PMOC COMPREHENSIVE MONTHLY REPORT

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

Report Period September 1 to September 30, 2014

PMOC Contract No. DTFT60-09-D-00007

Task Order No. 7, Project No. DC-27-5235, Work Order No. 1

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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.

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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 3rd Quarter 2014

a. Engineering/Design Progress

As of the end of August 2014, MTACC reported that the overall Engineering effort was 98.3% complete, based on Earned Value for Design Deliverables, a reduction of 0.1% from the previous month. Their Cost Report shows 90.5% of the overall EIS & Engineering category as invoiced and 88.0% of the budgeted section titled "Design" as having been invoiced.

b. New Contract Procurements

Bids for CS084 (Traction Power Substation were opened on September 11, 2014. Notice of Award has not been issued as of the end of September 2014.

c. Construction Progress

The PMT reported in its August 2014 Monthly Progress Report that the total construction progress reached 51.3% complete, an increase of 0.2% from the last report, which is confirmed by the Expedition Cost Report.

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 has begun 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 its timing) could have a significant impact on the Program schedule (discussed further in the risk section of this report).

e. New Cost and Schedule Issues

The PMOC continues to recommend that ESA finalize its re-planned project cost estimate as soon as possible, and officially issue it. In addition, since the new Budget was developed prior to the independent CM007 Estimate, as well as issues related to Harold, the PMOC is concerned that significantly higher costs in those areas may quickly diminish the current contingency.

The PMOC is also concerned about the impact of the latest Harold schedule re-plan, and its potential impact on overall project schedule contingency as well as the ESA RSD forecast date of December 2022. ESA has committed to including the latest Harold schedule in November 2014 update for the IPS.

3 PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

a. Grantee Technical Capacity and Capability

There have been no changes in key ESA personnel during Q3 of 2014.

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 an agreement with the property owners of 415 Madison Avenue for the 48th Street Entrance.

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. Details are provided in Section 2.1 of this report.

d. Procurement

Bids for CS084 (Traction Power Substation) were opened on September 11, 2014. Notice of Award was not made as of the end of September 2014. ESA conducted oral interviews with the CM014B proposers and continued evaluation of the technical proposals. ESA is forecasting November 1, 2014 for the CM007 advertisement date.

e. Railroad Force Account (Support and Construction)

During 3Q 2014, LIRR Force Account personnel installed 4 new turnouts and "cut and threw" ML2 and ML4 Tracks (that were constructed on their new alignments by the CH057B contractor) in Harold Interlocking. This was the first Force Account work done in Harold to make room for the new tunnel approach tracks, in this case, Tunnel D Approach. LIRR C&S personnel also continued to install trough and conduit, pull cables, make signal revisions, and pretest at the "H3", "H4", "H5", "H6" and Location 30 CILs in Harold. LIRR ET personnel continued limited work on signal power separation at the HP-3 and HP-4 poles and installed new 3rd rail on the realigned ML2 and ML4 Tracks. Amtrak C&S forces continued to install trough and conduit for "Loop" and "T" Interlockings that will be constructed under work release FQA065. Amtrak Electric Traction personnel continued to make limited catenary wire transfers between the East River Tunnel portals and Sub 44 and protected the CQ032/CH053/CH054A/CH057A/CH057B/CH057C contractors during their respective construction activities. Amtrak Track personnel began reconstruction of Loop #1 Track between "F" and "R" Interlockings.

f. Third-Party Construction

Manhattan: During 3Q2014, the CM005 Contractor (southern Manhattan structures) completed concrete placement of the East- and Westbound Caverns, completed concrete placement for the GCT 1&2 East Wye invert and first lift of wall concrete, and began concrete placement for the intermediate level slab, completed concrete placement for the GCT 1&2 West Wye invert and began the first lift of wall concrete, completed archway concrete placement in the Westbound Tail Track, and continued construction of the 38th St. vent facility.

The CM006 Contractor (northern Manhattan structures) completed its mobilization and placed the concrete invert slabs in the 50th St. and 55th St. air plenums, waterproofed the archways in GCT 4 West Wye and Crossover Caverns, waterproofed the archways in GCT 3 East Wye and Crossover Caverns, and began initial shotcrete in the GCT 5 West Wye Cavern.

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: The CQ032 Contractor (Plaza Substation and Queens Structures) continued to progress construction of Plaza Substation in Queens during 3Q2014 with erection of structural steel and concrete placement of the C06 level of Plaza through the Q-Tip to the Tunnel A and B/C portals,

completion of concrete pours for the C07 level through the Open Cut area, continued structural steel erection for the Yard Services Building in Area 1A, structural steel erection into the Bellmouth for extension of the 63rd St. Tunnel, and completion of concrete repairs in the 63rd St. Tunnel.

Harold Interlocking:

Contract CH053 (Harold Interlocking, Part 1 and G.O.2 Substation): During 3Q2014, the CH053 Contractor continued 12kV cable pulls and conduit installation at various locations in Harold Interlocking, completed micro-tunnel bores 1-4 (including conduit installation), completed excavation and installation of electrical and sewer manholes adjacent to the Tunnel A Approach Structure west of 39th St., and installed 2 catenary poles and 3 signal towers.

Contract CH054A (Harold Structures Part 2A): During 3Q2014, the CH054A Contractor completed micro-tunnel run #13 under all the main line tracks in "F" Interlocking and began to install and grout conduits in the micro-tunnel. Additionally, the contractor continued to pull, splice, and test 12kV cable between Thomson Avenue and Sub 44 and continued the sewer micro-tunnel run adjacent to Skillman Avenue in Queens.

Contract CH057A (Westbound Bypass): During 3Q2014, CH057A Contractor continued to mobilize equipment for the construction of the Westbound Bypass Structure, but was not able to begin any significant field construction due to limited Force Account personnel and track usage availability. The contractor was able to install a new signal bridge at Location 30 in Woodside Interlocking during the quarter, however.

Contract CH057B (Harold Trackwork, Part 1): In August 2014, the CH057B contractor completed construction of LIRR ML2 and ML4 Tracks in Harold Interlocking on their new alignments, after which LIRR Force Account personnel completed the "cuts and throws" into these new alignments and placed the tracks in service. The CH057B contractor completed its demobilization in September 2014 and subsequently left the project.

Contract CH057C (Harold Trackwork, Part 2): The MTACC awarded the CH057C contract to one of its on-call contractors in late July 2014 and work began in mid-August. The contractor demolished a retaining wall between existing LIRR tracks Port Washington #2 (PW2) and Main Line #2 (ML2) just west of the new 48th St. under grade bridge and then placed subgrade material on both sides of the bridge for the future LIRR Force Account construction of #6167 and #6176 diamond crossovers. The contractor demobilized from this phase of its work during September but will return to the project in mid-summer 2015.

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 on June 19, 2014. 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. The FTA has not yet formally accepted projections by the PMOC.

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

Table 2: Project Budget/Cost Table (September 2014)

	FFGA			MTA's Current Baseline Budget CBB		Expenditures	
	(Millions)	(% of Grand Total Cost)	Obligated	(Millions)	(% of Grand Total Cost)	(Millions)	(% of CBB)
Grand Total Cost	$7,386	100.00 %	$4,724	**$11,214.0**	**100.00%**	***$5,713.8***	***50.95%***
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%	***$5,096.2***	***50.07%***
Federal Share	$2,683	36.30%	$1,148	$2,699.0	24.07%	***$1,962.9***	***72.73%***
5309 New Starts share	$2,632	35.60%	$1,098	$2,436.6	21.73%	***$1,700.9***	***69.81%***
Non New Starts grants	$51	0.70%	$50	$67.0	0.60%	$66.6	***99.40%***
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%	***$3,133.3***	***41.89%***

j. Project Risk

The MTACC committed that PMT would hold monthly risk meetings with the PMOC to review current risk related activities at the end of 2Q2012. After not holding this meetings for over a year, ESA has begun holding these meetings again, with meetings being held in August and September 2014 An updated project risk register was provided in August 2014

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 June 19, 2014, ELPEP Quarterly Review Meeting, MTACC stated 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 September 30, 2014, 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; 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; MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The current PMP Rev. 10 is under final review by the PMOC.

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 SMP and CMP sub-plans to the PMP. The PMOC's opinion is that this is a serious deficiency and needs to be resolved immediately. The PMOC's major areas of concern include:

- **Cost/Schedule Contingency**: ESA has not calculated the cost and schedule contingency utilization curves for the new baseline budget and schedule presented to CPOC in June 2014. Given that the new budget and schedule have been put in place, the PMOC expects that MTACC will meet the ELPEP requirements for cost/schedule contingency drawdowns in the next quarterly reporting period.
- **Schedule Management Plan (SMP)**: The ESA project remains non-compliant with requirements for 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 expects that MTACC will start meeting the requirements set forth in its SMP in the above referenced areas.
- **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, the PMOC expects that MTACC will start meeting the requirements set forth in its CMP in the above reference areas.

Revisions to the ELPEP Document: Although the 2014 Re-Plan budget number and Revenue Service Date were presented to CPOC on June 23, 2014, MTACC has not yet fully incorporated the budget and schedule details into its regular monthly reporting. MTACC had committed to providing these details by about August 25, 2014, but as of September 30, 2014, MTACC has not provided the complete schedule data that is the basis for the RSD presented to CPOC. MTACC has taken the position that the IPS will not be finalized and presented until the current Harold re-planning effort has been completed and to not expect a revised IPS until December 2014. The PMOC notes that this current Harold re-plan will supersede the earlier Harold Re-Plan that began in Q4-2013 and was completed in Q1-2014. Revisions to the ELPEP Document cannot be completed until the IPS is finalized. The most recent ELPEP Quarterly Review Meeting was held on June 19, 2014. The next ELPEP Quarterly Review Meeting with MTACC, FTA-RII, SAS and ESA projects and the PMOC has been rescheduled from September 25, 2014 to October 2, 2014.

MTACC Project Procedures Audit Related to ELPEP: MTACC Quality audited ESA for compliance with ESA Project Procedures. There were 11 findings. The PMOC has requested a copy of each finding, the proposed corrective action plan, and documentation that verified all corrective actions had been implemented.

