely limited due to severe weather for most of the quarter, LIRR Force Account Signal personnel continued to install trough and conduit, pull cables, make revisions, and pretest circuits at the new "H3", "H5", "H6" and Location 30 CILs in Harold Interlocking. LIRR Communications personnel resumed construction of the communications line between "H6" CIL and Woodside Interlocking. LIRR Electric Traction personnel continued limited construction of the signal power separation system and installation of 3rd rail apparatus at the new turnouts installed in 2014. Amtrak C&S personnel continued to install trough and conduit for the future "Loop" and "T" Interlockings and placed the Central Instrument House (CIH) for "T" Interlocking. Amtrak Electric Traction personnel continued to make catenary wire transfers between the East River Tunnel portals and Sub 44 and protected ESA contractors during their respective construction activities.

f. Third-Party Construction

Manhattan: During 1Q2015, the CM005 contractor (Manhattan South Structures) placed concrete for the upper level slabs and exterior walls of GCT 1&2 East and West Wye Caverns and prepared to begin archway shotcrete application in GCT 1&2 East Wye, placed concrete for exterior and interior level walls and began to place re-bar for the upper level slab at the 38th St. Vent Facility, placed concrete for the lower level exterior walls in the Air Wye at 37th St., and continued miscellaneous construction in Access Tunnel #1 at the south end of the Westbound

Cavern. The contractor also continued placement of re-bar for the lower level exterior walls at the south end of the Eastbound Cavern as part of its Back of House (BOH) contract amendment.

The CM006 contractor (Manhattan North Structures) continued to place concrete for the intermediate level slab and interior walls on the west side of the cavern at the 55th St. Vent Facility, completed placement of all concrete and pneumatically applied concrete (PAC) in the GCT 4 West Wye Cavern, continued to place re-bar in the archway of GCT 4 Crossover Cavern, continued to place invert concrete in various tunnel locations throughout its jobsite, and placed re-bar for the invert in the Cross Flue. The contractor also began to place re-bar, concrete, and construct support columns at the north end of the Eastbound Cavern as part of its BOH contract amendment.

On CM013 (50th Street Vent Facility), the Contractor completed the requirement to release the partial Stop Work Order placed by the MTACC Code Compliance Unit (CCU) on placement of pneumatically applied concrete (PAC). Sign-off by the independent engineer continues to be unresolved and this has become an impediment to sign-off for substantial and final completion.

Queens: All exterior Queens construction was hampered by the severe weather during 1Q2015, although the CQ032 contractor was able to continue its interior work without significant adverse impact. The contractor continued limited excavation and pile installation for the Yard Services Building, limited re-bar and concrete placement for the Plaza Air Intake/Exhaust Building, continued to install utility conduit and place duct bench re-bar throughout the Plaza structure revenue service level and Tunnels A, B/C, D, continued to place duct bank re-bar and concrete in the 63rd St. Tunnel, and placed the C06 roof slab in the Early Access Chamber (EAC).

Harold Interlocking:

Contract CH053 (Harold Interlocking, Part 1 and G.O.2 Substation): During 1Q2015, the CH053 contractor was hampered by the severe weather through most of the quarter, but was able to continue cable pulls and splicing for the 12kV system through Harold Interlocking in order to place the C3 12kV feeder circuit between Sub 44 and the Sunnyside Frequency Converter in service. The contractor also continued to pull and splice utility and communications cables in micro-tunnel bores #1 through #4 and construction to place the electrical feed to Amtrak's existing car washer back in service.

Contract CH054A (Harold Structures Part 2A): As with CH053, the CH054A contractor was also hampered by severe weather during 1Q2015. The contractor was, however, able to complete work necessary to place the S1, S2, and S3 12kV feeder circuits in service between the East River Tunnel portals and Sub 44 and backfill its excavation for the sewer line it constructed between Thomson Avenue and Queens Boulevard.

Contract CH057A (Westbound Bypass): The CH057A contractor was not able to drive piles during much of 1Q2015 due to the severe weather, but it was able to continue installation of de-watering wells throughout the jobsite and construction of its work deck for the East Approach work. The contractor also continued to fabricate the tunnel shield it will use for its "jacked box" excavation of the Westbound Bypass Tunnel under Lines 2 and 4. As of the end of March 2015, the shield is complete except for miscellaneous punchlist modifications the contractor continues to make.

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

A Quarterly Operational Readiness meeting was held March 19, 2015. Details 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.

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

Table 2: Project Budget/ Cost Table

	FFGA			MTA's Current Baseline Budget CBB		Expenditures As of 2/15	
	(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%	6,119.8	54.57%
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%	5,502.2	54.06%
Federal Share	\$2,683	36.30%	\$1,148	2,699.0	24.07%	1,989.1	73.70%
5309 New Starts share	\$2,632	35.60%	\$1,098	2,436.6	21.73%	1,727.0	70.88%
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%	3,513.1	46.97%

j. Project Risk

The MTACC held the monthly risk meeting with the PMOC in January 2015, but no meeting was held in February 2015. Starting in March 2015, MTACC combined the cost, schedule and risk topics into a single meeting in an effort to streamline the process. This meeting was held on March 11, 2015. Details are provided in Section 6.0 of this report.

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. At the December 11, 2014, ELPEP Quarterly Review Meeting, MTACC noted that the TCC Plan revisions are not yet completed pending finalization of the role, responsibilities and level of authority of the ESA Change Control Committee. As of March 31, 2015, the revised TCC Plan has not been submitted.
- **Continuing ELPEP Compliance:** The following ELPEP components continue to need improvement or are deficient: Management Decision; Design Development; Change Control Committee (CCC) Process and Results; Stakeholder Management; Issues Management; Procurement; Timely Decision Making; and Risk-Informed Decision Making.
- **Project Management Plan:** 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; the 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 notes that since June 2013, the ESA project has continued to be non-compliant with ELPEP, and is not meeting some of the more important requirements of the Schedule Management Plan (SMP) and Cost Management Plan (CMP) sub-plans to the PMP. The PMOC’s opinion is that this continues to be a serious deficiency and needs to be resolved immediately. [Ref: ESA-114-Sep13] The PMOC’s major areas of concern include:

- **Cost/Schedule Contingency:** In November 2014 ESA submitted its initial cost and schedule contingency utilization curves for the new baseline budget and schedule presented to CPOC in June 2014 in order to comply with ELPEP; however, they then

stated they would correct them to make the curves usable by ESA Project Controls staff and acceptable to the FTA/PMOC. The PMOC does note, however, that draft proposed cost and schedule contingency drawdown curves were presented by MTACC at the December 11, 2014, ELPEP Quarterly Review Meeting. A meeting was held on March 24, 2015, to review and discuss the MTACC drawdown curves and the FTA/PMOC proposed cost and schedule contingency minimums. Additional discussions are planned to reach agreement on the details.

- **Schedule Management Plan (SMP):** The ESA project remains non-compliant with requirements for Integrated Project Schedule (IPS) Updating, Forecasting, and Schedule Contingency Management against a current baseline schedule. Given that the new budget and schedule have been put in place, the PMOC expected that MTACC would start to meet the requirements set forth in its SMP in the above-referenced areas. This has not occurred as MTACC just completed, in December 2014, the latest Harold Re-Plan and has commenced incorporating the Re-Plan results into the Integrated Project Schedule. As of March 31, 2015, full incorporation of the Harold Re-Plan into the IPS has not yet been completed. MTACC has committed to have this completed for the March 2015 IPS update that has a data date of April 1, 2015.
- **Cost Management Plan (CMP):** The ESA project remains non-compliant with requirements for Project Level EAC Forecasting, Project Level EAC Forecast Validation, and MTACC Cost Contingency Management and Secondary Mitigation. Given that the new budget and schedule were presented to the MTA CPOC in June 2014, these requirements should have been met by now but MTACC has made very little progress in this area. ESA-PMT had advised that the draft of the updated CMP was expected to be completed in 1Q2015. As of March 31, 2015, the revised CMP had not been submitted.

Revisions to the ELPEP Document: Although the 2014 Re-Plan budget amount and Revenue Service Date were presented to CPOC on June 23, 2014, MTACC has not yet fully incorporated the schedule details into its regular monthly reporting. MTACC had previously committed to providing these details by August 25, 2014. MTACC had taken the position that the IPS will not be finalized and presented to FTA/PMOC until the current Harold Interlocking re-planning/re-sequencing effort has been completed and to not expect a revision until December 2014. As of March 31, 2015, however, this has not yet been completed. The PMOC notes that this current Harold Re-Plan will supersede the earlier Harold Re-Plan that began in 4Q2013 and was completed in 1Q2014. Final revisions to the ELPEP Document cannot be completed until the IPS is finalized. The PMOC notes that MTACC completed the Harold Re-Plan December 2014 and has started incorporating the Re-Plan results into the IPS, but that this effort has not yet been completed. MTACC has advised that the Harold Re-Plan details will be presented in the March 2015 IPS update having data date of April 1, 2015. As part of the process of updating the ELPEP document, the PMOC has started an independent evaluation of the minimum required cost and schedule contingencies going forward and presented these at the meeting with MTACC on March 24, 2015.

The next ELPEP Quarterly Review Meeting with MTACC, FTA-RII, SAS and ESA projects and the PMOC has been scheduled for April 6, 2015.

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

a) Organization

There are currently no issues to report pertaining to the MTACC organizational structure.

b) Staffing

There are currently no issues to report regarding MTACC staffing.

1.2 Project Management Plan

a) History of Performance

MTACC re-baselined the ESA Project in May 2012. These baselines resulted in a risk adjusted budget of \$8.24B (not including [REDACTED] 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 second 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.

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 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 reviewed Rev. 10 and provided its comments to the FTA in 4Q2014. As subsequent update to the Rev. 10 document was submitted on March 13, 2105 reflecting revisions to the ESA Change Control Committee.

1.3 Project Controls

a) Schedule

MTACC presented its new baseline schedule to the MTA CPOC in June 2014 with an RSD of December 2022. This date includes 22 months of Program level contingency. The PMT developed a draft schedule contingency drawdown plan as required by the ELPEP agreement and submitted it in December 2014. The ESA schedule contingency drawdown plan and the FTA/PMOC minimum required schedule contingency levels were discussed at a meeting with MTACC on March 24, 2015 and follow-up meetings will continue going forward.

b) Cost

MTACC presented its new baseline budget of \$10.177B [REDACTED] to the MTA CPOC in June 2014. The PMT developed a draft cost contingency drawdown plan as required by the ELPEP agreement and submitted it in December 2014, The ESA cost contingency drawdown plan and the FTA/PMOC minimum required cost contingency levels were discussed at a meeting with MTACC on March 24, 2015 and follow-up meetings will continue going forward.

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 is in process. As mentioned above, MTACC presented a new project budget of \$10.177B (excluding the [REDACTED] finance costs), and a new schedule with an RSD of December 2022 to the MTA CPOC in June 2014.

b) Federal Regulations

As of March 31, 2015, the MTACC had not received the "Buy America" waiver for turnouts that Amtrak will install in the FRA funded High Speed Rail portion of the ESA program. The PMOC believes, however, that the impact of the FRA waiver will be minimized with ESA's adoption of the "ESA First" Schedule, which will place High Speed Rail construction at the very end of the program.

1.5 Safety and Security

a) Safety Certification Process

During 1Q2015, design packages for CH058 and CQ033 were certified by the LIRR in February 2015 and the GEC continued to develop certification packages for CM007 and CS086. Amtrak continued to review design safety certification packages for FHA01, FHA02, FHA03, and FHA04, although ESA has not received any official correspondence from Amtrak about these for several months. For construction safety certification, ESA internal review of certification packages continued for contracts CM004, CM013, CM014A, CH053, CM005, and CM006. An Amtrak regional meeting is scheduled for May 6, 2015. During this meeting, the Amtrak ESA liaison will discuss the safety certification process as it relates to Amtrak force account ESA packages. The Operational Readiness Group continued to develop a document control process to facilitate traceability of all related documents to certifiable elements. To date, however, the Group has not decided which database management system it will use.

The PMOC remains concerned that the Safety and Security Committee has not met on a regular basis as per the ESA Safety and Security Management Plan (SSMP). This lack of regular meeting will hamper the effectiveness of the Committee in coordinating activities related to the Safety Certification. A calendar showing general meeting dates (by quarter) was presented at the December 18, 2014 Operational Readiness Quarterly Meeting, however this item will remain open until more definitive meeting dates are put on a calendar. [Ref: ESA-96-Sep12]

For April 2015, only one committee meeting was scheduled.

b) Project Construction Safety Performance

Project safety statistics for lost time accidents on active construction contracts continue to trend above the Bureau of Labor Statistics (BLS) national average at 2.14 vs. 1.80 lost time accidents (LTA) per 200,000 hours. This is slightly lower than last reporting period (2.26). The CM005 Contract has an average of 3.28 LTA in February 2015, trending higher than the project average but decreasing (from 3.63 LTA) since the last reporting period. The CM005 Contractor has committed to actions to improve safety awareness among its supervisors and crews and is taking steps to improve the safety on site including: daily toolbox talks with crews where safe work plans for the work activity to be performed will be discussed; daily operations meetings to

discuss and coordinate the planned work activities will be held; construction debris will be collected in an organized fashion and properly bagged and/or bundled for efficient removal; clear walking paths to all work areas will be provided and access/egress to the underground work area will be maintained at all times. In light of recent accidents and continued concern about safety, MTACC has required that the CM005 contractor utilize a third party safety consultant (Pro Safety) to help the contractor achieve project safety goals

c) **Security**

The PMT did not report any significant security issues in its February 2015 Monthly Progress Report.

1.6 Project Quality

GEC Quality: The GEC Quality Manager has resigned. The ESA GEC Program Manager is currently seeking a permanent replacement. The ESA Quality Manager has stated that the new GEC Quality manager may not have to be a full-time position. However he will require that the person has dedicated time and meets the requirements of the position, e.g., reports, reviews, audits, etc. The PMOC agrees with this assessment and recommends that the candidate Quality Manager be identified and submitted to the ESA-PMT for approval at the earliest possible time to provide continuity of quality oversight for the GEC's design work and construction phase services.