MTACC Construction Procedures Audits: Representatives from MTACC Quality, ESA Quality, and ESA Construction Management audited eight MTACC Construction Procedures – CO.03, CO.04, CO.05, CO.06, CO.07, CO.08, CO.11, and CO.13 – on the following five contracts: CM005, CM013A, CQ032, CH053, and CM057A. Final Reports with findings were issued. MTACC Quality will follow-up on all findings. The PMOC will oversee the process and provide comments as applicable.

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

The ESA Project Controls Director stated the Project Controls Group is in the process of hiring an additional scheduler to support the Project Controls Group.

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 [redacted] 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 (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 is doing a final review on the current PMP Rev. 10.

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 now has to develop a schedule contingency draw down plan as required by the ELPEP agreement.

b) Cost

MTACC presented its new baseline budget of $10.177B [redacted] to the MTA CPOC in June 2014. The CMP states (Section 5.7 – Monthly Update Process) that "each month the project level EAC is forecasted and the baseline budget is updated". Prior to finalizing the new budget, ESA has failed to comply with this requirement. Now that the new baseline budget has been officially presented, ESA needs to comply with this requirement. They also need to provide a revised contingency draw down plan as required by the ELPEP agreement.

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 [redacted] and a new schedule with an RSD of December 2022 to the MTA CPOC in June 2014.

b) Federal Regulations

There are currently no issues to report with regard to the Uniform Property Acquisition and Relocation Act of 1970. The LIRR has requested a Buy America non-availability waiver from the FTA for four specific components of switches for crossover/turnouts to be installed at the Harold Interlocking. The request has been made following extensive market research which didn't find any domestic companies that manufacture the components. The LIRR stated in its waiver request that a failure to obtain the waiver could impact the project cost by $10 million if the 2015 scheduled track outage is delayed as a result of not obtaining the waiver.

1.5 Safety and Security

a) Safety Certification Process

The following activities related to safety certification took place during Q3 2014:

- Several meetings took place with Amtrak representatives to discuss ESA safety certification and Amtrak's role in certifying the force account packages. Discussions led to the development of a scope of work currently being finalized to obtain the assets necessary to identify and track the body of evidence to complete the certification process.
- Technical working group meetings took place for Contracts CM013A, CM014A, CM013, and CH053. Requirements to support the system certification process were discussed at these meetings. The MTACC Director of Safety Certification is in process of finalizing the evidence and communicating the requirements to the CM's for formal submission to the respective Contractors.
- Work continued to develop a certifiable element tracking system for the Contract packages to be incorporated into the ESA SKIRE database system. This system will be similar to the system currently being used on the Second Avenue Subway (SAS) project (i.e. Dometech).
- Emergency action plan meetings at both the committee and subcommittee level occurred during the months of August and September 2014. Group members finalized the chapters within the emergency action plan based on the National Incident Management System.

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 June 19, 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]

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 2.27 vs. 1.70 lost time accidents (LTA) per 200,000 hours. This is slightly higher than last reporting period (2.20). The CM005 Contract has an average of 4.55 LTA, trending higher than the project average and increasing significantly since the last reporting period. The 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.

c) Security

The PMT did not report any significant security issues during its August 2014 reporting period.

1.6 Project Quality

Quality Assurance and Quality Control (QA/QC)

ESA Project Quality Manual (PQM): The ESA Quality Manager has finalized Revision 7 to the Project Quality Manual. The MTACC Executive Management signed it in July 2014 and sent it to the PMOC for final review. The PMOC will complete its review in October 2014. [Ref: ESA-93-Jun12]

As-Built Process Audit: Most contractors had been deficient in submitting their as-builts on time and in the proper format. The ESA Quality Manager conducted an As-Built Process Audit on the contractors for the following eight contracts: CH053, CH054A, CQ032, CM004, CM014A, CM005, CM013, and CM013A. Each contractor was rated in eighteen categories including As-Built Logs, Redline Hard Copies, As-Built Submittals, As-Built Certifications, CAD Drawings, and Survey Data Backup. The CM004 and CM014A contracts received a final rating of Fail. The same contractor is responsible for both of these contracts. The CM013A contractor received a final rating of Pass. The remaining five contracts were rated as Need Improvement. Contractors for contracts CH057A, CS179, and CM006 will be audited by the end of 2014. [Ref: ESA-117-Sep14]

CS179 (Systems Package 1 – Base Contract): The CS179 Contractor is not meeting its Quality requirements. Six months after notice to proceed, the contractor has not submitted its first Construction Work Plan (CWP). Among the other issues are: no approved Quality Plan, their organization chart is missing two key positions, no approved Inspection and Test Plan, submittal of Quality Daily Reports are one month behind, no quality information on the six-week look-ahead schedule, no quality training to their staff and subcontractors, and submittal of their Monthly Certification Report is two months behind. [Ref: ESA-118-Sep14]

Procedure Compliance Audits: MTACC Quality conducted Procedure Compliance Audits on the following five contracts during the third quarter of 2014: CM005, CM013, CM013A, CH057A, and CQ032. The major finding in most of the audits was that the field engineers require training in completing the daily construction reports. The auditors also recommended that additional columns be added to some of the logs that are prepared. Since there were similar findings and recommendations for all contracts, the ESA Heavy Civil Project Executive is preparing a response to the auditors. The PMOC will review the response and closure of the audits.

Quality Training: The ESA Quality Manager will be giving workshops/training on as-builts, nonconformance reports, and close-out procedures to contractors on the new ESA contracts and on some of the existing contracts. Training was scheduled to begin in September 2014 but due to other priorities has slipped to October 2014.

Quarterly Quality Oversights (QQOs)

During the third quarter of 2014, the PMOC attended QQOs for the following contracts: CM005, CM013A, CQ032, CH053/ CH054A, and CH057A. The following are the PMOC's observations that are common to each of these QQOs:

Common Observations	• There are now 19 Elements instead of the previous 15. • The PMOC expressed concern that many open issues from previous QQOs were not addressed in a timely manner and recommended that each open issue plus any issues identified during the current QQO be placed on the Monthly Quality Management Meeting agenda with a projected closure date for each issue. • The Rating System has changed. Instead of a numerical rating for each question, the rating is now a "0", "1/2", or "1".

	• The contractors' final overall rating is given to two decimal places, e.g., 89.34%. The PMOC recommends that the rating be rounded off to the nearest percent, in this case, 89%. MTACC Quality agreed and is in the process of making this change. • There are many redundant questions in the checklist that contains 19 elements. MTACC Quality is preparing a revision to eliminate the redundant questions.

The following are the PMOC's observations for the individual QQOs:

Contract	
CM005	• This was the third QQO for this contract. It was held on July 22, 2014 • There were 19 issues resulting from QQO #2 which was held on April 10, 2014. Many are still open. The auditor did not discuss any of these issues. • There were 9 issues identified during this QQO including: missing and incomplete forms, no hold point on the schedule, Construction Work Plan (CWP) submitted late, and no closure dates on the nonconformance reports (NCRs). • The auditor did not conduct an exit meeting so the contractor had to wait to receive the written audit report. Therefore, the contractor did not have an opportunity to address potential issues during the oversight and possibly present additional information to preclude the issue from being written. That could affect the final overall rating. • The contractor's final overall rating was 85.72%.
CM013A	• This QQO was held on July 25, 2014. • There was one issue from the previous QQO that was held on April 16, 2014, i.e., the contractor does not have a stand-alone Corrective and Preventive Action Request (CAR, PAR) process for systemic problems. This issue has been closed. • There was no discussion of any issues identified during this QQO. Among the observations noted were: the contractor should provide an explanation when "N/A" is noted on the schedule and when existing work is relocated or replaced, there should be a hold point and a check to make sure that there are no conflicts. • The contractor's final overall rating was 99.48%.
CQ032	• This QQO was held on July 17, 2014. • There was no discussion of any issues from the previous QQO that was held on April 10, 2014. • There were 6 issues identified during this QQO including: the subcontractor/supplier matrix is incomplete, CWPs should be

	included in the six-week look-ahead schedule, the Organization Chart must be updated, not all NCRs are listed correctly on the NCR Log, and More detailed information should be included for root cause and preventive action .
CHO53/054A	• This combined QQO was held on July 29, 2014. • During the previous QQO that was held on April 22, 2014, there were 11 issues identified on the CHO53 contract and 10 issues identified on the CH054A contract. There was no discussion of any of these issues during the current QQO and they had not been discussed at the Monthly Quality Management Meetings. • There were 12 issues identified on each of the two contracts, most of which are common to both. The more important issues included: final test results for precast are to be signed and sealed by a New York State Professional Engineer, all sections of the Receiving Inspection Report should be completed, CWP submittals should be consistent and transmitted in a timely manner, checklists should be signed and Quality Daily Reports (QDRs) should be accurately completed, all calibrated equipment should be listed on the calibration log, the disposition of the nonconformance should not be included in the CM signature block, the status of the NCR should be listed as open or closed on the NCR log, and NCRs should be closed in a timely manner. • The contractor's final overall rating was 90.91% for the CH053 contract and 91.43% for the CH054A contract.
CH057A	• This QQO was held on August 1, 2014. • There were 10 issues resulting from QQO #2 which was held on May 2, 2014. Several are still open. The auditor did not discuss any of these issues. • The ESA auditor gathered information that he said he would review in his office. This is not normal procedure. The auditee should know the findings at the conclusion of the audit. • The ESA auditor did not conduct an exit interview but stated that the contractor did well. • The contractor was well prepared for this QQO. • The contractor's final overall rating was 90.60%.

The ESA quality auditors used a generic checklist when performing their Quarterly Quality Oversights. The Contractors' Quality Plans that were approved by ESA often contained additional requirements. The PMOC recommended to MTACC Quality Management that each element in the QQO checklist be tailored to include the additional requirements from the Contractor's Quality Plan since that would be more meaningful than only auditing to the generic MTACC requirements. MTACC Quality agreed with this suggestion and the revised checklist includes blocks for additional requirements from the Quality Plan of the contractor being audited. In addition, many redundant questions were eliminated from the initial checklist.

Training for the ESA Quality staff on the revised checklist will be given in October or November 2014 and the PMOC will be invited to attend.

1.7 Stakeholder Management

a) Railroads

In coordination with the LIRR, the bodies of re-aligned tracks ML2 and ML4 were constructed under Contract CH057B in 3Q2014, after which LIRR force account completed the necessary work to put the tracks in service. LIRR personnel installed three new turnouts in the Harold Interlocking as a predecessor activity to the track reconfigurations to accommodate the new tunnel work during the quarter.

b) Others

No other coordination efforts to discuss for this quarter.