CM013A: On January 15, 2015, a 16 inch long crack was discovered at the top of the West Plenum North Branch column. A nonconformance report (NCR) was generated. The crack was a maximum of 0.75 inch deep and did not expose the rebar. An approved standard repair procedure was proposed to chip out the defective area to sound concrete and install a patch with a specified material. The GEC has approved this repair and determined that there are no structural issues. This column is not exposed to the public and will not receive an architectural finish. The contractor is currently completing repair work. Following final inspection and approval by the CM013A Quality Manager, the NCR will be closed.

As-Built Process Audits: The ESA Quality Manager reviewed the As-Built Drawing Process on contracts CH057A and CM006 in January 2015. CH057A was acceptable but CM006 is behind schedule. A follow-up review of CM006 will be conducted in April or May 2015. Contracts CH053, CH054A, CQ032, CM004, CM014A, CM005, CM013, and CM013A were originally audited in 2014. Follow up audits with the CM office and GEC will be performed in April and May 2015 to ascertain/identify any inconsistencies in the submittal process and implementation of any as-built information received by the GEC, including whether the GEC is actually reporting back to the CM. [Ref: ESA-117-Sep14]

MTACC Special Inspection Process Audits: MTACC HQ performed Special Inspection Process Audits on CM005, CM006, CH057A, CM013A, & CM014A. The PMOC has requested copies of the final audit reports.

CS179 (Systems Package 1 – Base Contract): This contract was awarded eleven months ago and many submittals are late and/or unacceptable. The Contractor's original Quality Manager left. The replacement left in February 2015 and there is presently no Quality Manager assigned. The ESA Quality Manager has directed the contractor's Corporate Quality Manager to be the "acting" Quality Manager on this contract until they find a suitable replacement. The PMOC agrees with this action and had recommended it last month. MTACC's Chief of Quality and

System Certification is scheduling a meeting with the contractor's upper management and the CM team to address the various issues. [Ref: ESA-118-Sep14]

Procedure Compliance Audits: During 3Q2014, MTACC Quality conducted Procedure Compliance Audits on Contracts CM005, CM013, CM013A, CH057A, and CQ032. The major finding in most of the audits was that the field engineers need to be trained in completing the daily construction reports. The auditors also recommended that columns providing additional information pertaining to RFIs need to be added to the RFI logs. Since there were similar findings and recommendations for other contracts, the ESA Heavy Civil Project Executive prepared a response to the auditors. MTACC Quality agreed with most of the response and is still working with the ESA staff to resolve the remaining issues. Since these issues have been open for many months, the PMOC recommended that MTACC's Chief of Quality and System Certification help to close them.

Quality Training: A Quality Kickoff meeting and Quality Training that was scheduled in February 2015 for the CS179 contractor was postponed when their Quality Manager resigned. It is now scheduled for April 2015 even though the contractor does not have a permanent Quality Manager. A Quality Kickoff meeting for the new CS084 contractor will also be held in April 2015.

1.7 Stakeholder Management

a) Railroads

During 1Q2015, the MTACC PMT continued to meet with internal MTA, MTA-IEC, and LIRR stakeholders and external stakeholder the Federal Railroad Administration (FRA) to develop its "ESA First" approach for future Harold Interlocking construction. The MTACC PMT has scheduled a meeting with Amtrak in early April 2015 to present this approach. If all parties agree, the "ESA First" approach will result in all work necessary for the LIRR to begin operations into Grand Central Terminal (GCT) being done before Amtrak's ESA High Speed Rail (HSR) construction. The existing Harold schedule has concurrency with GCT and HSR construction that would result in the GCT ESA work not being complete until 2022, whereas the "ESA First" approach, which will complete all GCT work first, could result in LIRR GCT service at a much earlier date.

b) Others

There are no other coordination efforts to discuss for this quarter.

1.8 Local Funding

a) MTA/New York State (Capital Plan)

The funding request for ESA under the 2015 – 2019 Capital Program was submitted to the NYS Capital Program Review Board (CPRB) in September 2014. As it now stands, ESA does not currently have all of the funding in place needed to complete the project and this situation has impacted the procurement of several major contracts. The PMOC does note that MTACC is fully aware of this situation and the critical role that funding serves in the successful completion of the project. MTACC works closely with MTA the finance group and keeps the FTA up to date on developments and issues.

b) Other Sources

The total FTA funding commitment as of March 2015 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

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 the 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 its update of both the Cost Management Plan and the Schedule Management Plan.

b) Monitoring

ESA held its monthly risk meeting in January 2015, but started combining the risk topics with the monthly cost and schedule review starting in March 2015. The PMOC will evaluate this approach to determine if it will be effective going forward.

c) Mitigation

Current mitigations are discussed in Section 6.3 below.

2.0 PROJECT SCOPE

MTACC continued to investigate the potential scope transfer of the Manhattan Cavern south back of house via a change order from the CM007 package to the CM005 Contract, but as of March 31, 2015, negotiations failed to produce an agreed upon price for the work. A decision will need to be made in April 2015 on this scope transfer as the CM007 proposals are currently due on May 1, 2015. As a result, the scope remains in CM007, and the design documents for this work went out in the RFP package that was advertised in December 2014.

A Preliminary Change Order (PCO) request was issued to the GEC to develop a new, stand-alone package CH061A (completion of Queens Tunnels “A” and “D”). The GEC continues to await authorization from MTACC to proceed with producing the package and the contract modification approval is in process.

A technical meeting with the owners of 415 Madison Avenue was held on January 29, 2015. In that meeting, the owners decided that they will only relocate the existing utilities within their building. That includes water service, sewer, steam, mechanical duct work, electrical lines and the telephone service. The owner’s structural engineers provided the structural loads, suggested column reinforcing, and suggested reinforced slab design to ESA. MTACC is currently preparing the design agreement (MOU) with the owner, which will enable the design to begin. Once that MOU is signed, the scope of work to repackage CM015 and CM015A will be developed.

Anticipated advertise date for the CH057 package was previously forecast for July 2014 with NTP forecast for September 2014. The forecast advertise date was not met. Signed and Sealed bid documents were issued by the GEC on February 27, 2015. The package is now structured to include 15 options. The CH057 Contract was advertised in March 2015 and ESA has scheduled

the award date for July 2015. The PMT is in the process of obtaining Amtrak concurrence. LIRR review has been completed

CH058 is being repackaged and the bid advertisement date has not been determined. The East Bound Re-route tunnel construction method is being revised from a top down to a traditional cut and cover method and ESA is considering splitting the package into two separate Contracts: CH058A will contain the East Bound Re-route; CH058B will contain the loop box. A white paper is being developed to present to the Change Control Committee (CCC), which must approve the proposed repackaging plan. All design work is currently on hold.

The west end of the mid-day storage yard (CQ033) needs resolution as to 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 LIRR (track) to tie into the Arch Street shop. ESA is now looking at structuring the CQ033 package with five options and is also looking at splitting out the procurement of the Central Instrument Locations (CILs) into a separate package. This packaging change was presented to the CCC in February 2015 and approved. The GEC is now preparing the PCO for a separate procurement contract for the CILs as the negotiations were completed in March 2015. Construction sequencing meetings are being held to coordinate the CQ033 work with the contiguous third party and force account work. The PMT will select the advertise date for CQ033.

ESA continues to experience slippage in design completion and advertise dates across a number of packages.

2.1 Engineering/Design and Construction Phase Services

As of the end of February 2015, MTACC reported that the overall Engineering effort was 98.8% complete, based on Earned Value for Design Deliverables, compared with a Planned status of 100%. Their Cost Report shows 88.7% of the overall EIS & Engineering category as invoiced and 88.7% of the budgeted section titled "Design" (including Design Settlement) as having been invoiced. All those percentages have remained the same since the previous month.

Status:

MTACC continued to investigate the potential scope transfer of the south back of house via a change order from the CM007 package to the CM005 Contract and negotiations continue with the CM005 contractor. At this time the scope remains in CM007 and the design documents are ready for solicitation. The PMT will need to make a final decision in April 2015.

A Preliminary Change Order (PCO) request was issued to the GEC to develop a new, stand-alone package CH061A (Tunnel 'A' and 'D' Construction). Negotiation with the GEC has been concluded and the contract modification approval in process.

Some additional scope transfers from the CH053 & CH054A contracts are also being considered by ESA Management.

Observation:

The GEC and PMT continue to consistently miss many of its target dates for remaining design activities on the project.

Concerns and Recommendations:

The PMT design management team needs to focus on achieving intermediate milestones in a timely fashion and work closely with the GEC to help make this happen. The continuing shifting of scope has made finalizing design documents and drawings extremely difficult. The PMOC had previously recommended that the PMT develop a design milestone tracking sheet for the remaining design work on the project similar to what was done for the Harold catenary design work in 2012 in order to more effectively manage the design effort, however the PMT has not implemented this tracking sheet. [Ref: ESA-103-Dec12]

2.2 Procurement

Status:

For CM014B, the PMT submitted a recommendation to the MTA Board for award of the contract in January 2015. Award and NTP were issued February 2, 2015. Initial submittals, permits, baseline schedule development, and contractor mobilization are under way and will continue until on site work begins in May 2015. The Contract award included four options: elevators; the Biltmore Room; 48th Street entrance; and the north transfer station.

The PMT remains undecided as to how to procure the signal installation work currently in a stand-alone package CS086. The PMOC recommends that this decision be made quickly, since the signal installation work must be coordinated with the track work to be performed in CM007.

As of the end of February 2015, the Cost Report showed total procurement activity on the project as 69.0% complete, with \$7.023 billion in contracts awarded out of the \$10.177B current reported budget.

The CM007 package was advertised on December 23, 2014. Contract documents were made available for proposers on January 15, 2015 with proposals due on May 1, 2015. The pre-proposal conference and site tour were held in early March 2015.

Concerns and Recommendations:

The lack of stability in the contracting strategy and Contract Packaging Plan remains a concern. The PMT continued to shift and split scope among different packages during 4Q2014 (latest information available to PMOC), making it difficult to fully understand the impact of these changes to the overall ESA Project. An updated draft Contract Packaging Plan (revision 10.0) was submitted on March 28, 2014 and the next revision still has not been issued as of March 31, 2015. ESA should make an effort to adhere to the current version of the CPP and minimize shifting scope for the remainder of the project.

Additionally, the latest shifts under consideration include moving the back of the house work in CM007 into CM005 (this needs a final decision in April 2015); and moving scope from CH053 into the new CH061A (Harold Structures-Tunnel A) to mitigate some of the delay in CH053. Additionally, the East Bound Re-route tunnel construction method is being revised from a top down to a traditional cut and cover method and the CH058 package is being split into two separate Contracts. CH058A will contain the East Bound Re-route; CH058B will contain the loop box.

2.3 Construction

The PMT reported in its February 2015 Monthly Progress Report that the total construction progress reached 54.6% complete vs. 55.0% planned; the PMOC calculations based on data in

the ESA Cost Report agree with the ESA completed percentage. Details for active construction contracts are provided below.

Manhattan Contracts

CM005 – Manhattan South Structures

Status: As of February 28, 2015, the MTACC increased its forecast for Estimate at Completion for CM005 to \$239,429,369. The forecast date for Substantial Completion remained at February 6, 2016. Actual construction progress was 4.7% versus 2.9% planned. Cumulative progress was 68.9% actual versus 69.3% 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)	\$236.6M	+\$36.0M +17.9%	\$239.4M	+\$38.8M +19.3%	+\$2.8M +1.2%	
Scheduled SC Date	02/06/16	02/06/16		02/06/16			
Duration (NTP - SC)	29 mos.	29 mos.	0 mos. 0.0%	29 mos.	0 mos. 0.0%	0 mos. 0.0%	
% Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
69.3%	68.9%	54.7%	4.6%	17.3%	2.9%	3.4%	3.1%/mo.

From February 2015 ESA Monthly Report

Construction Progress: During March 2015, the contractor continued to place upper level exterior wall concrete in the GCT 1&2 East Wye Cavern, upper level exterior wall and slab concrete in the GCT 1&2 West Wye Cavern, interior wall and upper level slab concrete at the 38th St. Vent Facility, continued miscellaneous concrete and PAC application in the Air Wye, the East Fan Chamber, and Access Tunnel #1, and continued to install lower level exterior wall rebar at the south end of the Eastbound Cavern.

Observations/Analysis: The contractor remains ahead of its construction schedule at each of its work locations and its actual progress continues to exceed planned progress each month. The PMOC has observed that ESA management and the contractor work well together to make this possible.

Concerns and Recommendations: The PMOC has no concerns about the CM005 contract at this time and recommends that ESA and the contractor continue to administer the contract in the same fashion until it is completed.

CM006 – Manhattan North Structures

Status: As of February 28, 2015, the Estimate at Completion for CM006 increased to \$319,245,750 due to pending and potential contract modifications. The MTACC forecast for Substantial Completion remained at November 30, 2016. Actual construction progress was 2.7% versus 5.9% planned. Cumulative progress was 17.5% actual versus 31.2% 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	\$294.2M	\$316.5M	+\$22.3M +7.6%	\$319.2M	+\$25.0M +8.5%	+\$2.7M +0.9%	
Scheduled SC Date	11/30/16	11/30/16		11/30/16			
Duration (NTP - SC)	32 mos.	32 mos.	0 mos. 0.0%	32 mos.	0 mos. 0.0%	0 mos. 0.0%	
% Complete		Actual - 12 mos.*		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
31.2%	17.5%			17.5%	2.9%	3.1%/mo.	4.1%/mo.

From February 2015 ESA Monthly Report

*November 2014 was the first month for which MTACC generated a progress curve for CM006. As a result, there is no historical data to populate these columns yet.