1.8 Local Funding

a) MTA/New York State (Capital Plan)

MTACC announced at the May 2012 CPOC meeting that an additional $720 million had to be identified in the MTA 2015 – 2019 Capital Plan to cover the new project baseline budget. The current re-planned ESA budget, presented to the MTA CPOC in June 2014, is considerably larger than the budget presented to the CPOC in 2012. The funding request for 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 has to delay the planned Full NTP for CM007 and CQ033; split the CS179 Systems Package into a base contract with seven options to be exercised as funding becomes availabl [redacted]

b) Other Sources

The total Federal funding commitment as of November 2013 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 has 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. The RMP is currently being revised and was expected to be issued during June 2014. As of this report, this plan was not issued

b) Monitoring

The MTACC committed that PMT would hold monthly risk meetings with the PMOC to review current risk related activities at the end of 2Q2012. After not holding these meetings for over a year, ESA has begun to hold them again, with meetings being held in August and September 2014.

c) Mitigation

Discussion of current mitigations is discussed in Section 6.3 below.

2.0 PROJECT SCOPE

2.1 Engineering/Design and Construction Phase Services

Status:

As of the end of August 2014, MTACC reported that the overall Engineering effort was 98.3% complete, based on Earned Value for Design Deliverables, a reduction of 0.1% from the previous month. Their Cost Report shows 90.5% of the overall EIS & Engineering category as invoiced and 88.0% of the budgeted section titled "Design" as having been invoiced.

NTP for design of the new Concourse Entrance at 43rd Street was issued to the GEC for the CM014B Contract Package (although this package has already been advertised). Five change orders for design changes are currently being worked on by the GEC.

Under Construction Phase Services (CPS) the GEC reviewed existing condition surveys for the approach tunnels and structures for the CM006 Contract. Surveys have been completed for the four tunnel segments. The review of the surveys indicated that there is a portion of the alignment that is not in tolerance. This will necessitate some tunnel liner redesign, but the GEC states that this will not entail significant re-design.

The GEC submitted the 100% design deliverable for the CM007B Package in September 2014. The documents were subsequently transmitted to Long Island Rail Road for review and comment. Long Island Rail Road provided two rounds of comments in September primarily regarding the revised architectural finishes in the Station Caverns. These comments were addressed. The next deliverable is the signed and sealed CM007B package, which is scheduled for October 17, 2014. The PMT has recommended that the CM012A package including the Bellmouth Structure be dissolved and included in CQ032 and CM007. This item is going to the CCC. The target advertisement for CM007 is mid-November 2014.

Anticipated advertise date for the CH057 package was previously forecast for July 2014 with NTP forecast for September 2014. The forecast advertise date has not been met. Signed and sealed drawings are anticipated to be delivered by the GEC by the end of October 2014 and the PMT is continuing to work on Division 1 issues in the specifications.

The 90% CH058 design submission package was made in early September 2014 and the 100% is planned for November 2014. A Proposal for Change Order (PCO) was issued to the GEC to develop a new, stand-alone package CH061A (Tunnel 'A' and 'D' Construction). Negotiation with GEC has been concluded and a contract modification is in process. Some additional scope transfers from CH053 & CH054A are being considered by ESA Management

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

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 PMOC continues to recommend that the PMT develop a design milestone tracking sheet for the remaining design work on the project similar to what was done for the catenary design work in 2012 in order to more effectively manage the design effort. [Ref: ESA-103-Dec12]

The PMOC maintains its long standing concern that a constructability review has not yet been performed for the CM007 package. This is of particular concern given the number of interfaces with other contracts (CM006; CS179; CM014B; CS086). The ESA Program Executive for Project Controls/Support informed the PMOC that a limited Constructability Review has been undertaken, and a report of the results will be completed in October 2014.

2.2 Procurement

Status:

As of the end of August 2014, the Cost Report showed total procurement activity on the project as 62.9% complete, with $6.401 billion in contracts awarded out of the $10.178 billion revised budget. Procurement dates for CS284 (track and signal installation) scope remain TBD, given that the package was split into two separate packages, with the track work going into the CM007 package and the signal installation work (CS086) TBD. Notice of Award for the VS086 (Signal Equipment) Contract was made in June 2014. The PMOC notes that it took approximately 19 months from the proposal due date to award the Contract, far longer than planned.

CM014B was advertised as an RFP on May 6th 2014. Ten proposals were received and Technical Proposal evaluations were completed by the Technical Working Group on Sept. 29, 2014. Cost proposals were received on September 9, 2014 and will be opened upon conclusion of the Selection Committee evaluations and recommendation, currently planned for early October 2014. Addendum #11 will be issued to the top ranked proposers in preparation of an amended cost proposal which will lead to a final ranking, currently forecast for completion in October 2014. The PMT believes that recommendation for award will be ready to present to the MTA Board in November, 2014, however the PMOC believes that this date is unrealistic, given the number of proposers and previous durations for negotiating a Best and Final Offer on a complex negotiated procurement.

Due to the concurrent procurements of Contracts CM014B and CS084, the PMT decided to revise the target advertisement date for CM007 from October 1, 2014 to November 1, 2014.

Bids for the CS084 Contract were opened on September 11, 2014. The Qualification Hearing was held on September 19, 2014, with Notice of Award anticipated for early October 2014.

The PMT remains undecided as to how to procure the signal installation work currently in a stand-alone package, CS086. The latest thinking is that the package will remain stand-alone, but this decision has not been finalized.

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 3Q2014, 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. ESA should adhere to it without shifting scope for the remainder of the project.

The PMOC remains concerned about the continuing scope shift among existing and future Contract packages. The latest shifts under consideration include moving the scope of CM012A (Bellmouth) into CQ032 and CM007 (since CQ032 contractor is already in the Bellmouth area and shifting some of this work to the CM007 package will allow that contractor access); and moving scope from CH053 into the new CH061A (Harold Structures-Tunnel A) (to mitigate some of the delay in CH053). These continuing moves represent an ad hoc approach to risk mitigation and in the case of the shift into CM007; will require yet another change to a large, unawarded Contract package which may further complicate the procurement.

2.3 Construction

ESA reported in its August 2014 Monthly Progress Report that the total construction progress reached 51.3% complete on a cost invoiced basis (vs. 51.6% planned), in accordance with its Re-plan budget of June 2014. The Expedition Cost Report shows 51.3% of the Construction budget as invoiced. The data dates for financial and progress figures are August 31, 2014 for all reported contracts. Details for active construction contracts are provided below.

Manhattan Contracts

CM004 – 44th St. Demolition and Construct Fan Plant Structure and 245 Park Ave. Entrance

Status: MTACC reports that through August 31, 2014, the EAC has decreased slightly to $55.12 million from the previous $55.14 million. The Forecast Substantial Completion date for the CM004 contract has been extended to October 15, 2014 from the previous September 15, 2014 so that the corrective work at the 245 Park Entrance can be completed. Beneficial Use for the 245 Park Entrance was achieved October 21, 2013. The actual percent complete continued at 99% 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	$40.77M (Award)	$55.15M	+$14.38M -%35.27	$55.12M	+$14.73M 35.19%	-.$0.03M -0.05%
Scheduled SC Date	09/16/09	4/1/14		10/15/14		
Duration (NTP - SC)	24 mos.	55.5 mos.	+31.5 mos.	61 mos.	+37 mos.	+6.5mos.

% Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
100%	99.5%	N/A*	N/A*	N/A*	N/A*	N/A*	N/A*

From August 2014 ESA Monthly Report
*MTACC reports that the curve for percentage of completion was redesigned again.

Construction Progress:

Remaining Contract Work Includes:

44th Vent Building

- Install ducts on 4th Floor with louvers at wall openings.
- Testing of the Reduced Pressure Zone (RPZ) system & clean the backflow preventer. (Temporarily on hold).
- Provide specified labeling on Fire Stand Pipe (FSP) drain pipe.

245 Park Entrance

- Front door alarms.
- Canopy Camera.

Field Items (Defective Work, Repairs, Clean-Up, Safety)

- There are 17 items listed in this category, including replacing the terrazzo tiles at 245 Park Entrance.

Additional Open Items Listed Include:

- As-Builts (8 items listed).
- Code Compliance Checklist/Signoffs (3 items listed)
- Deliverables & Outstanding Checklists/Test Reports (79 items listed).

Observations/Analysis: The PMOC continues to observe that the corrective work at 245 Park will extend well into the 4th Quarter of 2014, due to the added scope of work by the GEC and that this entrance is in continuous use by MNR passengers. Work will have to be done in non-peak hours.

Concerns and Recommendations: The PMOC is concerned that as of the date of this report the corrective work at 245 Park has not begun and the forecast for Substantial Completion will be further extended. This corrective work is not impacting any current or upcoming ESA contracts.

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CM005 – Manhattan South Structures

Status: As of August 31, 2014, the MTACC increased its forecast Estimate at Completion for CM005 to $210,923,395 due to a drawdown for contingency. The forecast date for Substantial Completion remained at February 6, 2016. Actual construction progress for August 2014 was 6.0% versus 4.5% planned. Cumulative construction progress through August 31, 2014, was 45.8% actual versus 46.1% 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)	$207.3M	+$6.7M +3.3%	$210.9M	+$10.3M +5.1%	+3.6M +1.7%
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**
46.1%	45.8%	45.8%	3.8%	31.6%	5.3%	3.4%	3.2%/mo.

From August 2014 ESA Monthly Report

Construction Progress: During September 2014, the CM005 Contractor completed concrete placement of the Westbound and GCT 1&2 West Wye Cavern inverts, continued to build support walls and placed concrete for the first section of the intermediate level in the GCT 1&2 East Wye, began the first lift of sidewall concrete in the GCT 1&2 West Wye Cavern, placed invert and archway concrete in the West Fan Chamber and Tunnel at the 38th St. vent facility, began sidewall concrete placement in the 38th St. plenum, and installed waterproofing and re-bar in Well-Way #s 2, 3, and 4 prior to future shotcrete application.

Observations/Analysis: The PMOC observes that the CM005 Contractor continues to progress its work on or ahead of schedule, although it has not met specific milestone commitments. Based on its analysis of the contractor's progress to date, the PMOC projects that the CM005 contractor will complete its construction 1 to 2 months prior to the forecast Substantial Completion date of February 6, 2016.