Construction Progress: During March 2015, the contractor completed all concrete and pneumatically applied concrete in the GCT 4 West Wye Cavern, continued to place intermediate level interior walls and the upper level slab on the west side of the plenum of the 55th St. Vent Facility, continued to place archway re-bar in the GCT 5 West Wye Cavern, placed invert concrete and began invert re-bar placement in the Cross Flue north of 55th St., continued to place invert concrete in various 63rd St. Tunnels, and placed concrete on the north face and constructed intermediate mezzanine level support columns at the north end of the Eastbound Cavern.

Observations/Analysis: ESA changed its Construction Manager for the CM006 contract in March 2015 and the PMOC believes that it will have a positive effect on both the contractor's production and on the administration of the documentation. The new ESA CM also manages the CM005 contract which has run smoothly since its inception. The PMOC believes the ESA CM will have the same effect with CM006 although there will be historical problems that didn't exist with CM005 that will have to be overcome. The PMOC notes that the progress percentage that the contractor will have to achieve to finish the contract by the projected Substantial Completion date has increased since the 4Q2014 PMOC Quarterly Report (4.1% vs. 3.7%). This will provide the new CM with a significant challenge.

Concerns and Recommendations: The PMOC is concerned that the CM006 contractor must increase its construction pace in order to complete its contract by the present Substantial Completion date. The contractor can increase the number of locations where it is working, e.g. multiple tunnels can be worked simultaneously, resume construction at the 50th St. Vent Facility,

etc, in order to accomplish this. The PMOC recommends that ESA direct the contractor to follow the recovery schedule.

CM013A – 55th Street Vent Facility

Status: MTACC reports that through February 28, 2015 the EAC has increased slightly to \$57.27 million from the previous \$57.11 million. Forecast Substantial Completion remains May 28, 2015. MTACC reports that the actual percent complete is 81.3% vs.85.9% planned. MTACC further reports that the forecast substantial completion date will be further extended to September 2015 due to revisions in the hoisting system.

		Original Baseline	Current Approved Baseline	Change to Original (2 – 1)	EAC / Forecast	Change to Original (4 – 1)	Change to Current (4 – 2)
		Contract Cost	\$56.04M	\$56.98M	+\$.94M +1.67%	\$57.27M	+\$1.23M 2.19%
Scheduled SC Date		04/05/15	05/28/15		05/28/15		
Duration (NTP - SC)		31 mos.	32.5mos.	+1.5 mos.	32.5 mos.	+1.5mos.	+0mos.
Percent Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
85.9%	81.3%	30.6%	3.7%	56.35%	2.08%	100%	5.22%

From February 2015 ESA Monthly Report

Construction Progress:

Plenum: Concrete placement of the Plenum Roof is complete in the East Plenum and continues in the West Plenum. Installation of sewer manholes and connection sewer pipe continues at street level above the Plenum Roof. Electrical conduit work is ongoing in the West Plenum.

Cavern: Welding and erection of the permanent precast stairs continues through the cavern upper levels to the shaft. Painting of Upper Cavern Rooms continues. Installation of hoist beams in Upper and Lower Fan Rooms is on hold due to the revised hoisting system.

Shaft: Completed pneumatically applied concrete at the lower level of the shaft. Continued forming the interior shaft walls in the lower level.

Observations/Analysis: The work of this contract continues to progress towards substantial completion, although the ability to complete within 3.5 months is questionable. However MTACC reports their intention to extend completion of base contract work to July 2015 which is more achievable. The extension of 3.5 months to May is questionable. Adding two months seems achievable.

Concerns and Recommendations:

None at this time.

CM014A – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that through February 28, 2015, the EAC has increased to \$59.26million from the previous \$56.70 million. The increased EAC is due to both pending and forecast contract modifications. MTACC reports that the new EAC is \$1.7 million over the current revised budget. Forecast Substantial Completion has been further extended to August 1, 2015 from the previous July 2, 2015 due to the time it will take to complete the substation completion as the new battery exhaust system was recently introduced. This will also delay ConEd inspection and energization of the system until after their summer moratorium. Through February 2015, the actual percent complete reported was 91.7% versus 100% 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)	\$51.95M	+\$8.45M +19.43%	\$59.26M	+\$15.76M +36.23%	+%7.31M +14.07%	
Scheduled SC Date	04/25/13	12/15/14		08/01/15			
Duration (NTP - SC)	18 mos.	38 mos.	+20 mos. +111.11%	+45.6 mos	+27.6 mos. +153.33%	+7.5 mo. +20.00%	
% Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total.	Avg./mo	Contract SC	Forecast SC
100%	91.7%	NA	NA	NA	NA	100%	1.46%/mo

From February 2015 MTA Monthly Report

Construction Progress: During March 2015, installation of fire stopping continued with daily quality inspections. CMU erection is ongoing and near completion with the work in Shaft #2. Ductwork and piping installation is ongoing in Zones #1 & #2. Sprinkler/Standpipe installation continued in Zones #4 & #5. Installation of 16341 switchgear continued. 600V cable installation neared completion. Branch feeder and conduit installation is ongoing throughout. Painting of CMU walls and installation of doors & hardware continues throughout. Resinous flooring is complete. SCADA installation began and is ongoing. Installation of the Trapped Key Interlocking Hardware (Kirk Key) is ongoing throughout. The high voltage testing will begin April 6, 2015.

Observations/Analysis: MNR continues to perform the work on the removal/relocation of the utilities that are obstructing the new work for the Dining Concourse access. This work takes place at night.

Concerns and Recommendation: The PMOC is concerned that the ongoing delays, this time caused by the new battery exhaust system, the resulting delays to ConEd energization, and the contractor’s historic lack of timely prosecution of the work, will extend Substantial Completion into the 4th Quarter of 2015. The PMOC will continue to monitor the impact of these delays on the CM)14-B contract.

CM014B – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that through February 28, 2015, the initial EAC was \$404.62 million, the base contract award amount. The substantial completion date is August 18, 2018.

	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)	\$404.62M	+\$0.0M	\$404.62M	+\$0.0M	+\$0.0M	
Scheduled SC Date	08/18/18	08/18/18		08/18/18			
Duration (NTP - SC)	42 mos.	42 mos.	+0 mos.	42 mos	+0 mos.	+0 mo.	
% Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total.	Avg./mo	Contract SC	Forecast SC
NA	NA	NA	NA	NA	NA	N/A	NA

From February 2015 MTA Monthly Report

Construction Progress:

The first Contract Progress Meeting was held March 3, 2015.

Preliminary Schedule – This is still delayed. The contractor cites logic issues with the 48th Entrance infrastructure. This has cost another week delay in the submittal.

Baseline Schedule – The new forecast for submitting the Baseline Schedule is April 10, 2015 from the previous March 27, 2015.

The BIM Execution Plan is complete and submitted.

All key permits, including Construction Permit, DOT Permits, DOB Permits, and Sewage Discharge Permits are in various stages of application. Mobilization at the B/N Yard will be on April 6, 2015 and mobilization at Madison Yard will be on May 1, 2015.

Observations/Analysis:

None at this time

Concerns and Recommendation:

None at this time.

Queens Third-Party Contracts

CQ032 Contract – Plaza Substation and Queens Structures

Status: As of February 28, 2015, the Estimate at Completion for CQ032 increased to \$247,101,773 due to pending and potential contract modifications. The MTACC forecast for Substantial Completion was extended by 9 days to March 17, 2016. Actual construction progress for February 2015 was 1.5% versus 2.9% planned. Cumulative progress through February 28, 2015, was 74.4% actual versus 85.8% 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)	\$225.9M	\$78.5M +53.3%	\$247.1M	+\$99.7M +67.6%	+\$21.2M +9.4%	
Scheduled SC Date	08/14/14	10/7/15		3/17/16			
Duration (NTP - SC)	36 mos.	50 mos.	+14 mos.	55 mos.	+19 mos. +52.8%	+5 mos. +10.0%	
Percent Complete		Actual - 12 mos.*		Actual - 6 mos.*		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
85.8%	74.4%	24.6%	2.1%/mo.	5.4%	0.9%	2.8%/mo.	2.1%/mo.

From February 2015 ESA Monthly Report

Construction Progress: During March 2015, the CQ032 contractor continued to excavate the foundation and began to construct lower level exterior walls of the Yard Services Building, continued structural steel erection and concrete placement for the lower level exterior walls of the Plaza Air Intake/Exhaust Building, continued to install conduit and duct bank re-bar in the Plaza Revenue Level, Tunnels A, B/C, and D, and install conduit and place duct bank concrete in the 63rd St. Tunnel, although all exterior work was hampered by severe weather.

Observations/Analysis: Although the contractor has increased its construction pace significantly in the past several months, nonetheless it will need to improve its monthly percent complete (from 1.7% to 2.1%) to finish the contract by its projected Substantial Completion date of March 17, 2016. The PMOC believes that the inclement weather during 1Q2015 had a negative impact on the contractor that it should be able to overcome as the weather turns more favorable.

Concerns and Recommendations: The PMOC has no specific concerns about the CQ032 contract at this time. The PMOC does recommend, however, that the contractor consider ways to increase its production wherever and whenever possible.

Harold Interlocking Contracts

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

Status: As of February 28, 2015, the Estimate at Completion for CH053 increased to \$294,520,990 due to pending and potential contract modifications. The MTACC forecast for Substantial Completion was extended 3 weeks to June 27, 2015. Actual construction progress was 0.3% versus 0.0% planned (contract was supposed to be complete). Cumulative progress was 94.7% 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	\$137.30M (Award)	\$294.0M	+\$156.7M +114.1%	+\$294.5M	+\$157.2M +114.5%	\$0.5M +0.2%	
Scheduled SC Date	05/05/10	9/9/14		6/27/15			
Duration (NTP - SC)	28 mos.	80 mos.	+52 mos. +185.7%	90 mos.	+62 mos. +221.4%	+10 mos. +12.5%	
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%	94.7%	8.0%	0.7%	3.1%	0.5%	N/A	1.8%/mo.

From February 2015 ESA Monthly Report

Construction Progress: During March 2015, the contractor continued to pull and splice 12kV feeder cables between Sub 44 and the Sunnyside Yard Frequency Converter. The contractor completed construction work on these 3 circuits in March and is scheduled to make final tests to place them in service during April 2015. The contractor also continued to pull and splice utility and communications cables through micro-tunnel runs #1 through #4 at the new G02 Substation and install new electrical service to return the existing Amtrak Car Washer to permanent electrical power.

Observations/Analysis: The CH053 contractor was negatively impacted by the severe weather during the last two months of 1Q2015, although the nature of its remaining work is, for the most part, not civil. The contractor continued to be affected by lack of sufficient Force Account resources, which were diverted by the railroads for weather-related protection of their rights of way. The contractor must maintain an average of 1.8% per month construction progress to finish its contract by its forecast date of June 27, 2015.

Concerns and Recommendations: For the PMOC’s recommendation for the CH053 contract, please refer to its recommendation for the CH057A contract, below.

CH054A Contract – Harold Structures Part 2A

Status: As of February 28, 2015, the Estimate at Completion for CH054A increased to \$57,017,016 due to pending and potential contract modifications. The MTACC forecast for Substantial Completion was extended by 6 weeks to June 10, 2015. Actual construction progress for February 2015 was 0.4% versus 0.0% planned (contract was supposed to be complete). Cumulative progress was 92.7% 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	\$21.80M (Award)	\$56.4M	+\$34.6M +158.7%	+\$57.0M	+\$35.2M +161.5%	+\$0.6M +1.1%	
Scheduled SC Date	12/21/10	8/9/14		6/10/15			
Duration (NTP - SC)	16 mos.	60 mos.	+44 mos.	+70 mos.	+44 mos. +275.0%	+10 mos. +16.7%	
Percent Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress *	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contr act SC	Forecast SC
100.0%	92.7%	21.2%	1.8%	6.1%	1.1%	N/A – Past Due	2.4%/mo.

From February 2015 ESA Monthly Report

Construction Progress:

During March 2015, although hampered by inclement weather, the CH054A contractor completed installation of 3 12kV feeder cables (circuits C1, C2, and C3) between the East River Tunnel portals and Sub 44 and completed backfill of the 475' sewer line it installed between Thomson Avenue and Queens Boulevard.

Observations/Analysis:

The last significant task in CH054A's work scope is construction of roadbed prior to Loop 1A trackwork (to be done by others). Now that the weather is turning for the better, the PMOC believes that the contractor will have no trouble completing this task before its forecast Substantial Completion date of June 10, 2015.

Concerns and Recommendations:

For the PMOC's recommendation for the CH054A contract, please refer to its recommendation for the CH057A contract, below.

Contract CH057A – Part 3 Westbound Bypass

Status: As of February 28, 2015, the Estimate at Completion for CH057A increased to \$114,890,588 due to pending and potential contract modifications. The MTACC forecast for Substantial Completion was extended by 3 weeks to October 6, 2016. Actual construction progress was 0.9% versus 4.8% planned. Cumulative progress was 15.9% actual versus 42.4% 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	\$103.3M	\$104.4M	+\$1.1M	\$114.9M	+\$11.6M +11.2%	+\$10.5M +10.1%	
Scheduled SC Date	1/31/16	1/31/16		10/6/16			
Duration (NTP - SC)	26 mos.	26 mos.	0	35 mos.	+9 mos. +34.6%	+9 mos. +34.6%	
Percent Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress *	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contr act SC	Forecast SC
42.4%	15.9%	15.9%	1.3%	4.7%	0.8%	3.8%/mo.	5.3%/mo.

From February 2015 ESA Monthly Report

Construction Progress: As with all of the Harold and Queens contracts during March 2015, the contractor was hampered by severe weather. It did, however, continue to install de-watering wells on the west side of the concrete slab, continue construction of its work deck for the East Approach Structure, and fabrication of its “jacked box” tunnel shield (in its yard in Newark, NJ) for the excavation of the Westbound Bypass under Lines 2 and 4.