Concerns and Recommendation: The PMOC has a concern about CM005 being late on Milestone 4 which impacts an interface milestone for CS179; and recommends that the Contractor continue to progress construction in a consistent and timely manner.

CM006 – Manhattan North Structures

Status: As of August 31, 2014, the MTACC increased the Estimate at Completion for CM006 slightly to $295,345,750. The forecast date for Substantial Completion remained at November 30, 2016. The MTACC issued the Notice to Proceed on March 31, 2014, but it has not generated a progress curve to date. As a result, there is no contract completion data available to report. The PMOC will incorporate this data in its reports when the MTACC generates a progress curve.

	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	$294.2M	$0.0 0.0%	$295.3M	+$1.1M +0.3%	+$1.1M +0.3%
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**
						3.1%/mo.	3.1%/mo.

From August 2014 ESA Monthly Report

*The MTACC has not generated a progress curve for CM006 to date.

Construction Progress: During September 2014, the CM006 contractor continued to mobilize, began waterproofing and placed concrete inverts in the plenums of the 50th and 55th St. vent facilities, installed water stops in the previously waterproofed GCT 3 East and Crossover and GCT 4 West Wye Caverns, and began smoothing shotcrete application in GCT 5 West Wye Cavern.

Observations/Analysis: After a slow start, the CM006 contractor picked up the pace of its construction during August and September 2014. Based on the PMOC's field observations, it appears that the CM006 Contractor will continue to accelerate its construction. Without progress curve data, however, the PMOC cannot determine how the cumulative progress made to date compares with Contract milestones.

Concerns and Recommendation: The PMOC has no specific concerns about CM006 at this time but recommends that the Contractor continue to accelerate the pace of its construction until it reaches a production rate that will allow it to finish its Contract on or ahead of schedule.

CM013 – 50th Street Vent Facility

Status: The work for CM013 is 100% complete and as of June 30, 2014, MTACC stopped reporting on CM013 as an active contract. However, as of the date of this PMOC report, there are issues that are preventing the contract from reaching Substantial Completion. Previously, the PMOC has reported on the ongoing issue with the Code Compliance Unit (CCU) sign-off of the Pneumatically Applied Concrete (PAC) mockup for the vent building. The Project Office has advised that in September 2014 this signoff issue has been resolved, however, there remain issues with the misaligned elevator door frames and elevator sills in the basement levels and the shaft that must be corrected. This continues to prevent MTACC from declaring Substantial and Final Completion.

The CM006 contractor has begun the work for the Phase II Plenum of the 50th St. Vent Facility in the Caverns

CM013A – 55th Street Vent Facility

Status: MTACC reports that through August 31, 2014 the EAC increased slightly to $57.23 million from the previous $57.08 million. Forecast Substantial Completion remains April 5, 2015. MTACC reports that the actual percent complete is 56.35% vs.65.83% planned. This reported planned completion percentage appears inconsistent with previous MTACC reports and the PMOC is investigating to determine the correct the planned percentage complete for August 2014.

	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	$57.23M	+$1.19M +2.12%	$57.23M	+$1.19M 2.12%	0 0
Scheduled SC Date	04/05/15	04/05/13		04/05/15		
Duration (NTP - SC)	31 mos.	31mos.	+0 mos.	31 mos.	+0mos.	+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**
65.83%	56.35%	38.31%	3.19%	19.15%	3.19%	43.65%	5.4%

From August 2014 ESA Monthly Report

Construction Progress:

Welding and erection of the permanent precast stairs continues with precast deliveries ongoing. Demolition of the rock bench in the West Plenum (AWO revision) is complete and the revised rebar/wall configuration is underway. CMU wall erection at the lower cavern levels is continuing with production of approximately 300 square feet per day. Erection of walls and floor slabs is ongoing in the Cavern. The work is approaching the Cavern Arch Ceiling. Concrete lining in the Plenum is ongoing.

Observations:

The CM006 contractor has advanced the waterproofing and rebar cage installation for the portion of the invert slab from the existing construction to the tunnel invert as a part of the initial Phase II of the 55th St. Vent Plant construction.

Concerns and Recommendations:

None at this time.

CM014A – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that through August 31, 2014, the EAC is $55.80 million. Forecast Substantial Completion has been extended to March 31, 2015 from the previous February 15, 2014. Through May 2014, the actual percent complete reported was 76.70% versus 89.61% planned.

The large gap between percent complete versus planned continues to be attributed to the overall Supervisory Control and Data Acquisition (SCADA) system redesign (based on LIRR requirements), but also on the contractor's slow rate of progress. The forecast dates for Con Edison to energize the system are also factoring into the extensions of forecast Substantial Completion.

	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)	$51.96M	+$8.46M +19.45%	$55.80M	+$12.3M +28.27%	+3.84M +7.39%
Scheduled SC Date	04/25/13	12/15/14		03/31/15		
Duration (NTP - SC)	18 mos.	38 mos.	+20 mos. +111.11%	+41.5 mos	+23.5 mos. +130.55%	+2.5 mo. +9.21%

% Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total.**	**Avg./mo**	**Contract SC**	**Forecast SC**
89.61%	76.7%	NA	NA	NA	NA	23.3%	3.11%/mo.

From August 2014 MTA Monthly Report

Construction Progress:

The sequence of the work moves from south to north. Installation of fire stopping continues with daily quality inspections. CMU erection is ongoing. Painting of CMU walls continue. Ductwork and piping installation is ongoing. Sprinkler/Standpipe installation is continuing. 600V cable installation is now scheduled to start September 29, 2014. Branch feeder and conduit installation is ongoing throughout. Installation of 16341 switchgear is ongoing and installation of 16340 switchgear will resume and be finalized on September 29, 2014. Work was scheduled to resume in Shaft #2 on September 29, 2014

Observations/Analysis

The PMOC has previously reported that MNR needs to prioritize removal/relocation of the obstructing utilities to the ramp, stairs and escalator in the south concourse area which is the new ingress/egress at the Dining Concourse. The MTACC PMT has advised the PMOC that MNR has been directed to complete this work and is now scheduling the abatement of the pipes for removal/relocation.

Concerns and Recommendation:

To date there is no evidence that this work has begun. The PMOC will continue to monitor the progress of this work and any impact there may be to the pending CM014-B contract.

Queens Third-Party Contracts

CQ032 Contract – Plaza Substation and Queens Structures

Status: As of August 31, 2014, the MTACC increased the Estimate at Completion for CQ032 to $236,677,769 due to a re-forecast of existing contract modifications. The MTACC forecast for Substantial Completion was extended to March 3, 2016, an extension of two months. Actual construction progress for August 2014 was 0.7% actual versus 1.0% planned. Cumulative progress through August 31, 2014, was 67.2% actual versus 66.1% 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)	$213.4M	+$66.0M +44.8%	$236.7M	+$89.3M +60.6%	+23.3M +10.9%
Scheduled SC Date	08/14/14	10/7/15		3/3/16		
Duration (NTP - SC)	36 mos.	50 mos.	+14 mos.	55 mos.	+14 mos. +38.9%	+19 mos. +38.0%

Percent Complete		**Actual - 12 mos.***		**Actual - 6 mos.***		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
66.1%	67.2%	27.7%	2.3%/mo.	13.7%	2.4%	2.8%/mo.	1.9%/mo.

From August 2014 ESA Monthly Report

Construction Progress: During September 2014, the CQ032 Contractor continued structural steel erection and concrete placement of Plaza Substation level C06 through the Q-Tip to the portals Tunnels A and B/C, continued structural steel erection in Area 1A for the Yard Services Building, began to waterproof the deck of the C07 level in the Open Cut, continued structural steel erection for the extension of the 63rd St. Tunnel into the Bellmouth, and continued miscellaneous repairs in the 63rd St. Tunnel and wayside vent facilities.

Observations/Analysis: Based on its analysis, the PMOC believes that, if the CQ032 contractor can maintain its construction pace of the last 12 months, it will be on schedule to reach Substantial Completion by the MTACC's forecast date of early March 2016.

Concerns and Recommendations: Although the PMOC has no present concerns about the contractor's field construction, nonetheless the contract modification that brings actual construction more in correspondence with planned construction has not been fully executed yet. The PMOC continues to recommend that the parties complete this process as soon as possible. [Ref: ESA-105 Mar13]

Harold Interlocking Contracts

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

Status: As of August 31, 2014, the Estimate at Completion for the CH053 Contract remained at $298,435,003. The MTACC extended its forecast for Substantial Completion to April 13, 2015, an extension of 1 month. Actual construction progress was 1.1% versus 2.0% planned. Cumulative progress was 90.5% actual versus 97.6% planned.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline**	**Change to Original (2 – 1)**	**EAC / Forecast**	**Change to Original (4 – 1)**	**Change to Current (4 – 2)**
Contract Cost	$137.30 M (Award)	$294.9M	+$157.6M +114.8%	$298.8M	+$161.5M +117.6%	+$3.9M +1.3%
Scheduled SC Date	05/05/10	9/9/14		4//13/15		
Duration (NTP - SC)	28 mos.	80 mos.	+52 mos. +185.7%	87 mos.	+59 mos. +210.7%	+7 mos. +8.8%

Percent Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
97.6%	90.5%	19.8%	1.7%	11.3%	1.9%	N/A	1.4%/mo.

From August 2014 ESA Monthly Report

Construction Progress: During September 2014, the CH053 contractor continued to pull 12kV cables and install conduits at various locations within Harold Interlocking, install and grout conduits in micro-tunnel Run #s 1-4 at G02 Substation, and completed excavation and installation of electric and sewer manholes adjacent to the Tunnel A Approach Structure west of 39th St., as well as install 2 catenary poles and 3 signal towers.

Observations/Analysis: CH053 construction continues to progress slowly, in large part due to inadequate and inconsistent railroad Force Account support, most notably Amtrak's limited Electric Traction personnel. Nonetheless, based on CH053 current production rates, the PMOC believes that the contractor can complete its contract by the MTACC forecast Substantial Completion date of April 13, 2015.

Concerns and Recommendations: As the PMOC has observed in the past, the MTACC is responsible to assign the limited Force Account resources to its various contracts based on priorities that it alone establishes. The PMOC therefore recommends that the MTACC place a greater priority on the CH053/CH054A contracts until their respective completions so that a., CH053 and CH054A complete their contracts by April 2015, and b., follow on contracts will not have to compete for the same F/A resources.