Observations/Analysis: Although it was not able to install piles during the February and March 2015, the contractor was able to place itself in a position for a fast start after the weather turns. It was able to remove Amtrak signal cases 6EA and 6EB during March 2015, which will allow it to install piles under Queens Boulevard overhead bridge and it continued to install de-watering wells. The contractor has a viable recovery plan for its pile driving and appears to well positioned to begin the “jacked box” excavation in mid-late summer 2015, as planned.

Concerns and Recommendations: In order for ESA to supply sufficient Force Account resources to the CH057A contractor, which is already behind schedule, the PMOC recommends that prioritize completion of the CH053 and CH054A contracts (which share F/A resources and are both within 2-3 months of Substantial Completion) by temporarily supplying those 2 contracts with all the Force Account support they require. In this manner, although CH057A may suffer a temporary setback, it will be the only contractor that ESA and F/A will have to support for several months after CH053 and CH054A SCs. The PMOC believes that this will be the most effective course of action for ESA to follow.

Systems Contracts

VH051 (Part 1) – Harold and Point Central Instrument Locations (CILs)

Status: As of February 28, 2015, the Estimate at Completion for VH051 (Part 1) remained at \$29,330,054. The MTACC forecast for Substantial Completion remained at July 31, 2015. Fabrication of all CILs is complete and the only remaining scope of VH051 work is contractor support of CIL installation when each occurs and delivery of As Built drawings afterward.

	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	\$30.89M (Award)	\$27.7M	-\$3.2M -10.4%	\$29.3M	+\$1.6M +5.2%	+\$1.6M +5.8%	
Scheduled SC Date	06/25/12	7/31/15		07/31/15			
Duration (NTP - SC)	37 mos.	73 mos.	+36 mos. +97.3%	73 mos.	+36 mos. +97.3%	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
100.0%	100.0%	-	-	-	-	(N/A)	(N/A)

From February 2015 ESA Monthly Report

Construction Progress: Fabrication of all CILs for VH051 is complete. The only remaining scope of work is contractor support during each CIL installation and delivery of As Built drawings after the work is completed.

Observations/Analysis: The contractor will support the testing and cutover of the LIRR “H3” CIL during 4Q2015. Cutovers for the “H1”, “H2”, “H5”, “H6”, and Location 30 CILs are scheduled for 2016 and later.

Concerns and Recommendations: Since all CILs are fabricated and ready for placement, the PMOC has no concerns about the VH051 (Part 1) contract. The PMOC is concerned, however, about when the LIRR will cutover each CIL and how each cutover will impact the entire Harold schedule. This concern is driven by LIRR Force Account construction and will be expressed in the FHL01, 02, and 03 sections of this report at the appropriate time.

VH051 (Part 2) – Harold Tower Supervisory Control System (HTSCS)

Status: As of February 28, 2015, the Estimate at Completion for VH051 (Part 2) remained at \$9,121,475. The MTACC forecast for Substantial Completion remained at July 31, 2015. Fabrication of system components is complete and the only VH051 (Part 2) scope remaining is contractor support of CIL cutovers as they occur and delivery of As Built drawings after each cutover.

	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	\$7.10M (Award)	\$7.9M	+\$0.8M +11.3%	\$9.1M	+\$2.0M +28.2%	+\$1.2M +15.2%	
Scheduled SC Date	08/24/10	08/24/10		07/31/15			
Duration (NTP - SC)	18 mos.	18 mos.	+0 mos. 0%	77 mos.	+ 59 mos. +327.8%	+59 mos. +327.8%	
Percent Complete	Plan	Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
	100%					(N/A)	(N/A)

From February 2015 ESA Monthly Report

Construction Progress: Fabrication of all system components is complete. The only remaining scope in VH051 (Part 2) is contractor support as the Harold CILs are tested and cutover and delivery of As Built drawings when complete.

Observations/Analysis: The contractor will support the testing and cutover of the LIRR “H3” CIL during 4Q2015. Cutovers for the “H1”, “H2”, “H5”, “H6”, and Location 30 CILs are scheduled for 2016 and later.

Concerns and Recommendations: Since all components for the Harold Supervisory Control System are fabricated and ready for placement, the PMOC has no concerns about the VH051 (Part 2) contract. As with VH051 (Part 1), the PMOC is concerned about when the LIRR will cutover the component CILs that Harold will control and how each cutover will impact the schedule. This concern is driven by LIRR Force Account construction performance and will be addressed in the FHL01, 02, and 03 sections of this report at the appropriate time, however.

CS179 (Systems Package 1-Base Contract)

Status: As of February 28, 2015, the Estimate at Completion for CS179 decreased slightly to \$551,499,740. The MTACC forecast for Substantial Completion remained at November 25, 2019. The MTACC has not developed a progress curve for CS179 yet, so no monthly or cumulative progress percentages are available.

Construction Progress: The contractor began field construction in March 2015 with demolition of the fan room and pot head repairs in the 2nd Avenue Vent Facility, installation of conduit in the B-10 Substation in Queens, and conduit layout in the Vernon Boulevard and Roosevelt Island Vent Facilities.

Observations/Analysis: The ESA CM informed the PMOC that the CS179 contractor has recently improved the quality and timeliness of its submissions. It has also continued to develop its baseline schedule, the latest of which showed great improvement (according to the ESA CM). Both of these areas have been a source of concern to ESA because the contractor had struggled with them since NTP. As a result, the PMOC believes that the contractor has apparently turned the corner and now must continue to improve its administrative efforts while at the same time beginning construction in those locations recently turned over to it.

Concerns and Recommendations: The CS179 contractor has amassed a history of unsatisfactory submissions and schedules since NTP. Although it is encouraging that the contractor is beginning to correct this, nonetheless the PMOC believes that a relapse remains a possibility. The PMOC therefore recommends that ESA and the contractor double their efforts to work closely together to develop future submissions and schedules so that they can be approved when originally submitted. This will avoid wasting the valuable project time encompassed by the usual ebb and flow of countless submissions and re-submissions.

Harold Stage I Amtrak FA (FHA01)

Status: As of February 28, 2015, the Estimate at Completion for FHA01 remained at \$18,418,309. The MTACC forecast for Substantial Completion was extended by 10 days to April 21, 2015. Actual construction progress for February 2015 was 0.0% versus 0.0% planned. Cumulative progress through February 28, 2015, was 97.8% actual versus 99.0% planned.

<u>FHA01</u>	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	\$9.5M	\$18.8M	+\$9.3M +97.9%	\$18.4M	+\$8.9M +93.7%	-\$0.4M -2.1%	
Scheduled SC Date	09/30/10	2/4/16		4/21/16			
Duration (NTP - SC)	39 mos.	103 mos.	+64 mos. +164.1%	106 mos.	+67 mos. +171.8%	+3 mos. +2.9%	
Percent Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
99.0%	97.8%	2.7%	0.2%	0.5%	0.1%	N/A – Past Due	0.2%/mo.

From February 2015 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.

Construction Progress:

Amtrak Electric Traction personnel continued to make catenary wire transfers and modifications between Sub 44 and the East River Tunnel portals, including installation of catenary wires over the #821 and #823 crossovers.

Observations/Analysis:

Current catenary work locations remain limited due to the sequence of contract construction, although Amtrak takes advantage of opportunities presented to it.

Concerns and Recommendations:

Since the FHA01 catenary work is close to completion, the PMOC has no specific concerns or recommendations about it at this time.

Harold Early Stage 2 Amtrak FA (FHA02)

Status: As of February 28, 2015, the Estimate at Completion for FHA02 decreased to \$49,362,492. The MTACC’s forecast for Substantial Completion was extended by 3 weeks to February 16, 2018. Actual construction progress was 0.7% versus 1.2% planned. Cumulative progress was 92.8% actual versus 94.4% planned.

<u>FHA02</u>	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	\$45.4M	+\$35.7M +368.0%	\$49.4M	+\$39.7M +409.3%	+\$4.0M +8.8%	
Scheduled SC Date	9/30/13	8/15/17		12/16/18			
Duration (NTP - SC)	58 mos.	106 mos.	+48 mos. +82.8%	122 mos.	+64 mos. +110.3%	+16 mos. +15.1%	
Percent Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
94.4%	92.8%	14.9%	1.2%	4.3%	0.7%	1.7%	0.2%/mo.

From February 2015 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.

Construction Progress: During March 2015, Amtrak C&S personnel installed communications trough between “R7” location and the future “T” CIH and removed signal apparatus and supported case removal at the 6EA/6EB signal location.

Observations/Analysis: ESA continues its re-baselining process for all future Harold Interlocking construction. Some FHA02 activities will be re-scheduled as a result, but the PMOC is confident that Amtrak will be able to react favorably to these changes.

Concerns and Recommendations: The PMOC has no concerns about or recommendations for FHA02 construction at this time other than to encourage ESA and Amtrak to continue to work together to complete the project.

Loop Interlocking CIL Amtrak FQA65

Status: As of February 28, 2015, the Estimate at Completion for FQA65 decreased to \$29,629,321. The MTACC forecast for Substantial Completion was extended by 3 weeks to December 28, 2019. Actual construction progress was 0.3% versus 2.5% planned. Cumulative progress was 8.4% actual versus 28.7% planned.

<u>FQA65</u>	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	\$21.0M	+\$11.9M	\$29.7M	+\$20.6M +226.4%	+\$8.7M +41.4%	
Schedule SC Date	8/12/18	8/12/18		12/28/19			
Duration (NTP - SC)	55 mos.	55 mos.	(no change)	70 mos.	+15 mos. +27.3%	+15 mos. +27.3%	
Percent Complete		Actual – 12 mos.		Actual – 6 mos.		Avg. Req'd Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
28.7%	8.4%	3.7%	0.3%	2.1%	0.4%	1.8%/mo.	1.6%/mo.

From February 2015 ESA Monthly Report

Construction Progress:

During March 2015, Amtrak C&S personnel continued to excavate and install a limited amount of signal trough between future “Loop” and “T” Interlockings (due to weather constraints) and set the new “T” CIH in place.

Observations/Analysis:

Due to the re-baselined Substantial Completion date of 2019 for Loop and “T” Interlockings, the PMOC is confident that Amtrak will be able to complete all its work by then.

Concerns and Recommendations:

The PMOC has no concerns about the FQA65 portion of the ESA work program at present.

Harold Stage 1 LIRR FA (FHL01)

Status: As of February 28, 2015, the Estimate at Completion for FHL01 increased to \$24,379,363, although the MTACC did not explain the reason for the increase. The MTACC forecast for Substantial Completion was extended by 5-1/2 months to March 3, 2016. Actual construction progress was 0.0% versus 0.8% planned. Cumulative progress was 99.3% actual versus 98.4% planned.

<u>FHL01</u>	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	\$28.80M	\$20.80M	-\$8.00M -27.8%	\$24.3M	-\$4.5M -15.6%	+\$3.5M +16.8%	
Scheduled SC Date	09/30/10	4/9/15		3/3/16			
Duration (NTP - SC)	39 mos.	94 mos.	+55 mos. +141.0%	105 mos.	+66 mos. +169.2%	+11 mos. +11.7%	
Percent Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
98.4%	99.3%	21.9%	1.8%	0.6%	0.1%	0.1%/mo.	0.1%/mo.

From February 2015 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.

Construction Progress: No significant FHL01 work was performed during March 2015.

Observations/Analysis: The PMOC notes that LIRR personnel continue to work in locations to complete tasks started earlier in the schedule, especially the signal power separation project. It is important to do so and to establish a checklist of all such locations so that work begun earlier is completed and that all work is complete for the overall Harold Interlocking cutover.

Concerns and Recommendations: Since LIRR is progressing its FHL01 work in the manner railroad projects are normally performed (i.e. non-sequentially), the PMOC is not overly concerned about partially completed work at this time. This will, however, become critical if future cutover dates approach and seemingly small tasks are not complete. This could lead to much bigger problems with corresponding schedule delays if tasks are postponed over and over again. The PMOC therefore recommends that LIRR establish a comprehensive checklist of all partially done work so that it can assure itself that all predecessor construction is complete before the overall Harold cutover.

Harold Early Stage 2 LIRR FA (FHL02)

Status: As of February 28, 2015, the Estimate at Completion for FHL02 increased to \$84,984,161, although the MTACC did not explain the reason for the increase. The MTACC forecast for Substantial Completion was extended by 3 weeks to December 26, 2017. Actual construction progress was 0.8% versus 2.4% planned. Cumulative progress was 65.0% actual versus 76.3% planned.

<u>FHL02</u>	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	\$7.40M	\$51.0M	+\$42.6M +589.2%	+\$85.0M	+\$77.6M +1048.6%	+\$34.0M +66.7%	
Schedule SC Date	11/30/15	11/25/16	/	12/26/17	/	/	
Duration (NTP - SC)	75 mos.	87 mos.	+12 mos. +16.0%	100 mos.	+25 mos. +33.3%	+13 mos. +14.9%	
Percent Complete		Actual - 12 mos.		Actual - 6 mos.		Avg. Req'd. Progress	
Plan	Actual	Total	Avg./mo	Total	Avg./mo	Contract SC	Forecast SC
76.3%	65.0%	7.6%	0.6%	7.0%	1.2%	1.3%/mo.	1.2%/mo. 1.1%/mo.

From February 2015 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: LIRR signal personnel completed support of excavation for conduit line between the “H4” and “H3” CILs and began to install signal cables between the two and installed switch heater cables at the “H6” CIL. Communications personnel installed fiber optic cable between the “H5” and “H4” CILs and began communications pole installations between 48th St. and Woodside Interlocking. High Tension personnel continued to install 3rd rail apparatus at turnouts installed in 2014.

Observations/Analysis: The proposed “ESA First” Schedule re-baseline will not have a great impact on the timing of the signal cutovers that LIRR needs to do for the program. That is, cutovers are scheduled to occur at relatively the same times as the current schedule. The PMOC notes that the LIRR will need to maintain the “ESA First” schedule to keep Harold construction off the critical path, however.

Concerns and Recommendations:

The PMOC has no immediate concerns about or recommendations for FHL02 at this time.

2.4 Operational Readiness

The 1Q2015 Quarterly Operational Readiness meeting was held on March 19, 2015. The following Operational Readiness progress was made since the last quarterly meeting:

- LIRR completed upgrade of its asset management database, Maximo, from version 7.1 to version 7.5;
- Volume 3, sections 1-7, of the Rail Activation Plan was revised and distributed for internal review. The final draft of these sections is scheduled to be complete during 2Q2015;
- Task Group #7, Safety and Security, continued to develop the system safety requirements for certification of the designs of each of the ESA contracts;
- Task Group #4, Asset Management, continued to develop procedures for interim testing and maintenance of system components between Substantial Completion and the Revenue Service Date to assure components will remain operational.

Observation: The Operational Readiness Group continues to coordinate ESA PMT activities into a cohesive plan required to commission the project for daily operations.

Concerns and Recommendations: The PMOC has no significant concerns or recommendations about the Operational Readiness Group at this time.

2.5 Vehicles

Board Approval was received and Notice of Award executed September 18, 2013 for the LIRR M-9 vehicle procurement. These cars will initially be part of the M-3 replacement Program and will be used for ESA when it comes on line. This procurement does not use federal funding.

Board Approval was received and Notice of Award executed September 18, 2013 for the LIRR M-9 vehicle procurement. These cars will initially be part of the M-3 replacement Program and will be used for ESA when it comes on line. This procurement does not use federal funding.

Status:

No design reviews were conducted during 1Q2015.

Observations:

All Preliminary Design Reviews (PDRs) for the M-9 vehicle procurement were completed during 4Q2014.

Concerns and Recommendations:

Although the design reviews were completed slightly behind schedule, the PMOC has no significant concerns about or recommendations for the ESA vehicle procurement at this time.

2.6 Property Acquisition and Real Estate

Status/Observations

During February 2015, the MTA continued to conduct internal meetings to discuss easements needed from 335 Madison Avenue, 415 Madison Avenue, and 280 Park Avenue in Manhattan for the CM014B and CM015 contracts. The MTA also met with owners of the 250 Park Avenue

property in Manhattan to discuss the need to lower a building support beam to install stairs from the future LIRR concourse to the existing 47th Street Cross Passageway (for contract CM014B).

For Queens properties, the MTA continued internal discussions about permanent and temporary easements needed from 41-02 Northern Boulevard and a temporary easement from 30-25 Queens Boulevard for CH057 and CQ033, respectively.

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

2.7 Community Relations

Status:

The ESA Community Relations staff continued its outreach efforts during 1Q2015, which included:

- Monthly Community Outreach meetings in Manhattan and responses to residents about specific ESA activities at 58th and 55th Sts.;
- Monthly Community Outreach meetings in Queens and monthly flyer mailings to residents about on-going Sunnyside area ESA construction.

Observation:

The PMOC notes that the MTACC Community Relations staff continues to perform its outreach tasks in an entirely effective manner.

Concerns and Recommendations:

The PMOC has no concerns about ESA community relations and recommends that the ESA Community Relations staff continue to perform its duties in exactly the same manner.

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 Q4-2015. MTACC subsequently submitted a revised Rev. 10 on March 13, 2015 that included updated information on the CCC.

Observation: The PMOC will follow up with FTA on finalizing responses and work with MTACC to resolve the remaining issues with the PMP.

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. The PMOC understands that the MTACC continues to work on its latest revision to the CMP, which the MTACC expects to issue by April 15, 2015. After that is complete, the MTACC will begin to update its SMP.

Observations:

As of March 31, 2015, MTACC has not submitted the revised CMP but noted that it will be issued by April 15, 2015.

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. Regarding updating the SMP, the PMOC recommends that ESA's SMP address at least the following items in its next revision:

- Logical diagram of schedule control
- Traceability in decision making procedure
- Establish its usefulness as a management tool
- Demonstrate MTACC's project control capabilities
- A viable plan to allocate schedule contingency

3.2 Project Procedures

Status: Revisions to the CMP and SMP may require updates to the referenced Project Procedures. The PMOC will evaluate this upon receipt and review of the revised CMP and SMP.

Observations: None

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

Fundamental differences between the two schedules are:

- [REDACTED] It should also be noted that ESA will be conducting a risk assessment for this package, and the result of this assessment is expected to be available at the end of April 2015.
- Additionally, the PMOC considers that Integrated Systems Testing will require a full 15 months, without disturbance, at the end of all construction work, but the ESA's schedule shows that majority of IST can be done while other construction work is going on.

It should be also noted that the PMOC has assumed three conditions should be satisfied so contract CM007 can start its work, and that's a major reason for such difference between the PMOC and ESA dates for NTP of this package. These three conditions are;

- CM005 finishes on time; contract is currently scheduled to finish on Feb. 2016.
- CM006 MS#2 to be finished before April 2016. The Contractual date of this milestone is Feb. 2016 however current forecast for this milestone is delayed 6 months
- There won't be a funding constraint for the award of this package. ESA's strategy is to be able to lock-in the winning contractor's proposal for 3 month so to be able to fund the package and ESA's schedule shows this will happen in October/November of 2015..

Concerns and Recommendations:

Adequate funding for the remaining work on ESA has become a significant risk. The PMOC is concerned about the schedule impacts on major procurements such as CM007, which is on the IPS critical path, should funding not be available when needed for award and NTP.

4.2 90-Day Look-Ahead of Important Activities

Upcoming contracts procurement schedule is:

- CHO57 – Bid opening and final BAFO are expected May 2015. NTP is forecasted for July 2015.
- CM007 – Bid opening and final BAFO are expected September 2015. NTP is forecasted for January 2016.
- CH058 – Bid opening and final BAFO are expected November 2015. NTP is forecasted for March 2016.

Table 4.1 below shows important milestones in next 90 days:

Table 4.1: Important Milestones in Next 90 Days

Activity ID	Activity Name	Start	Finish	IPS- CONTRACT	IPS- LOCATION
CS084-3210	NTP of TPSS Equipment Vendor Contract	14-Apr-15		CS084	Systems
FHA01-1120	Complete Catenary Wire - 821 & 823 Switches		19-Apr-15	FHA01	Harold
FHL01.SI.0017 5	FHL01 - Cutover 821/ 823 Crossover		19-Apr-15	FHL01	Harold
FHL02.SI.345	Complete Trough (Ball Field Area)		24-Apr-15	FHL02	Harold
CS179-AR24	CS179 AR 6A - Plaza C07 & C06 Level & Track Level & B10 Con Ed MH	01-May-15		CS179	Systems
FHL02.SI.365	Complete Cable Installation for H3-CIL Cutover		8-May-15	FHL02	Harold
FHL02-CSR140	Ready to start testing / Revision (H3)		15-May-15	FHL02	Harold

Critical Path Activities

Critical path has changed in ESA since last quarter. ESA has stated that “as of March 1, 2015, the first 9 months of the East Side Access Program Critical Path has shifted from CM005 completion of work, which is now forecasting early completion, to the procurement of CM007, and specifically delivery of first precast elements under CM007. The path then remains unchanged as it goes through completion of the GCT Cavern North Back of House structures and then shifts to CS179 installation and startup of Systems equipment within the Train Operation Center then on through Integrated Systems Testing. The critical path then flows into overall program completion activities and finishes at the early Revenue Service Date (RSD) of March 25, 2020 (additional contingencies, as mentioned in the paragraph immediately above, result in target RSD of February 12, 2021, and late RSD of December 13, 2022.)” Table below shows ESA’s current critical path.

Activity ID	Original Duration	Start	Finish
CM007 PROCUREMENT	258	23-Dec-14 A	31-Dec-15
CM007 NTP	0	4-Jan-16	4-Jan-16
Precast Procurement (From Shop Drawings to Start Delivery - Mezz Beams & Panels)	190	4-Jan-16	29-Sep-16
Mezzanine level	65	30-Sep-16	3-Jan-17
Upper Level	174	4-Jan-17	7-Sep-17
Upper Level	42	8-Sep-17	6-Nov-17
Lower level	21	9-Oct-17	6-Nov-17
CM007 MS #3 - Superstructure Complete (No longer a contract MS per Addendum #2)			6-Nov-17
Elevators & Escalators in East Cavern (South)	167	5-Feb-18	28-Sep-18
Elevators & Escalators in East Cavern (North)	88	27-Sep-18	31-Jan-19
CM007 MS #5A - Caverns Ready for Integrated Systems Testing			31-Jan-19
CM007 Ready for IST Turnover to CS179 Start IST in Caverns	56	1-Feb-19	19-Apr-19
GCT Caverns	64	19-Apr-19	22-Jul-19
CS 179 Communications	89	22-Jul-19	26-Nov-19
CS179 MS 13 - Substantial Completion Including Completion of IST	0		26-Nov-19

Delays in contract CQ032 are currently driving CM006, and CS179 contractual Access Restraints dates.

Since the re-baseline was issued in July 2014, the Harold schedule has been significantly impacted due to CIL design revisions including civil speed enforcement criteria, revised durations for CIL cutover testing requirements, delays to extended summer outage programs, reduced Amtrak support, and delays to CH053, CH054 contracts. The Harold schedule has been re-sequenced to account for these issues and the new schedule advances work elements required for LIRR service into GCT earlier in the schedule, also known as “ESA First” and delays completion of the FRA funded High Speed Rail elements until later in the schedule. MTACC has advised that the new Harold schedule details will be fully incorporated into April 1, 2015 update of the IPS. Additionally, because of delay in contract CH057A, the Harold critical path has shifted and begins with critical path of contract CH057A.

Furthermore, Contract CH057 has been repackaged, includes 15 options and is forecast to be awarded at the end 2Q 2015. Once the Harold re-plan schedule is finalized, a set of critical metrics can be developed to monitor project schedule performance. [Ref: ESA-A46-Dec12]. The PMOC is working to establish milestone tracking of baseline IPS of July 1, 2014 versus the current IPS and every quarter report on the progress of these milestones. The PMOC notes that since July 2014, ESA has changed the activity ID numbers of approximately 60% of its milestones. The PMOC continues to work with the PMT to establish a corrected baseline IPS so all activities and milestones can be tracked and reported on. This is an important element required under SMP section 5.1 “Work Breakdown Structure” that requires that activity IDs

should be traceable. Table below shows the total number of baseline Milestones with consideration for criticality (less than 60 days of float).

Table 4-2: July 2014 Baseline Milestones Schedule

Row Labels	F	H	IST	L	M	Q	R	S	Grand Total
2014									
Qtr3		52			4	6		8	70
Critical		1							1
Non		51			4	6		8	69
Qtr4		50			11	5		1	67
Critical		3							3
Non		47			11	5		1	64
2015									
Qtr1		25			10	3		1	39
Non		25			10	3		1	39
Qtr2		21			6	4		3	34
Non		21			6	4		3	34
Qtr3		9			16	4		2	31
Critical		1							1
Non		8			16	4		2	30
Qtr4		13			4	3		8	28
Critical		1							1
Non		12			4	3		8	27
2016									
Qtr1		10			9	3		2	24
Critical		2			1				3
Non		8			8	3		2	21
Qtr2		10			10	2	1	17	40
Critical		1			2				3
Non		9			8	2	1	17	37
Qtr3		14			6			4	24
Critical		1							1
Non		13			6			4	23
Qtr4		13			7	1	1	9	31
Critical		6							6
Non		7			7	1	1	9	25
2017									
Qtr1		2			13	2		13	30
Non		2			13	2		13	30
Qtr2		5			5			7	17
Non		5			5			7	17
Qtr3	1	13			5	1		3	23

Row Labels	F	H	IST	L	M	Q	R	S	Grand Total
Critical		2							2
Non	1	11			5	1		3	21
Qtr4	1	12			7	1		11	32
Non	1	12			7	1		11	32
2018									
Qtr1		8			9	1		7	25
Critical		1			1				2
Non		7			8	1		7	23
Qtr2	3	6		4	5	1		7	26
Critical		1			1	1		1	4
Non	3	5		4	4			6	22
Qtr3		1		2		3		6	12
Critical						2			2
Non		1		2		1		6	10
Qtr4		1		1	3	3		6	14
Critical						1		2	3
Non		1		1	3	2		4	11
2019									
Qtr1				4	2	1		3	10
Critical					1				1
Non				4	1	1		3	9
Qtr2		3		2				3	8
Critical		3							3
Non				2				3	5
Qtr3				2	2			2	6
Critical					1				1
Non				2	1			2	5
Qtr4				5	1			4	10
Critical								2	2
Non				5	1			2	8
2020									
Qtr1				2				1	3
Non				2				1	3
Qtr2	1		1						2
Critical	1		1						2
2021									
Qtr3	2								2
Critical	2								2
Grand Total	8	268	1	22	135	44	2	128	608

F: Start-Up/Testing and Commissioning
L: Operation Readiness

H: Harold Contracts
M: Manhattan Contracts

IST: Integrated System Testing
Q: Queens Contracts

S: System Contracts

The PMOC review and analysis show that 4 milestones, identified as critical in the July 2014 Baseline Schedule, were missed as of March 31, 2015. These are detailed in the following table.