CH054A Contract – Harold Structures Part 2A

Status: Harold Structures Part 2A: As of August 31, 2014, the MTACC slightly decreased the Estimate at Completion for CH054A to $61,279,471 due to a re-forecast of existing contract modifications. The MTACC forecast date for Substantial Completion remained relatively the same at February 19, 2015. Actual construction progress was 3.7% versus 3.3% planned. Cumulative progress was 86.6% actual versus 98.6% planned.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline**	**Change to Original (2 – 1)**	**EAC / Forecast**	**Change to Original (4 – 1)**	**Change to Current (4 – 2)**
Contract Cost	$21.80M (Award)	$56.0M	+$34.8M +156.9%	$61.3M	+39.5M +181.2%	+$5.3M +9.5%
Scheduled SC Date	12/21/10	8/9/14		2/19/15		
Duration (NTP - SC)	16 mos.	60 mos.	+44 mos.	+62 mos.	+46 mos. +287.5%	+2 mos. +3.3%

Percent Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress ***	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
98.6%	86.6%	51.3%	4.3%	33.7%	5.6%	N/A – Past Due	2.7%/mo.

From August 2014 ESA Monthly Report

Construction Progress: During September 2014, the CH054A contractor continued to install conduit and grout the Run #13 micro-tunnel, pull, splice, and test 12kV cable between Thomson Avenue and Sub 44, and continued construction of the sewer micro-tunnel adjacent to Skillman Avenue.

Observations/Analysis: CH054A has the same problem with inconsistent and inadequate Force Account support as does CH053, especially Amtrak's limited Electric Traction resources. The PMOC doubts that any meaningful progress will be made to correct this problem during the remainder of either contract. If CH054A can continue to progress its construction at the same pace it has for the last year, however, the PMOC believes that it will meet its Substantial Completion date of February 19, 2015.

Concerns and Recommendations: The PMOC recommends that the ESA PMT make the CH053/CH054A contracts its highest priority when it assigns Force Account support until both contracts are complete, which will be within the next 6 months. This would not only assure that ESA is doing everything possible to progress these contracts, but also make the limited Amtrak resources available to follow-on contracts, with the CH057A contract becoming the first beneficiary of this.

Contract CH057A – Part 3 Westbound Bypass

Status: As of August 31, 2014, the MTACC increased the Estimate at Completion for CH057A slightly to $105,373,688. The MTACC forecast for Substantial Completion was extended by 1 month to May 19, 2016. Actual construction progress for August 2014 was 4.7% versus 4.7% planned. Cumulative progress through August 31, 2014, was 10.5% actual versus 16.33% 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	$104.3M	$104.3M	No Change	$105.4M	+$1.1M +1.0%	+$1.1M +1.0%
Scheduled SC Date	1/31/16	1/31/16		5/19/16		
Duration (NTP - SC)	26 mos.	26 mos.	0	30 mos.	+4 mos. +15.4%	+4 mos. +15.4%

Percent Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress ***	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
16.3%	10.5%	N/A	N/A	10.5%	1.8%	3.8%/mo.	4.3%/mo.

From August 2014 ESA Monthly Report

Construction Progress: The only meaningful construction that the CH057A contractor was able to accomplish during September 2014 was the installation of Signal Bridge 30 at Woodside Interlocking. The other work that the contractor had planned for the month, i.e. beginning installation of secant piles for the Westbound Bypass Structure, was hampered by limited track usage and Force Account support availability.

Observations/Analysis: In the PMOC's opinion, the MTACC let the CH057A contract 6-9 months too soon in light of the historical problems it has had with Force Account support and track usage availability. Had the MTACC applied the "lessons learned" from the CH053/CH054A contracts, it should have realized this. As a result, CH053, CH054A, and CH057A now all compete for the same limited resources on a daily basis.

Concerns and Recommendations: The PMOC's recommendation to the MTACC for CH057A really pertains to CH053 and CH054A, i.e. place the greater priority for Force Account resources and track usage on those two contracts for the next 5-6 months to get them completed as quickly as possible. After that, the CH057A contract will have virtually unimpeded access to the limited support resources and track usage availability.

Contract CH057B – Harold Trackwork, Part 1

Status: The CH057B contractor completed construction of the realigned LIRR ML2 (Main Line #2) and ML4 (Main Line #4) Tracks and LIRR Force Account personnel completed the "cuts and throws" into the newly realigned tracks in August 2014. The contractor demobilized in late August 2014 and has left the project.

Construction Progress: The CH057B contractor completed construction of the realigned ML2 and ML4 Tracks and all the remaining work in its on-call contract in August 2014

Observations/Analysis: CH057B construction was completed within the schedule which the MTACC had established for it.

Concerns and Recommendations: CH057B construction is complete. The PMOC has no concerns about or recommendations for the MTACC at this time.

Contract CH057C – Harold Trackwork, Part 2

Status: The CH057C contractor completed demolition of a retaining wall and placed subgrade material on both sides of the 48th St. bridge during August 2014. The new material was placed in order to construct a diamond crossover on it in November 2014. After the contractor completed this construction, the MTACC suspended the contract until mid-2015, at which time the contractor will return to resume construction.

Construction Progress: As noted above, the contractor completed demolition of a retaining wall between LIRR PW2 (Port Washington #2) and old ML2 (Main Line #2) Tracks and placed subgrade material so that the old ML2 area was at the same elevation as PW2 in order for LIRR Force Account personnel to construct a new diamond crossover as part of the new configuration for Harold Interlocking.

Observations/Analysis: This phase of the CH057C contract was completed within the schedule which the MTACC had established for it.

Concerns and Recommendations: This phase of the CH057C contract is complete. The PMOC has no concerns about it or recommendations to the MTACC at this time.

Systems Contracts

VH051A (Part 1) – Harold and Point Central Instrument Locations (CILs)

Status: The Estimate at Completion is $27.59M through August 2014. Forecast Substantial Completion remained the same. Actual Progress was 90% versus 90% planned (note: progress on this Contract is contingent upon the CIL cutover schedule developed by ESA).

	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)	$30.72M	-0.17M -0.6%	$27.59M	-3.3M -10%	-3.13M -10%
Scheduled SC Date	06/25/12	06/25/12		07/31/15		
Duration (NTP - SC)	37 mos.	37 mos.	+ 0mos. (+0%)	74 mos.	37 mos. 100.5%	37 mos. 100.5%

Percent Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
90%	90%	-	-	-	-	(N/A)	0.9%/mo

From August 2014 ESA Monthly Report

Construction Progress:

All CILs have been completed.

Observations/Analysis:

The GEC is incorporating re-sequencing and civil enforcement changes into the designs.

Concerns and Recommendations:

PMOC is concerned about the impact of the delays to the CIL cutovers and the consequent overall impact to the Harold schedule.

VH051B (Part 2) – Harold Tower Supervisory Control System (HTSCS)

Status: The Estimate at Completion was $9.12M through August 2014, an increase of approximately $300K from last month due to escalation and cost of Contract extension to July 2015. Forecast Substantial Completion remained the same.

	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)	$8.58M	+$1.48M +20.8%	$9.12M	+$1.02M +14%	$.54M 6%
Scheduled SC Date	08/24/10	08/24/10		07/31/15		
Duration (NTP - SC)	18 mos.	18 mos.	+0 mos. 0%	74 mos.	56	56

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%	96%					(N/A)	

From August 2014 ESA Monthly Report

Construction Progress:

No progress reported this month planned (note: progress on this Contract is contingent upon the CIL cutover schedule developed by ESA).

Observations/Analysis:

Substantial completion of this project cannot be achieved until the remaining CILs are cutover.

Concerns and Recommendations

As stated above for VH051A, the PMOC is concerned about the impact of the delays to the CIL cutovers and the consequent overall impact to the Harold schedule.

CS179 (Systems Package 1-Base Contract)

Status: MTACC awarded this contract in March 2014. As of August 2014, the Estimate at Completion for CS179 is $550,388,000. The MTACC forecast for Substantial Completion is November 25, 2019

Construction Progress:

Construction has yet to begin on this Contract. As of the end of September 2014, the Contractor transmitted 453 submittals to ESA. ESA has responded to all but 15.

Observations/Analysis:

Problems continue with producing a viable schedule for this Contract. The initial schedule submittal containing approximately 8,000 activities has now grown to between 20-25,000 activities in the next schedule iteration. During this increase in activities, the contractor uncovered a flaw in its original schedule logic which caused it to seek relief from the schedule submittal requirement. To date, ESA has not formally responded to this request. .

Concerns and Recommendations:

Although ESA reports “no issues” in its monthly progress report, the PMOC believes that the inability to produce an acceptable schedule 6 months into the Contract is problematic. The CS179 Contract has numerous interfaces and access restraints that must be accurately characterized in the project baseline schedule. In addition, the CS179 Contractor is not meeting its Quality requirements as described in the Quality section of this report.

Harold Stage I Amtrak FA (FHA01)

Status: As of August 31, 2014, the Estimate at Completion for FHA01 remained at $18,824,861. The MTACC extended its forecast for Substantial Completion to May 23, 2016, an increase in approximately 20 months. The PMOC is not concerned about this increase because the entire Harold schedule is presently being revised and does not believe that the overall schedule will be negatively impacted by this shift in Stage 1 construction. Actual construction progress for August 2014 was 0.04% versus 0.3% planned. Cumulative progress through August 31, 2014, was 97.2% actual versus 98.1% planned.

FHA01	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	$9.50M	$18.8M	+$9.3M +97.9%	+$18.8M	+$9.3M +97.9%	0 0
Scheduled SC Date	09/30/10	2/4/16		5/23/16		
Duration (NTP - SC)	39 mos.	104 mos.	+65 mos. +166.7%	108 mos.	+69 mos. +176.9%	+4 mos. 3.8%

Percent Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
98.1%	97.2%	4.5%	0.4%	1.7%	0.3%	N/A – Past Due	0.2%

From August 2014 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: FHA01 Stage 1 construction during September 2014 was limited to miscellaneous Electric Traction catenary wire construction between Thomson Avenue and Sub 44.

Observations/Analysis: Direct Stage 1 Force Account construction was been greatly reduced during 3Q2014 while work was concentrated on other areas of the project.

Concerns and Recommendations: The PMOC is not concerned about the lack of Stage 1 progress during this quarter while work was concentrated in other areas and stages of the overall project. The PMOC does recommend, however, that the parties take advantage of track usage and other construction opportunities to complete the remaining Stage 1 work when presented to them.