New Activity ID	Activity Name	Start	Total Float	IPS-Contract	IPS-Location-J	Criticality	New Date	New Float
MTACC-1230	CH057 Advertise Date	29-Aug-14	58	CH057	H	Critical	19-Mar-15	139
CH57-H00110	CH057 - Bid Due Date	20-Oct-14	58	CH057	H	Critical	23-Apr-15	137
CH57-H0255	Issue Notice of Award (CH057)	1-Dec-14	80	CH057	H	Critical	26-May-15	191
CH057NTP	NTP CH057-Harold Struct Pt 2/3: 48th Bridge / EBRR(700lf) / D pit & Appr / Loop Box	2-Dec-14	80	CH057	H	Critical	7-Jul-15	108

The table below shows near critical path packages (the PMOC considers packages with less than 60 days of float “near Critical”)

Contract	Total Float
FHA02: Harold Stage 2 - Amtrak F/A: Balance Work	56
CM014B: GCT Concourse and Facilities Fit Out	34
CM005: Manhattan South Structures	58
CQ032: Plaza Substation & Queens Structures	12
CQ033: Mid-Day Storage Yard Facility	60
CH053: Harold Structures - Part 1 & G.O.2 Substation	47
CH057A: Westbound Bypass Structure (exclude Slab)	46
CH057D: Harold Track Work (PW1/NH1/WBY)	54
CH058: Harold Structures - Part 3, Eastbound Reroute, B/C Approach	24
CH057: Harold Structure - 48th Bridge and D Pit & Approach Structure	59
FHA01: Harold Stage 1 - Amtrak F/A	55
CS179: System Facilities - Package #1	0
CS084: Traction Power	44
FHL02: Harold Stage 2 - LIRR F/A	24
FHA03: Harold Stage 3 - Amtrak F/A	55
FHL03: Harold Stage 3 - LIRR F/A	54
FHA04: Harold Stage 4 - Amtrak F/A	55
FHL04: Harold Stage 4 - LIRR F/A	35
FQA65: Loop Interlocking - Amtrak F/A	55
ALL HAROLD COMPLETE - TURNOVER TO CS179 FOR IST	51

Additionally, the PMOC recommends that ESA develops a resource leveled schedule with Amtrak and LIRR resource availability assumptions below the maximum number of available resources, and consider changing it’s current RSD of March 2020 to a more realistic date rather

than just adding an inordinate amount of schedule contingency as is currently being done. MTACC has indicated that more realistic force account resource levels are used in the Harold Re-Plan. The PMOC will review schedule details and provide an evaluation. [Ref: ESA-109-June 13]



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

On June 23, 2014, MTACC presented a Budget for the ESA project of \$10,178M (excluding the [REDACTED] financing cost) to the MTA CPOC. The detailed monthly cost reports received by the PMOC reflect the budget as of the end of February 2015. Table 5.1 on the following page shows the changes in the SCC budget breakdown between the FFGA Baseline budget and the 2014 re-planned budget.

Observations: During the re-planning effort the PMT re-examined each of the contract packages. Some budgets changed due to major re-estimates, others due to adjustments in the Contingencies. Some scope transfer between packages occurred and some work was rebudgeted to Regional Investments (RI). Subsequent to the Budget Re-Plan several packages have required re-estimating and other have exceeded the re-plan budget.

Concerns and Recommendations: Whereas SCC breakdowns are assigned to scope transfers, there still remain issues of proper allocation of contingencies by SCC.

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

Standard Cost Category (SCC) No.	FFGA SCC baseline (YOE \$) M	June, 2014 Re-Plan (YOE \$)	Jan 2015 SSC (YOE \$) M	Feb 2015 SSC (YOE \$) M	Feb 2015 % of Re-Plan	Jan '14 to Feb '15 Change \$M	CBB Variance from FFGA %
10	1,989	3,405	3,413	3,411	100.18%	-2	71.49%
20	1,169	2,238	2,251	2,341	104.60%	90	100.26%
30	356	474	474	474	100.00%	0	33.15%
40	205	611	608	607	99.35%	-1	196.10%
50	619	606	573	574	94.72%	1	-7.27%
60	165	220	219	219	99.55%	0	32.73%
70	957	210	210	210	100.00%	0	-78.06%
80	1,184	1,975	1,975	1,975	100.00%	0	66.81%
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Subtotal	6,813	10,178	10,178**	10,178	100.00%	0	49.39%
100	1,036	1,036	1,036	1,036	100.00%	0	0.00%
Total Project Cost (10 – 100)	7,849	11,214*	11,214*	11,214*	100.00%	0	42.87%

*This total amount does not include Regional Investment amount of \$758,260,953.

Reasons for Changes to SCC Codes:

[REDACTED]
 SCC Codes 10, 40 and 50 - Changed due to issue changes that affect contingency

5.2 Project Cost Management and Control

Status:

The PMT has reported that, as of February 28, 2014, the actual total project progress was 55.4% vs. 55.5% planned progress resulting from the June 2014 re-baseline; a review of the actual project progress vs. the planned based on invoiced amount and the new budget shows the same percentages, but the PMOC notes that less than the planned scope has been completed to date. Table 5.2 shows the budget status of contracts awarded to date and invoiced amounts to date

Table 5.2: Project Budget and Invoices as of February 2015

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (Feb 2015)	Actual Awards (Feb 2015)	Paid to Date (Feb 2015)	Actual % Budget Paid
Construction	\$7,379,296,706	\$7,451,961,316	\$5,391,585,997	\$3,946,339,935	52.96%
Soft Costs Subtotal	\$2,798,474,304	\$2,725,809,694	\$1,631,687,789	\$1,555,867,021	57.08%
Engineering	\$720,615,810	\$720,615,810	\$655,023,256	\$633,165,700	87.86%
OCIP	\$282,613,620	\$282,613,620	\$206,370,653	\$185,230,529	65.54%
Proj Mgmt.	\$972,168,644	\$972,168,644	\$654,405,921	\$623,223,691	64.11%
RE	\$182,076,230	\$182,076,230	\$115,887,959	\$114,247,101	62.75%
Rolling Stock	\$202,000,000	\$202,000,000	\$0	\$0	0.00%
Subtotal w/o Financing & RI	\$10,177,771,010	\$10,177,771,010	\$7,023,273,786	\$5,502,206,956	54.06%
RI Subtotal	\$758,260,953	\$758,260,953	\$273,879,258	\$85,269,090	11.25%
Const (RI)	\$611,214,337	\$611,214,337	\$214,464,157	\$49,431,732	8.09%
Design (RI)	24,595,433	24,595,433	\$24,595,433	\$15,976,887	64.96%
OCIP (RI)	\$16,939,198	\$16,939,198	\$16,939,198	\$16,939,198	100.00%
Project Mgmt. (RI)	\$24,181,291	\$24,181,291	\$17,880,470	\$2,921,273	12.08%
RE (RI)	\$0	\$0	\$0	\$0	0.00%
Rolling Stock(RI)	\$50,000,000	\$50,000,000	\$0	\$0	0.00%
Subtotal w/o Financing	\$10,936,031,963	\$10,936,031,963	\$7,297,153,044	\$5,587,476,046	51.09%
Finance Charges	\$1,036,100,000	\$1,036,100,000	\$617,607,000	\$617,607,000	59.61%
Grand Total	\$11,972,131,963	\$11,972,131,963	\$7,914,760,044	\$6,205,083,046	51.83%

Observations:

The PMT has been providing package estimates for future contract packages but sometimes without the latest cost updates. What is provided often is in formats without the underlying coding structures and without an adequate Basis of Estimate (BOE), which hinders analysis. Without a BOE, thorough analysis is difficult and one cannot identify the assumptions of the Estimator. [Ref: ESA-107-Dec12] At a March 19, 2014 meeting with the PMOC, ESA stated that it would provide reports within two months. Due to the ongoing estimate reconciliation process for CM007, ESA has not yet been able to provide all the package estimates with backup.

Concerns and Recommendations:

The use of a single integrated cost reporting system would strengthen the capacity for analysis and for a joint review of the cost relationships. The PMOC recommends that ESA continue to work to finalize its new cost reporting and control system as soon as possible to verify the new re-plan budgets and management of costs. Therefore, this PMOC concern will be closed [Ref: ESA-112-June 13].

The PMT has reforecast its monthly cash flow curve. Therefore, this PMOC concern will be closed [Ref: ESA-99-Dec12].

5.3 Change Orders

Table 5.3 below shows the executed mods greater than \$100,000 during February 2015.

Table 5.3: ESA's Change Order Log in February 2015 (>\$100,000)

BA # *	Package	Mod#	Description	Mod. Amount (\$)	Feb 2015 package value (\$)
800	CM014A	38	Soil and Muck Removal in Madison Yard	328,338	57,581,832
801	CQ032	50	EAC Stages 3 and 4 Construction Sequencing	2,400,000	248,822,068
801	CQ032	58	Add Duct Bench at Yard Lead Track Tunnel	6,525,000	248,822,068

Notes: When multiple MODs are executed in same month for the same contract, ESA supplied documentation does not indicate order of execution or values before or after that specific MOD.

Status/Observation

The estimated values for MODs at the Pending and Potential levels used for Assigned to MODs is often far off from the settlement amounts. This has led to significant swings in the contingency levels from month to month. The level of variance between estimates by the CM and the Executed MODs are too great and the CM estimating approach needs to be reviewed to increase reliability.

Concerns and Recommendations:

While the cost forecasts before the Re-Plan included all the possible costs for MODs, no matter their status, some of these costs are now excluded, which does not appear to be prudent and not following widely accepted Good Practices. The PMOC recommends that these exclusions be reinstated as a policy. [Ref: ESA-108-May12] ESA should directly address the reliability of CM estimated MODs and the large variance that occurs to ensure more reliable work so that forecasting can improve on the project. .

5.4 Project Funding

a) Federal Funding

As shown in Table 5.2 above, as of February 28, 2015, the PMT has awarded a total of \$7.023B, in contract work. The Federal share of awarded contracts is \$2.333B. The total Federal funding commitment as of February 28, 2015 remained at \$2.699 billion (See Appendix G.1 for project cash flow, and Table 2 for detailed cost distribution.)

b) Local Funding

The obligated local share was \$4,790M. There has been a \$617,607,000 incurred finance cost (for local share) to date.

5.5 Cost Variance Analysis

ESA has not been presenting any cost variance reporting or analyses for review by the PMOC.

[REDACTED]

[REDACTED]

The PMOC has been meeting with ESA and MTACC to finalize a new Contingency Drawdown Curve for part of the amended FFGA. [Ref: ESA-98-Sept 12].

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]




6.0 RISK MANAGEMENT

ESA held its monthly risk meeting in January 2015, but started combining the risk topics with the monthly cost and schedule review starting in March 2015. The PMOC will evaluate this approach to determine if it will be effective going forward.

During Q1-2015, MTACC progressed elements of the package level risk assessment for CM007. A meeting to discuss the schedule that will form the basis of a CM007 Contract-level risk assessment was held on February 25, 2015. At this meeting, MTACC-ESA presented the CM007 schedule that will be used for the risk assessment. A similar meeting was held on March 18, 2015 to discuss the base cost estimate that will be used for the CM007 contract-level risk assessment. The risk workshop is now planned for April 8 and 9, 2015.

Continuing issues with the level of Amtrak force account support, currently at about 30-35% of what is required to maintain the current schedule, would be significant and could delay completion of the Harold Interlocking work another three years until 2022 under the worst-case trending scenario. Electric Traction (ET) resources continue to be insufficient despite Amtrak's earlier written acknowledgement that the MTACC schedule requires an ET staff of 24. Based on these issues and concerns, 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 pushes back the FRA funded High Speed Rail Work beyond 2017. MTACC will require FRA approval for a time extension for the funding. MTACC will also need to present the Harold Re-Sequencing Plan to Amtrak for their review and concurrence.

6.1 Risk Process

Status/Observations:

As discussed above, MTACC is planning to perform a package level risk assessment for the CM007 contract. Conducting the CM007 Risk Assessment after the RFP is advertised is of concern, given the fact that ESA did not conduct a full constructability review for the final configuration of this package as called for in its management plans.

Concerns and Recommendations:

In the PMOC's opinion, funding availability continues to be a significant risk on the ESA project. Funding uncertainty has resulted in: the PMT's delay of CM007 Contract award until 2015 due to budget constraints; and the restructuring of the CS179 Contract by splitting it into a base contract with seven options, based predominately on access restraints imposed by the CM006; CM007; and CM014B packages, which will significantly increase the interface risks. This segmentation of construction packages has resulted in multiple inter-contract interfaces and milestones. The probability of successfully achieving all of them is low, in the PMOC's opinion, and leads to the possibility of a ripple effect of delays and coordination difficulties between

contracts. There is very limited opportunity for the contractors to make up time lost to interface delays. Managing inter-contract handoffs and interfaces will be challenging. Schedule risks will be exacerbated if funding is not in place to award the options in the CS179 Contract Package as planned. Access Restraints in the CS179 Contract are correlated to the options in the Contract; and the CS179 Contract will also have multiple interfaces to the CM007 Contract which has not yet been awarded. Given that this work is on the project critical path, delays in awarding the options will result in the use of Program schedule contingency.

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. Preliminary indications from ESA are that the Harold work could extend as far out as April 2022 given current production trends coupled with delays due to changes in cutover sequencing; delays to current work (e.g. 12kV ductbank relocation); and design changes necessitated by Civil Speed Enforcement requirements mandated by the MTA.

6.2 Risk Register

Status/Observation:

The PMT has begun submitting its risk register on a regular basis.

Concerns and Recommendations:

ESA should continue to automatically submit Risk Register updates to the FTA and PMOC on a regular basis as called for in the RMP.

6.3 Risk Mitigations

Status/Observation:

Current Risk Mitigation Efforts: The PMOC has not seen evidence of any efforts by the PMT at this point to develop mitigation strategies for some of the key risks identified in the Manhattan/Systems and Harold/Queens Risk Workshops held during 1Q2014. However, the PMOC does note that the PMT has implemented risk mitigation strategies for other risks. ESA has exercised advance procurement of the switchgear that was originally in the CM014B package as mitigation for the risk of delay in the fabrication and delivery of the equipment due to the potential delay in awarding CM014B. ESA is also transferring scope out of the current CM014A Contract into the CM014B Contract to mitigate site delay risk during mobilization of the CM014B Contract. 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 schedule delay risks.