Harold Early Stage 2 Amtrak FA (FHA02)

Status: As of August 31, 2014, the Estimate at Completion for FHA02 remained at $45,369,618. The MTACC's forecast for Substantial Completion was extended by 1 month to November 13, 2018. Actual construction progress for August 2014 was 1.1% versus 1.1% planned. Cumulative progress through August 31, 2014, was 97.1% actual versus 98.1% planned.

FHA02	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	$44.2M	+$34.5M +355.7%	$45.4M	+$35.7M +368.0%	+$1.2M +2.7%
Scheduled SC Date	9/30/13	9/6/17		11/13/18		
Duration (NTP - SC)	58 mos.	106 mos.	+48 mos. +82.8%	120 mos.	+62 mos. +106.9%	+14 mos. +13.2%

Percent Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
98.1%	97.2%	27.7%	2.3%	18.9%	3.2%	1.7%	0.5%

From August 2014 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 September 2014, Amtrak C&S personnel completed conduit and cable installation at the new E34 and E35 signal bridges and Electric Traction personnel continued to make catenary relocations and section break changes between Thomson Avenue and Sub 44

Concerns/Recommendations: Amtrak C&S and Electric Traction work continues to keep pace with the contract construction available to it. As a result, the PMOC has no concerns or recommendations about it at this time.

Loop Interlocking CIL Amtrak FQA65

Status: As of August 31, 2014, the Estimate at Completion for FQA65 remained at $29,663,652. The MTACC forecast for Substantial Completion remained at September 22, 2019. Actual construction progress for August 2014 was 0.3% versus 2.5% planned. Cumulative progress through August 31, 2014, was 5.0% actual versus 7.5% planned.

FQA65	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline***	**Change to Original (2 – 1)**	**EAC / Forecast**	**Change to Original (4 – 1)**	**Change to Current (4 – 2)**
Contract Cost	$9.1M	$21.0M	+$11.9M	$29.7M	+$20.6M +226.4%	+$8.7M +41.4%
Scheduled SC Date	8/12/18	8/12/18		9/22/18		
Duration (NTP - SC)	55 mos.	55 mos.	(no change)	56 mos.	+1 mo. +0.2%	+1 mo. +0.2%

Percent Complete		**Actual – 12 mos.**		**Actual – 6 mos.**		**Avg. Req'd Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
7.5%	5.0%	N/A	N/A	3.4%	0.6%	1.8%/mo.	2.0%/mo.

From August 2014 ESA Monthly Report

Construction Progress: Amtrak C&S personnel continued to install signal conduit and action blocks between the future "Loop" and "T" Interlockings. Amtrak Track personnel began construction of the new Loop 1 Track on its new alignment.

Observations/Analysis: Based on the MTACC's forecast Substantial Completion date, Amtrak construction needs to average 1.6% complete per month to complete the task on schedule. In the past, Amtrak has shown that it has the capability to do this.

Concerns/Recommendations: The PMOC has no concerns or recommendations about FQA65 at this time.

Harold Stage 1 LIRR FA (FHL01)

Status: As of August 31, 2014, the Estimate at Completion for FHL01 remained at $20,804,621. The MTACC's forecast for Substantial Completion was extended to September 17, 2015, an increase of over 5 months. Actual construction progress for August 2014 was 6.1% versus 0.0% planned. Cumulative progress through August 31, 2014, was 98.2% actual versus 91.6% planned.

FHL01	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%	$20.8M	-$8.0M -27.8%	$0 0%
Scheduled SC Date	09/30/10	4/9/15		9/17/15		
Duration (NTP - SC)	39 mos.	94 mos.	+55 mos. +141.0%	100 mos.	+61 mos. +156.4%	+6 mos. +6.4%

Percent Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
91.6%	98.8%	23.0%	1.9%	20.8%	3.5%	2.6%/mo.	0.2%/mo.

From August 2014 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: The LIRR Track Department installed the west end of the #4178 (949) crossover during September 2014.

Observations/Analysis: During 3Q2014, the LIRR installed 4 turnouts and realigned ML2 and ML4 Tracks in Harold Interlocking. This work was completed on the schedule which the LIRR had established for 2014.

Concerns and Recommendations: To date, the LIRR has accomplished all the work in its 2014 work program on schedule. While the PMOC has no concerns at this time, the PMOC does recommend that the LIRR continue to progress its remaining 2014 program with the same aggressiveness that it employed to approach its previous work this year.

Harold Early Stage 2 LIRR FA (FHL02)

Status: As of August 31, 2014, the Estimate at Completion for FHL02 remained at $76,619,172. The MTACC's forecast for Substantial Completion was extended to April 24, 2018, an increase of 18 months. As with FHA01, the PMOC is not concerned about this increase because it believes that the overall schedule will not be negatively impacted by this shift in LIRR Stage 2 construction. Actual construction progress for August 2014 was 5.3% versus 3.5% planned. Cumulative progress through August 31, 2014, was 54.8% actual versus 58.9% planned.

FHL02	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	$48.2M	+$40.8M +551.4%	$76.6M	+$69.2M +935.1%	+$28.4M +58.9%
Scheduled SC Date	11/30/15	11/25/16		4/24/18		
Duration (NTP - SC)	75 mos.	87 mos.	+12 mos. +16.0%	104 mos.	+29 mos. +38.7%	+17 mos. +19.5%

Percent Complete		**Actual - 12 mos.**		**Actual - 6 mos.**		**Avg. Req'd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo**	**Total**	**Avg./mo**	**Contract SC**	**Forecast SC**
58.9%	54.8%	25.4%	2.1%	21.4%	3.6%	1.3%/mo.	0.8%/mo.

From August 2014 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 Memoranda of Understanding (MOUs) that have been executed for Stage 2. It is presented in the above table to be consistent with the contractor tables contained elsewhere in this report.

Construction Progress: During September 2014, LIRR C&S personnel continued to install conduit and signal cable at the "H5" and "H6" CILs as well as perform signal and circuit pre-tests at the "H3" and "H4" CILs in Harold Interlocking.

Summary Observation: LIRR C&S personnel continue to install signal cables, conduit, and test circuits necessary to place the outlaying "H" CILs in service for the reconfiguration of Harold Interlocking. Although the cutovers of these CILs are well behind their respective original schedules, nonetheless the LIRR continues to progress their construction on a daily basis. Consequently, the LIRR is doing everything possible to keep its present program for these cutovers on schedule.

Summary Concerns and Recommendations: The PMOC is concerned, based on its history of cutover completion, whether or not LIRR has the capability to maintain its present schedule. In order to remain on schedule, the PMOC recommends that the LIRR continue C&S construction at its present pace.

2.4 Operational Readiness

The Q3 Quarterly Operational Readiness meeting, usually held in September, was postponed until October 2014. The following activities related to operational readiness have been undertaken by the ESA Operational Readiness team during the quarter:

- Ongoing technical and administrative support for the Rail Activation Plan Task Group Quarterly Review process.
- Continued working with LIRR IT in testing the application of asset uploads into the Maximo System
- Finalizing formal concurrences for the ESA Glossary and Rev. 5 of the interim maintenance plan.
- Continue work on draft of Volume 3 (monitoring) of the Rail Activation Plan.

Observation:

The Operational Readiness group continues to progress activities comprising system start-up and commissioning.

Concerns and Recommendations:

Given that many of the operational readiness activities are still several years away, the Operational Readiness team need to keep the momentum going. The Operational Readiness Program has been well structured and necessary pre-revenue activities have been clearly defined.

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).

Status:

Since the last reporting period technical specification review meetings have continued with the car builder and its major subcontractors. Initial Design Review (IDR) meetings for vehicle components and systems were also held during 3Q2014.

Observations:

All IDRs were scheduled to be completed by the end of July 2014, however there were some IDRs held during August, 2014. Preliminary Design Reviews (PDR) scheduled to be held in the August through October 2014 timeframe, started in September 2014.

Concerns and Recommendations:

There are no significant concerns at this time.

2.6 Property Acquisition and Real Estate

Status/Observations

415 Madison Ave:

MTA continues to meet with the property owner to discuss the following outstanding issues associated with property acquisition:

- MTACC Design team has reached a verbal and informal agreement that the owner will be responsible for the construction of the utility relocation, as well as the structural work associated with their entrance to the building, including the construction of the shell which will enclose their new entrance. MTA will be responsible for fitting out the entrance and all other associated work.
- Work under 48th Street, not within the property boundary, will begin in early 2015.
- The retail space on the ground floor of the building that will be impacted is occupied by a commercial bank whose lease expires in April 2015.

280 Park:

The sub-surface excavation for the elevator is complete. The final details of design continue to be coordinated with the owners.

335 Madison Ave:

Informal and verbal agreement has been reached with the property owner. MTA will install two elevators that will impact the health club level of the property. MTA is working with owners to coordinate the design and elevator shaft construction.

Extensions of two easements in Queens are being negotiated.

- 48-39 Barnett Ave East (Block 119 Lot 150)

- 39-10 43rd Street (Block 183 Lot 332)

# of Parcels Identified	# Parcels Closed	# Parcels Under Contract	# Parcels In Negotiation	# Parcels In Appraisal	# Parcels In Condemnation	# Parcels Right of Occupancy
127	117	0	5	3	0	2

Concerns and Recommendations:

The PMOC remains concerned about the length of time it is taking to finalize all of the Real Estate aspects of the 48th Street Entrance to GCT. MTA Real Estate apparently has little control on the protracted timeframes.

2.7 Community Relations

Status:

The ESA Community Relations staff continued its outreach efforts during Q3 2014. The effort included the following activities:

- Began planning the ribbon cutting ceremony and press event for the public open space at 50th street (50th Street Commons);
- Notified the property management for buildings surrounding the 50th Street Vent Facility of the planned resumption of activity and concrete delivery at the site by the CM006 Contractor;
- Began notification efforts for 55th street community about upcoming additional excavation activity; and
- Continued to execute a new strategy for providing monthly mailing notifications to the Sunnyside Community in Queens.

Observation:

The ESA Community Relations staff, working with the ESA Construction Managers and MTACC management, continues to reach out to inform the Manhattan and Queens communities affected by the ESA project, of upcoming construction work and planned changes.

Concerns and Recommendations:

There are no significant concerns at this time.

3.0 PROJECT MANAGEMENT PLAN AND SUB PLANS

3.1 Project Management Plan

Status:

The Grantee updated the Project Management Plan (PMP) and issued Rev. 9 on June 28, 2013. The PMOC completed its review of the revised PMP in August 2013 and incorporated the FTA comments in September 2013. The PMOC and FTA comments were then coordinated, consolidated and finalized. The FTA formally issued final PMP review comments and transmitted them to MTACC in December 2013. MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The current PMP Rev. 10 is under final review by the PMOC.

Observation:

MTACC utilized a task force approach to updating the PMP and Candidate Revisions to the PMP were presented to the CCC for review and approval. However, they were presented to the CCC after the PMOC had already reviewed them and the PMOC notes that this in not in the correct order.

Concerns and Recommendations:

Candidate changes to the PMP should not be in the revision given to the FTA and PMOC for review until after they have been approved by the CCC.

3.2 PMP Sub-Plans

Status: The status of the key sub-plans is discussed in the ELPEP section of this report. At the Quarterly ELPEP Compliance Review Meeting held on December 12, 2013, MTACC notified the FTA and the PMOC that they anticipate full revisions to the CMP and SMP, using the Candidate Revision process, within the next few months. Subsequently, MTACC advised at the March 2014 Quarterly ELPEP Compliance Review Meeting that the CMP and SMP will be revised after the current update to the PMP was completed.

Observations:

As of the end of September 2014; MTACC has not indicated when the CMP and SMP revisions will be issued. Updated status information is expected at the October 2, 2014 Quarterly ELPEP Compliance Review Meeting.

Concerns and Recommendations:

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

3.3 Project Procedures

Status:

ESA needs to modify its Change Control Procedures to reflect the creation of the Executive Change Review Committee (ECRC) and its interface with the existing ESA Change Control Committee.

Observations:

The ESA Senior Program Executive has acknowledged that the proposed changes should be reviewed in detail at the CCC level before being presented to the ECRC in order to ensure that stakeholder input is concerned, as well as the pros and cons of a proposed change. This issue was discussed at the June 2014 MTACC/FTA Executive Meeting.

Concerns and Recommendations:

The PMOC strongly recommends that MTACC revise its Change Control Procedures showing that any proposed major changes are presented to the CCC first, and if it is accepted at that level, then be presented to the ECRC for review and approval.

4.0 PROJECT SCHEDULE

4.1 Integrated Project Schedule

Status:

ESA submitted its IPS #61, data date August 1, 2014, and its variance report. This update now indicates multiple possible RSDs as evidenced by the statement in the IPS narrative that the, "IPS reflects an early Revenue Service Date (RSD) of March 25, 2020, a target RSD of February 12, 2021 inclusive of 324 days of IST contingency, and a new late RSD of December 13, 2022 inclusive of 324 days of IST contingency and 669 days of program-level contingency." The PMOC understands that only five months of contingency were incorporated in the IST portion of the schedule, not 324 days.

Additionally, the ESA schedule does not have an updated Harold schedule supporting the current proposed RSD. ESA has stated that Harold portion of the IPS will be updated by November 2014. Given that ESA's trending analysis indicates that the completion of the Harold work could be pushed out to April 2022, it is possible that Harold could become part of the project critical path with a subsequent impact to the forecasted RSD.

Observations:

The PMOC analysis of the IPS indicates that the "early RSD dates of March 2020, February 2021" are unrealistic and not achievable.

Despite several requests at monthly schedule review meetings, ESA has still not provided a basis of schedule for re-planned Program schedule. The basis of schedule is needed to verify the assumptions used to develop the Program schedule.

The PMOC has also asked the PMT to develop a specific Interface Milestone Management Plan. MTACC has submitted the plan that is being used in SAS project; however there is no indication of any progress in developing an ESA specific plan. This is an important issue because all remaining Manhattan contracts, totaling $3 billion, have significant interface milestones. The PMOC asked the PMT to report on the progress of this action two months ago.

ESA's Schedule Management Plan has not been updated yet, nor has the PMT submitted a clear Schedule Contingency Plan. The PMT states there is only "324 days of IST contingency and 669 days of program-level contingency" which does not provide any detail as to how this contingency will be drawn down. The PMT should clearly develop a contingency drawdown and tie it to their cash flow diagram in terms of intention of drawdown.

Although ESA has not updated its IPS schedule related to Harold work, the PMOC understands that Harold contracts have faced significant delays and lack of Amtrak resources has caused significant delays in Harold. ESA's trending analysis indicates that the Harold substantial completion could become April 2022 versus current December 2018. ESA has stated that lack of Amtrak resources, design modifications due to civil speed enforcement, and modification of original sequence of cutovers have been the reasons behind the significant delays in Harold.

Concerns and Recommendations:

Over the last quarter, the PMOC and the ESA PMT had two schedule review meetings discussing schedule control and reporting requirements going forward. The following are the PMOC's recommendations the ESA PMT agreed to act upon:

- Establish the project baseline schedule that matches CPOC presented RSD of December 2022 and provide the basis of schedule detailing the underlying assumptions that support this date. [ESA-109-June 13]
- Develop a clear contingency drawdown based on the ELPEP requirements (still not complete).
- Develop critical milestones based on the baseline IPS, and report quarterly on the achievements of these milestones. Since approval of the new RSD by CPOC in June 2014, ESA has still not submitted a baseline IPS, so the critical milestones could be established by ESA and the PMOC for measuring progress. (Please see 90 day look ahead section for more detailed information)
- ESA develops a cash flow diagram that explains the FTA's hold points and contingency draw down. In addition this cash flow diagram should match MTACC's funding flow. (this action has been open since last quarter)

Given the major changes in the Harold work plan since the June 2014 CPOC meeting, the PMOC believes that the Executive Steering Committee, created in January 2014, should play a major role in negotiating the with Amtrak and LIRR to obtain the necessary resources needed to support the ESA project schedule and prevent further delays.

4.2 90-Day Look-Ahead of Important Activities

ESA had 692 activities to be started, completed, or "in progress" during previous quarter. There were only 191 of scheduled activities started on time. The average delay for delayed start activities (501 activities) was more than 100 calendar days.

	# of Tasks	# of Tasks delayed	Average delay
Total Activities	692	501	103 days
Harold	522	409	110 days
non Harold	170	92	70 days

For next quarter ESA has 924 activities and milestones scheduled. There are 562 of these activities are in Harold/Queens. Table G-2a in the Appendix shows significant milestones in next 90 days. Table G-2b in the Appendix shows the project critical path activities. Table G-2c shows Harold Critical and longest Paths and IPS Near Critical Path (September 1, 2014 data date). Note that ESA has not defined a secondary path in its current IPS update.

Once the ESA project baseline schedule is revised to incorporate the latest Harold re-plan schedule a set of critical metrics can be developed to monitor project schedule performance ESA-A46-Dec12.

4.3 Critical Path Activities

The current reported project critical path begins with work being performed under CM005 Manhattan South Structures (specifically the GCT 1 & 2 structure), followed by CM007 constructing the GCT Caverns, north Back of House space, then cavern structures and fit out, and ends with CS179 Integrated System Testing. Meantime CM007 continues to advance through a re-design process and now includes track work from CS084. Bid proposals are expected in early 2015, with full on-site mobilization expected in early 2016. CS179 continues engineering work for their base contract.

The PMT has not produced a construability review for contract CM007 despite its procedure requirement and additional scope added to the package. Additionally, the PMT should develop a risk assessment of the package before the start of advertisement, unlike contract CM014B of which the risk assessment was conducted while going through technical proposal review by the PMT. Additionally, the CS179 Preliminary Schedule is expected to be established early in the Q4 2014.

As it was discussed in Integrated Project Schedule section, ESA has indicated that Harold activities might move to the project critical path.

4.4 Project Schedule Contingency Analysis

ESA's "IPS#61 reflects an early Revenue Service Date (RSD) of March 25, 2020, a target RSD of February 12, 2021 inclusive of 324 days of IST contingency and a new late RSD of December 13, 2022 inclusive of 324 days of IST contingency and 669 days of program-level contingency," Given the current slippage in the Harold schedule, much of the program level contingency may have already been consumed. This is a serious matter that MTACC should address, since ESA has not yet created a contingency drawdown plan, and after the Harold Queens risk workshop conducted for ESA by an independent facilitator in March 2014, the following results was presented to the PMT:

The summary results of the requested Harold risk sensitivity analysis are shown below. For this model run, all inputs were held the same as documented in the draft final report dated May 16, 2014 except for the specific Harold risks described below. The most significant impacts of the sensitivity analysis include the following:

- Harold Configuration complete 80th percentile extended from August 2019 to May 2020 (+9 months)
- RSD 80th percentile extended from October 2021 to May 2022 (+7 months)
- Program escalated cost 80th percentile increased from $9.830M to $9.919M (+$89M) due to additional extended overheads and escalation
- Probability of Harold Configuration Complete being on the critical path to ROD completion increased from 29% to 71%"

	Sensitivity Analysis: Harold Risk Modifications		
Statistics	**ESA Total Cost (Escalated $M)**	**ROD**	**Harold Configuration Complete**
Deterministic Base (no risk)	8,802	May 2021	May 2018
Mean	9,762	Nov 2021	Dec 2019
Std Dev	190	248	212
Percentiles			
1%	9,347	Sep 2020	Oct 2018
5%	9,465	Dec 2020	Jan 2019
10%	9,525	Feb 2021	Mar 2019
20%	9,600	Apr 2021	May 2019
25%	9,630	May 2021	Jun 2019
30%	9,657	Jun 2021	Jul 2019
40%	9,706	Sep 2021	Oct 2019
50%	9,752	Oct 2021	Jan 2020
60%	9,803	Dec 2021	Feb 2020
70%	9,855	Feb 2022	Apr 2020
75%	9,886	Mar 2022	Apr 2020
80%	**9,919**	**May 2022**	**May 2020**
90%	10,011	Sep 2022	Aug 2020
95%	10,081	Jan 2023	Oct 2020
99%	10,235	Oct 2023	May 2021

Note that risk analysis considered the worst case scenario as May 2021. If the current trending analysis forecasting completion of the Harold work in April 2022, this would mean that the RSD would be pushed out past the October 2023 shown in the worst case risk scenario generated in the risk model (developed for ESA by its risk facilitator) shown above.