Concerns and Recommendations:

Having performed the risk workshops noted above, MTACC is capable of developing mitigation strategies for the risks identified in the workshops reference above, and 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 the identified major risks. The PMOC considers the major risks to be: funding; contractor interface coordination in Manhattan; integrated systems testing duration; continued availability of adequate Amtrak and

LIRR force account resources; and continued availability of required track outages in the Harold Interlocking. The PMOC notes that MTACC has actively engaged Amtrak to develop some specific mitigations and continues to work on strategies for mitigating many of the identified risks.

7.0 PMOC CONCERNS AND RECOMMENDATIONS

Priority in Criticality column

1 – Critical 2 – Near Critical

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
ESA-96- Sep12	1.5 Safety and Security	<p><u>Safety Certification Process:</u> The PMOC remains concerned that the Safety and Security Committee has not met on a regular basis as per the ESA SSMP. This lack of regular meeting will hamper the effectiveness of the Committee in coordinating activities related to the Safety Certification Process.</p> <p><u>Status Update:</u> A calendar showing general meeting dates (by quarter) was presented at the December 18, 2014 Operational Readiness Quarterly Meeting. Only one committee meeting has been scheduled for April 2015.</p> <p><u>Recommendation:</u> The PMOC continues to recommend that the Safety Certification Committee produce a calendar for regularly scheduled meetings and adhere to it.</p>	2
ESA-98 Sep 12	5.6 Cost Contingency Analysis	<p><u>ELPEP Contingency Drawdowns:</u> The schedule and cost contingency drawdown plans in the ELPEP document have been superseded by the new (2014) schedule and cost baseline.</p> <p><u>Status Update:</u> In November 2014 ESA submitted a preliminary Contingency Draw Down schedule and Curve. It was discussed at the November 18, 2014 Cost Review meeting and was informally agreed by both sides that it was not meeting the needs of ESA Project Controls or the PMOC, as constructed. ESA and MTACC will revise the Curve to, among other things, include as a Base the amounts of Management Reserve.</p> <p><u>Recommendation:</u> A meeting needs to be held in April 2015 to advance this through an agreement of both sides.</p>	1
ESA-99- Dec12	5.2 Project Cost Management	The PMOC is concerned that even after the budget and schedule Re-Plan the rate of invoiced amount for construction and total project to date compared to the forecast amount in the re-baseline cash flow has lagged. This continues the trend of ESA	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		<p>historically not meeting with its monthly expenditure plans.</p> <p><u>Status Update:</u> ESA has provided its Re-Plan Cash Flow Chart of November 2014. It is being used to track performance against the Plan.</p> <p><u>Resolution:</u> ESA has begun performance in line with its cash flow projections. The PMOC will close this issue.</p>	
ESA-107- May 13	5.2 Project Cost Management and Control	<p><u>Contract Package Engineer's Estimates:</u> ESA has been providing the PMOC with the backup for the package Estimates more frequently; however, what is provided often is not in formats useful for analysis and generally delivered too late to fully prepare for Risk Workshops. The Basis of Estimate, when provided, generally does not provide enough detail for thorough analysis, nor to identify the assumptions of the Estimator. No opportunity for reconciliation, records of any reconciliation meetings that may have occurred, or explanation as to why those costs are to be used are provided.</p> <p><u>Status Update:</u> The ESA PMT provided the CM007 Contract Estimate in December 2013, but at the March 2014 Harold Risk Assessment provided only summary level estimate values with no Basis of Estimate documents without the planned scope movement of the Track and has stated it will provide an updated independent Estimate by an independent estimator retained by MTACC. ESA has stated it will provide the reconciled Architectural and MEP Estimates prior to February 1, 2015, and the Track Estimate by mid-February 2015. However as of the end of March 2015 neither the Architectural nor MEP Independent Estimate have been given to the PMOC and ESA has stated it is only now awaiting an Independent Track Estimate and it is unclear if these documents will be provided prior to the planned April 8 & 9 CM007 Risk Assessment. The latest CM007 Package Estimate is approximately \$65M above the total Package Budget.</p> <p><u>Recommendation:</u> The PMOC continues to recommend that the MTACC's Project Control Manager submit estimates and proper documentation for review as well as a full analysis of the elements in the ESA estimate prior to each package bid date, allowing</p>	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		adequate time for review and comment. The PMT should also invite the PMOC to attend reconciliation meetings with the Estimating Firm(s) providing the Estimates. ESA should make sure the Estimating firms provide full and inclusive Basis of Estimate (BOE) documents as an integral part of the Estimate deliverable. The PMOC additionally recommends that the PMT have the estimates for the major packages, to be identified in collaboration with the PMOC, for independent cost review, as well as have the CCM perform a “check estimate” and conduct a constructability review prior to estimate. The PMOC recommends that all costs provided by ESA to MTA as the basis for the Contract Bid be incorporated into the PWE and EAC for the package/project and then be replaced upon actual opening of Bids. A thorough analysis of the Estimate is essential for estimate validation needed for the Risk Assessment that must be held prior to going out to Bid. A review of the CM007 and CM014B Estimates demonstrates a need for use of standard processes and a need for more clarity as to how Estimated costs are determined.	
ESA-108- May 13	5.3 Change Order	<p><u>Estimate at Completion:</u> ESA had introduced a budget line designation “Assigned for MODs” in its CBB to adjust active packages budget for the value of Pending and Potential MODs. Funds in those amounts were shifted from the Contingency to be part of the package EAC.</p> <p><u>Status Update:</u> The PMT has generally budgeted 5% for Pre-Bid Contingency except in limited cases where the final scope and the estimates are still unresolved. For Post-Bid contingency 5% has remained their standard with a few cases of 7.5% when Risk Assessments have demonstrated greater cost possibilities. In the Re-Plan ESA has also started assigning values from Contingency to some packages to reflect Risk Assessment projections. The EAC on the package level is determined by those elements. However, it does not include any Possible MODs- including those Contractor submitted- which have not been assigned a value by ESA or Disputed/Claim issues. The Assigned for MODs procedure has led to continual changes of Contingency values into and out of the EAC which leads to a lot of volatility in budget activity. Over the last several months it has become apparent</p>	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		<p>that many of the Potential MOD values are far off from the actual negotiated value so there is high uncertainty in the MOD budgets.</p> <p><u>Recommendation:</u> The PMOC had recommended that the PMT budget for MOD costs still in development and also prepare an analysis and outline its plan for allocated and unallocated contingency consumption for its re-plan. The Hold Points for Un-Allocated Contingency use are not set yet. The PMOC has advised against the continual moving of funds in and out of Contingency as it makes the Budget and Contingency statuses very unclear due to difficulty in tracing where costs are assigned as well as due to values carried for Potential MODs being far off from the settled values.</p>	
ESA-109-June 13	4.1 Schedule	<p><u>Project Schedule:</u> The IPS update does not adequately represent the current state of the project and events. The Harold portion of the IPS will have to be changed based upon the recent re-sequencing and re-planning of the Harold work in Q4-2014.</p> <p><u>Status Update:</u> ESA committed to placing the latest re-plan of the Harold work in the November 2014 IPS update. This commitment has now shifted to April 2015 due to incorporation of the Harold Re-Sequencing.</p> <p><u>Recommendation:</u> Establish a stable project baseline schedule that can be used to measure actual project performance going forward.</p>	1
ESA-112-June 13	5.2 Project Cost Management and Control	<p><u>Project Cost Reporting:</u> The Re-Plan Budget has now been included in the ESA reporting, however they have promised for nearly one and one-half years that they will provide an Integrated Cost System and Report, but has not delivered nor provided system development updates.</p> <p><u>Status Update:</u> Since September 2013 ESA has said that it would provide an Integrated Tracking and Reporting System; in January 2015 ESA stated that their efforts at using Unifier for this purpose had been abandoned, and Expedition would remain the core of their Cost system, without Integration.</p> <p><u>Recommendation:</u> The PMOC recommends that ESA provide a final data schema of their Cost Management and Reporting systems. The PMOC will close this issue.</p>	1

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 March 2015, the PMOC notes that the ESA project continues to not be in compliance 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 has advised that the revised CMP will be issued for review by April 15, 2015. The PMOC notes that the updated TCC Plan was expected earlier in 2014 but as of March 31, 2015 has not yet been submitted pending finalization of the role, responsibilities and level of authority of the ESA Change Control Committee.</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>	1
ESA-117-	1.6 Quality	<p><u>As-Built Process Audit:</u> The ESA Quality Manager conducted an As-Built Process Audit on the contractors for the following eight contracts: CH053, CH054A, CQ032,</p>	2

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
Sep12		<p>CM004, CM014A, CM005, CM013, and CM013A.</p> <p><u>Status Update:</u> The ESA Quality Manager reviewed the As-Built Drawing Process on contracts CH057A and CM006 in January 2015. CH057A was acceptable but CM006 is behind schedule. A follow-up review of CM006 will be conducted in April or May 2015. Contracts CH053, CH054A, CQ032, CM004, CM014A, CM005, CM013, and CM013A were originally audited in 2014. Follow up audits with the CM office and GEC will be performed in April and May 2015 to ascertain/identify any inconsistencies in the submittal process and implementation of any as-built information received by the GEC, including whether the GEC is actually reporting back to the CM.</p> <p><u>Recommendation:</u> The PMOC recommends that the ESA Manager request corrective action from each contractor and conduct the follow-up audits as planned.</p>	
ESA-118-Sep12	1.6 Quality	<p>The CS179 Contractor is not meeting its Quality requirements.</p> <p><u>Status Update:</u> This contract was awarded eleven months ago and almost all submittals are late and/or unacceptable. The Contractor's original Quality Manager left. The replacement left in February 2015 and there is presently no Quality Manager assigned. The ESA Quality Manager has directed the contractor's Corporate Quality Manager to be the "acting" Quality Manger on this contract until they find a suitable replacement. The PMOC agrees with this action and had recommended it last month. MTACC's Chief of Quality and System Certification is scheduling a meeting with the contractor's upper management and the CM team to address the various issues.</p> <p><u>Recommendation:</u> The PMOC is concerned that the contractor's Quality System is not functioning. The CS179 contractor has other ESA contracts and their Corporate Quality Manager works on each of these contracts. The PMOC recommended to MTACC and ESA Quality Management that the Corporate Quality Manager spends considerable time on the CS179 contract and the ESA Quality Manager has accepted this suggestion as discussed in the "Status Update".</p>	1

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 re-iterated at the November 8, 2012 ESA/SAS mini-quarterly meeting. Critical metrics cannot be properly updated until approved baseline schedule is fully incorporated into the IPS. At present, ESA still needs to fully incorporate the latest Harold Re-Sequencing, developed in December 2014, into the schedule. MTACC plans to have the full Harold Re-Sequencing schedule details in the next IPD update.	2	5/31/15

APPENDIX A -- LIST OF ACRONYMS

AFI	Allowance for Indeterminates
ARRA	American Recovery and Reinvestment Act
BA	Budget Adjustment
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
CSSR	Contact Status Summary Report
CIL	Central Instrument Location
CPRB	Capital Program Review Board
CPP	Contract Packaging Plan
DCB	Detailed Cost Breakdown
ELPEP	Enterprise Level Project Execution Plan
EPC	Engineering-Procurement-Construction
ERT	East River Tunnel
ESA	East Side Access
ET	Electric Traction
FA	Force Account
FAMP	Force Account Management Plan
FHACS	“F” Harold Alternate Control System
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
MNR	Metro-North Railroad
MTA	Metropolitan Transportation Authority
MTACC	Metropolitan Transportation Authority Capital Construction
N/A	Not Applicable
NTP	Notice-to-Proceed
NYAR	New York and Atlantic Railroad
NYCDEP	New York City Department of Environmental Protection
NYCDOB	New York City Department of Buildings
NYCT	New York City Transit
NYSPTSB	New York State Public Transportation Safety Board
OCO	Office of Construction Oversight (MTA)
PCO	Preliminary Change Order
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
RFP	Request for Proposal
RMCP	Risk Mitigation Capacity Plan
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
VE	Value Engineering
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.

FOIA Exemption 5 U.S.C. Section 552(b)(4)

Ridership Forecast: MTA projects that, by 2020, the ESA project will handle approximately 162,000 daily riders to and from GCT. This Ridership projection is based on a 2005 study performed by DMJM/Harris (AECOM).

Schedule

9/98	Approval Entry to PE	12/10	Estimated Rev Ops at Entry to PE
02/02	Approval Entry to FD	06/12	Estimated Rev Ops at Entry to FD
12/06	FFGA Signed	12/13	Estimated Rev Ops at FFGA
08/19	Revenue Service Date at date of this report (MTA schedule)		

Cost (\$)

4,300 million	Total Project Cost (\$YOE) at Approval Entry to PE
4,350 million	Total Project Cost (\$YOE) at Approval Entry to FD
7,386 million	Total Project Cost (\$YOE) at FFGA signed
11,936.0 million	Total Project Cost (\$YOE) at Revenue Operations
11,972.1 million	Total Project Cost (\$YOE) at date of this report including \$ 1,036.1 million in Finance Charges
5,502.2 million	Amount of Expenditures as of February 28, 2015 based on the Total Project Budget of \$10,177.8 million
55.4	Percent Complete based on the Re-plan budget of \$10,177.8 million and invoices in the February 2015 report
[REDACTED]	[REDACTED]
54.6*	Construction Percent Complete
55.4	Overall Project Percent Complete

*As of February 28, 2015, based on the June 2014 ESA Re-plan Budget [REDACTED] as provided by ESA in its February 2015 Report.

[REDACTED]

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. Deep,

#	Date	Phase	Category	Subject	Lessons Learned
					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 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.

[REDACTED]

APPENDIX E – SAFETY AND SECURITY CHECKLIST

Project Overview			
Project mode (Rail, Bus, BRT, Multimode)	Rail		
Project phase (Preliminary Engineering, Design, Construction, or Start-up)	Construction		
Project Delivery Method (Design/Build, Design/Build/Operate/Maintain, CMGC, etc.)	Primarily Design Bid/Build		
Project Plans	Version	Review by FTA	Status
Safety and Security Management Plan	12/2010 Rev. 2	2012	Grantee has forwarded the revised SSMP directly to FTA,
Safety and Security Certification Plan	11/2008 Rev. 1		Is within the SSPP of LIRR.
System Safety Program Plan	11/2008 Rev. 1		N/A
System Security Plan or Security and Emergency Preparedness Plan (SEPP)	11/2010		Is within the SSPP of LIRR.
Construction Safety and Security Plan	3/2007 Rev. 1		Project Construction Safety and Security Plan, contractors' site specific safety and security plans,
Safety and Security Authority	Y/N		Notes/Status
Is the grantee subject to 49 CFR Part 659 state safety oversight requirements?	Y		
Has the state designated an oversight agency as per Part 659.9?	Y		The New York State Public Transportation Safety Board (NYSPTSB) is the SSOA. The SOA has stated that they will not interface with the safety certification process for ESA until such a time as it is signed and certified by LIRR.

Project Overview		
Has the oversight agency reviewed and approved the grantee's SSPP as per Part 659.17?	In Development	In Q4 of 2013, The SSOA has asked the FTA for guidance on approving the SSPP.
Has the oversight agency reviewed and approved the grantee's Security Plan or SEPP as per Part 659.21?	In Development	The New York State Public Transportation Safety Board (NYSPTSB) is the SSOA. The SOA has stated that they will not interface with the security review process for ESA until such a time as it is signed and certified by LIRR.
Did the oversight agency participate in the last Quarterly Program Review Meeting?	N	The SOA has no plans on attending these meetings. Grantee to transmit SSMP to SSOA through the Grantee's System Safety Dept., in accordance with new MAP- 21 provisions, the FTA recently audited the NYS SSOA. Preliminary FTA findings indicate a need for more funding in order for the SSOA to accomplish its mandate from FTA. Simultaneously, the SSOA was able to transfer an existing NYS employee into the SSOA. It is anticipated that the above events will lead to a greater ability for the SSOA to more effectively and efficiently accomplish its mission moving forward. The SOA has stated that they will not interface

Project Overview		
		with the safety certification process for ESA until such a time as it is signed and certified by LIRR.
Has the grantee submitted its safety certification plan to the oversight agency?	Y	The Grantee has submitted its safety certification plan to the NYS SSOA.
Has the grantee implemented security directives issues by the Department Homeland Security, Transportation Security Administration?	N	The MTA unified threat vulnerability methodology was applied to the ESA design. A vulnerability log was developed for ESA based on the feedback from the applied methodology. Controls within the design have been implemented to reduce the relative risk of those vulnerabilities identified. Analysis indicated that the controls within design were adequate for the vulnerabilities identified.
SSMP Monitoring	Y/N	Notes/Status
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	Y	
Grantee reviews the SSMP and related project plans to determine if updates are necessary?	Y	Grantee has forwarded the revised SSMP directly to FTA.
Does the grantee implement a process through which the Designated Function (DF) for Safety and DF for Security are integrated into the overall project management team? Please specify.	Y	The safety certification designee for MTACC, as well as the MTACC quality chief, meets regularly with the project

Project Overview		
		management team. The CCM and the Grantee's safety and security personnel are integrated into the management team. Integration is also achieved through implementation of ESA HASP, monthly project wide safety meetings, quarterly audits, OCIP inspections, weekly MTACC and contractor joint safety audits, and interface w/ MTA Police and NYPD Infrastructure Protection Unit of the NYPD's Counter-Terrorism Division. The grantee has added a "security function" assessment to its internal quarterly contractor audit.
Does the grantee maintain a regularly scheduled report on the status of safety and security activities?	Y	Safety and Security are reported on during the monthly safety meeting and are incorporated into Grantee's monthly project reports.
Has the grantee established staffing requirements, procedures and authority for safety and security activities throughout all project phases?	Y	Contained within the Grantee's safety procedure documents.
Does the grantee update the safety and security responsibility matrix/organizational chart as necessary?	Y	To be incorporated into the next revision of the SSMP.
Has the grantee allocated sufficient resources to oversee or carry out safety and security activities?	Y	MTA, GEC, CCM, and contractors provide personnel and resources to carry out safety and security activities. Additionally, an

Project Overview		
		MTACC consultant conducted a safety and security review of all MTACC projects. The consultant's report included programmatic and system security recommendations that are currently being reviewed by MTACC and MTA Police.
Has the grantee developed hazard and vulnerability analysis techniques, including specific types of analysis to be performed during different project phases?	Y	The Safety Certification Committee process is comprehensive and provides for this.
Does the grantee implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities?	Y	Safety certification committee meetings as well as project wide monthly safety meetings take place.
Does the grantee monitor the progress of safety and security activities throughout all project phases? Please describe briefly.	Y	Accomplished through daily audits by contractor and CCM and through the comprehensive SSMP Committee process.
Does the grantee ensure the conduct of preliminary hazard and vulnerability analyses? Please specify analyses conducted.	Y	The Safety Certification Committee process provides for TVRA, safety, and security analysis as well as input from subject matter experts on the SSMP Committee.
Has the grantee ensured the development of safety design criteria?	Y	The Safety Certification Committee has validated the safety design criteria developed by the GEC.
Has the grantee ensured the development of security design criteria?	Y	Accomplished through the SSMP Committee

Project Overview		
		process.
Has the grantee ensured conformance with safety and security requirements in design?	Y	Achieved through the Safety Certification Committee process.
Has the grantee verified conformance with safety and security requirements in equipment and materials procurement?	Y	The grantee has not verified conformance for materials procured to date. Thus far, the grantee has relied on design specifications and manufacturers' quality controls for verification. The PMOC has advised that this course of action is insufficient and does not align with FTA established guidelines. The grantee is attempting to devise a workable solution. Since the 4th quarter of 2014, the grantee has begun to document said verifications by use of their Quality Department reports and CM inspection reports.
Has the grantee verified construction specification conformance?	Y	Through ongoing contract review.
Has the grantee identified safety and security critical tests to be performed prior to passenger operations?	N	Although the Grantee has established preliminary hazard analysis (PHA) and a system test plan, the Grantee needs to identify safety and security critical tests in its Test Program Plan. The grantee is working within the PMP to identify critical submittals relevant to system certification.

Project Overview		
		PMOC has expressed concerns, both at meetings and in reports, about the non-linear pattern of completed construction vs. incomplete critical testing. Grantee believes that all hazards listed on the PHA log are either safety and/or security critical.
Has the grantee verified conformance with safety and security requirements during testing, inspection and start-up phases?	In Development	Project is not at these phases yet. The Grantee is in the process of implementing requirements of the SSMP to conform to construction testing and integration requirements.
Does the grantee evaluate change orders, design waivers, or test variances for potential hazards and /or vulnerabilities?	In Development	Systems area design modifications not originally evaluated per the unified methodology are analyzed and controls are incorporated into the design. Controls have been put in place whereby the GEC verifies that any change orders and/or waivers do not affect the certification analysis process.
Has the grantee ensured the performance of safety and security analyses for proposed workarounds?	In Development	
Has the grantee demonstrated through meetings or other methods, the integration of safety and security in the following: Activation Plan and Procedures Integrated Test Plan and Procedures Operations and Maintenance Plan	Y	An Emergency Preparedness Plan was promulgated by the Grantee in 11/2010. The EAP operational readiness group has been finalized to include

Project Overview		
Emergency Operations Plan		MNR, LIRR, MTAPD, and FDNY. The first meeting took place in March of 2013. A Safety Certification update has been incorporated into this meeting, with the MTACC Assistant Chief of Safety and Security providing regular status report. Task work group meetings have resulted in a white paper being formulated. The paper suggests that management hierarchy of GCT be presented as a single establishment (incorporating MNR and LIRR) in accordance with SIMS and NIMS requirements. The grantee has advised that the white paper reflecting the incident management hierarchy is being presented to the respective executives of each railroad, with the recommendation that LIRR and MNR's GCT incident commanders report to a unified incident commander from MTA Headquarters.
Has the grantee issued final safety and security certification?	N	Project is not at this stage.
Has the grantee issued the final safety and security verification report?	N	Project is not at this stage.

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

APPENDIX G

COST AND SCHEDULE ANALYSIS TABLES

Table G-1: ESA Planned Cash Flow

Table 5: ESA Planned Cash Flow 12/31/14

Quarter/ year	Construction \$(000)	Engineering \$(000)	OCIP \$(000)	Project Mgmt. \$(000)	Real Estate \$(000)	Rolling Stock \$(000)
Invoiced To Date	3,837,410,052	625,725,941	174,752,914	596,390,863	114,068,968	0
Remaining	3,548,451,714	94,889,869	107,860,706	375,777,781	68,007,262	202,000,000
4Q2014	159,139,617	4,018,264	0	16,014,544	0	0
Remaining Planned	3,389,312,096	90,871,605	107,860,706	359,763,237	68,007,262	202,000,000
Remaining Actual	3,361,468,601	89,521,790	107,671,651	357,288,386	67,980,830	202,000,000
1Q2015	158,808,550	3,950,940	0	15,666,401	0	0
2Q2015	148,090,046	3,994,839	4,425,268	15,840,473	3,427,824	0
3Q2015	158,349,548	4,038,738	4,498,615	16,014,544	3,484,638	0
4Q2015	150,074,456	4,038,738	4,498,615	16,014,544	3,484,638	0
1Q2016	190,727,218	3,994,839	4,449,717	15,840,473	3,446,762	0
2Q2016	190,538,714	3,994,839	4,449,717	15,840,473	3,446,762	4,262,235
3Q2016	209,991,019	4,038,738	4,498,615	16,014,544	3,484,638	13,070,855
4Q2016	193,468,104	4,038,738	0	16,014,544	3,484,638	13,070,855
1Q2017	191,280,417	3,950,939	4,400,819	15,666,401	3,408,885	12,786,706
2Q2017	180,831,611	3,994,839	4,449,717	15,840,473	3,446,762	12,786,706
3Q2017	150,687,093	4,038,738	4,498,615	16,014,544	3,484,638	13,070,855
4Q2017	150,139,949	4,038,738	4,498,615	16,014,544	3,484,638	13,070,855
1Q2018	162,268,503	3,950,939	4,400,819	15,666,401	3,408,885	12,786,706
2Q2018	163,902,316	3,994,839	4,449,717	15,840,473	3,446,762	12,928,780
3Q2018	165,491,619	4,038,738	4,498,615	16,014,544	3,484,638	13,696,710
4Q2018	163,375,120	4,038,738	4,498,615	16,014,544	3,484,638	14,014,767
1Q2019	155,623,337	3,950,939	4,400,819	15,666,401	3,408,885	13,710,098
2Q2019	145,591,558	3,994,839	4,449,717	15,840,473	3,446,762	13,862,433
3Q2019	144,263,327	4,038,738	4,498,615	16,014,544	3,484,638	14,014,767
4Q2019	122,877,524	4,038,738	4,498,615	16,014,544	3,484,638	14,014,767
1Q2020	50,376,841	3,994,839	4,449,717	15,745,452	2,272,590	9,458,123
2Q2020	28,082,800	3,994,839	4,449,717	15,561,541	0	933,653
3Q2020	9,913,384	2,721,758	4,594,094	10,602,368	0	318,057
4Q2020	2,750,374	0	4,791,416	0	0	0
1Q2021	1,808,670	0	4,687,255	0	0	0
2Q2021	0	0	26,040	0	0	0
3Q2021	0	0	0	0	0	0
4Q2021	0	0	0	0	0	0
Subtotal	10,299,232,411	275,283,264	318,894,448	1,092,829,404	203,995,354	605,857,925

Table H – ESA Core Accountability Items

Project Status:		Original at FFGA	Current*	ELPEP **
Cost	Cost Estimate	\$7.368B	\$10.178B	\$8.119B
Schedule	RSD	December 31, 2013	December 2022	April 30, 2018
Total Project Percent Complete	Based on Invoiced Amount	55.4		
	Based on Earned Value	NA		
Major Issue	Status	Comments		
Major Procurements Delays	CM014B was advertised in May 2014; ESA did not make its recommendation to award forecast date of November 2014, and did not make its last forecast date of November 2014 for advertising CM007. CM007 was advertised in late December 2014, with proposals due on May 1, 2015, and the CM014B Award and NTP were issued February 2, 2015. Award of CM007 is contingent upon funding availability.	PMOC remains concerned about the potential project schedule impacts of procurement delays on these two packages, CM014B and CM007, since they are on the critical and near critical paths for the project.		
Project Schedule	MTACC presented a new baseline schedule to the MTA CPOC in June 2014, with an RSD in December 2022. This schedule incorporates 22 months of Program level contingency. It should be noted that there have been significant changes in elements comprising the baseline schedule, including full re-sequencing of the Harold work and restructuring of the CM007 package.	CM006 has experienced significant delays and has yet to meet the approved recovery schedule production targets. The PMOC is also concerned about the ability of the CS179 Contractor to manage this key Contract that is complex and on the critical path based on the difficulties he had preparing the baseline schedule.		
Harold Re-planning	The Harold baseline schedule that formed the basis of the Program schedule presented to the CPOC in June 2014, is no longer valid. Based on current issues with slow progress and inadequate force account support, ESA completed a Harold schedule re-sequencing in December 2014, also known as “ESA First,” that advances work elements required for the new LIRR service to GCT and pushes back the FRA funded High Speed Rail Work beyond 2017.	Work on the Harold Interlocking is subject to influences outside of the control of ESA. The FRA and Amtrak need to accept the most recent Harold re-sequencing plan completed in December 2014. Continuing issues with the level of Amtrak force account support could further delay the Harold Interlocking work.		

* Current Budget was approved by MTA CPOC in June 2014. ** 2010 Enterprise Level Project Execution Plan (ELPEP) reflecting medium level of risk mitigation, excluding financing cost of \$1,116 million.