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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 $10,177M [redacted] to the MTA CPOC. The detailed monthly cost reports received by the PMOC reflect the budget as of the end of August 2014. Table 5.1 on the following page shows the changes in the SCC budget breakdown between the 2012 Baseline budget and the 2014 re-planned budget.

Observations:

The re-planning effort has provided the opportunity for the PMT to re-examine each of the Contract packages and every active Contract Package value. Some budgets changed due to major re-estimates, other due to adjustments in the Contingencies. Some Contracts packages were redefined by splitting off sections of work or re-allocating portions of the budget to Regional Investments (RI).

Concerns and Recommendations:

ESA has stated that its new SCC allocations reflect the proper SCCs for each work element and is not simply a function of the major definition of the overall package as has been recommended by the PMOC and required by the Cost Management Plan. It has also informed the PMOC that, per PMOC recommendation, if there is future scope transfers; the scope will carry the proper SCC and not the overall 'mix of SCCs' in the former package. The PMOC will keep this Concern/Recommendation open until ESA provides evidence that these corrections have been made [Ref: ESA-106-Dec12].

5.2 Project Cost Management and Control

Status:

The PMT has reported that, as of August 31, 2014, the actual total project progress was 52.0% vs. 52.3% planned progress resulting from the June 2014 re-baseline, however the actual construction progress was 51.3% vs.56.6% planned based on invoiced amount and the new budget.

As stated above, MTACC ESA presented a new budget to the MTA CPOC in June 2014 and provided a cash flow chart in September 2014. Although as of July 1, 2014, a "balance point" of being on plan was set; over the last quarter their "expended to date" has fallen below the planned expenditure (only 60% of planned cash flow was achieved).

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

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (Aug 2014)	Actual Awards (Aug 2014)	Paid to Date (Aug 2014)	Actual % Budget Invoiced
Construction	$7,379,296,706	$7,386,115,417	$4,800,618,844	$3,611,066,192	48.89%
Soft Costs Subtotal	**$2,798,474,304**	**$2,791,655,593**	**$1,600,252,481**	**$1,485,138,406**	**53.20%**
Engineering	$720,615,810	$720,615,810	$650,827,900	$628,962,459	87.28%
OCIP	$282,613,620	$282,613,620	$187,960,159	$155,699,493	55.09%
Project Mgmt.	$972,168,644	$972,168,644	$645,575,913	$587,825,599	60.47%
Real Estate	$182,076,230	$182,076,230	$115,888,509	$112,650,855	61.87%
Rolling Stock	$202,000,000	$202,000,000	$0	$0	0.00%
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Project Subtotal w/o Financing & RI	**$10,177,771,010**	**$10,177,771,010**	**$6,400,871,325**	**$5,096,204,598**	**50.07%**
Regional Investment Subtotal	**$758,260,953**	**$758,260,953**	**$214,916,535**	**$68,105,675**	**8.98%**
Construction (RI)	$611,214,337	$611,214,337	$155,501,433	$32,268,317	5.28%
Design (RI)	24,595,433	24,595,433	$24,595,434	$15,976,887	64.96%
OCIP (RI)	$16,939,198	$16,939,198	$16,939,198	$16,939,198	100.00%
Proj.Mgmt. (RI)	$24,181,291	$24,181,291	$17,880,470	$2,921,273	12.08%
Real Estate (RI)	$0	$0	$0	$0	0.00%
Rolling Stock(RI)	$50,000,000	$50,000,000	$0	$0	0.00%
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Project Subtotal W/O Financing	**$10,936,031,963**	**$10,936,031,963**	**$6,615,787,860**	**$5,164,310,273**	**47.22%**
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**	**$7,233,394,860**	**$5,781,917,273**	**48.29%**

*This total amount does not include Regional Investment amount of $590,732,003.

Reasons for Changes to SCC Codes: There were no scope transfers executed in the month of August 2014. SCC codes 10, 20, 40 and 50 changed because shifts in active contract issues (Pending, Potential and Possible) caused changes to the amount of contingency in each package. Since package contingency is prorated over the SCC codes in that package, as contingency changes, the amount attributable to each SCC code within a package changes also.

Table 5.2 shows the current budget status of contracts awarded to date and invoiced amounts to date.

Table 5.2: Project Budget and Invoices as of August 31, 2014

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (Aug 2014)	Actual Awards (Aug 2014)	Paid to Date (Aug 2014)
Construction	$7,379,296,706	$7,386,115,417	$4,800,618,844	$3,611,066,192
Soft Costs Subtotal	**$2,798,474,304**	**$2,791,655,593**	**$1,600,252,481**	**$1,485,138,406**
Engineering	$720,615,810	$720,615,810	$650,827,900	$628,962,459
OCIP	$282,613,620	$282,613,620	$187,960,159	$155,699,493
Project Mgmt.	$972,168,644	$972,168,644	$645,575,913	$587,825,599
Real Estate	$182,076,230	$182,076,230	$115,888,509	$112,650,855
Rolling Stock	$202,000,000	$202,000,000	$0	$0
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Project subtotal w/o Financing & RI	**$10,177,771,010**	**$10,177,771,010**	**$6,400,871,325**	**$5,096,204,598**
Regional Investment Subtotal	**$758,260,953**	**$758,260,953**	**$214,916,535**	**$68,105,675**
Construction (RI)	$611,214,337	$611,214,337	$155,501,433	$32,268,317
Design (RI)	24,595,433	24,595,433	$24,595,434	$15,976,887
OCIP (RI)	$16,939,198	$16,939,198	$16,939,198	$16,939,198
Project Mgmt. (RI)	$24,181,291	$24,181,291	$17,880,470	$2,921,273
Real Estate (RI)	$0	$0	$0	$0
Rolling Stock(RI)	$50,000,000	$50,000,000	$0	$0
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Project Subtotal W/O Financing	**$10,936,031,963**	**$10,936,031,963**	**$6,615,787,860**	**$5,164,310,273**
Finance Charges	$1,036,100,000	$1,036,100,000	$617,607,000	$617,607,000
Grand Total	**$11,972,131,963**	**$11,972,131,963**	**$7,233,394,860**	**$5,781,917,273**
[redacted]				

Table 5.3 below shows the PMOC's cost forecast, based on a trending analysis using data provided by ESA in Q4 2013 (note: this forecast has not changed since then).

Table 5.3: PMOC ESA Cost Forecast

Category	Cost
Construction*	$ 7,859,922,230
PM/CM; OCIP; RE; and Engineering*	$ 2,243,759,078
Rolling Stock	$ 202,000,000
[redacted]	[redacted]
ESA Budget Forecast	$ 10,455,681,308
[redacted]	[redacted]
ESA Total Forecast**	$ 10,918,681,308

*PMOC Forecast is based on Historical trends; known costs; and schedule slippage. ESA provided data is utilized

**Figures represents Low Degree of Risk Mitigation, The PMOC had developed summary levels of Forecast cost values at the Medium Degree of Mitigation($10.772B) and High Degree of Mitigation ($10.587B Levels also.

Observations:

The PMT has been providing package estimates for future contract packages generally only after several prompts from the PMOC, and often not including 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]

Concerns and Recommendations:

The PMT provides monthly cost reporting data in a series of update documents provided by separate PMT staff instead of in a unified report. This lack of singular reporting responsibility and the lack of a single integrated cost document weaken the capacity for analysis and for a joint review of the cost relationships. In June 2013, ESA stated it was working on an Integrated Cost System but no progress had been demonstrated through December 2013 when the new Project Controls Manager discussed several changes he intended to implement in the reporting and measures to assure greater validity of the data. But this data is not backed up with any methodology for integrated cost management and reporting. It is recognized that the major ESA effort had been on developing a Re-Plan budget but has only quite recently shown the PMOC what they have put in place toward the integrated reporting through Unifier.

At a March 19, 2014 meeting with the PMOC, ESA stated that it would provide reports within two months. Unfortunately this date has not been met and recently ESA notified the PMOC that Unifier is no longer their reporting system and they have gone back to Expedition for now. The lack of data migration or data warehousing structures and the lack of a system development plan and schema of data sources appear to show that they had not planned this effort well and cannot fully describe its targets and methods of reaching them, let alone a time table. This has been a

main topic of discussion at the Monthly Cost Update meeting with ESA for the last several months.

The PMT should reforecast its monthly cash flow curve, linking it to the current schedule forecast [Ref: ESA-99-Dec12]. 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. [Ref: ESA-112-June 13].

5.3 Change Orders

Table 5.4 below shows the executed mods greater than $100,000 during August 2014.

Table 5.4: ESA's Change Order Log in August 2014 (>$100,000)

BA # *	Package	Mod#	Description	Mod. Amount ($)	Aug 2014 package value ($)
720	CH054A	42	Reissued Contract Schedule	8,800,000	67,359,872
723	CM005	6	Access Tunnel 1 and 2 Lining	5,059,000	223,438,905
725	CH013A	11	Notice of Differing Site Conditions- ECS Conduit Interference	165,000	58,890,314
729	CQ032	47	Deletion of Contract Payment 17	(422,388)	289,939,519

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: In analyzing earlier data prior to the re-plan the PMOC found that executed MODs were running over 12% of the re-baseline budget for packages and when the Pending, Possible, and Potential were added, the percentage was close to 20%. A recent analysis on a more defined classification system shows nearly 40% of MODs are due to re-packaging. ESA had not budgeted enough to cover these changes previously and it is not yet clear that the substantial budget increases in the re-plan will be adequate, although ESA did much greater analysis and planning for the new budget.

Concerns and Recommendations:

The PMOC had recommended that the PMT perform a more thorough analysis of the change order trends and budget for them, and also prepare an analysis and outline its plan for allocated and unallocated contingency consumption for its re-plan, which they appear to have done. However, while the previous format 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. The PMOC recommends that these exclusions be reinstated as a policy. [Ref: ESA-108-May12]

5.4 Project Funding

a) Federal Funding

As shown in Table 5.2 above, as of August 31, 2014, the PMT has awarded a total of $6.401B, in contract work. The Federal share of awarded contracts is $2.030B. The total Federal funding commitment as of August 31, 2014 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 $4,371M. There has been a $617,607,000 incurred finance cost (for local share) to date.

5.5 Cost Variance Analysis

ESA has been working on its variance analysis primarily for use in its proposed Re-Plan Budget, which it presented at the June 2014 CPOC meeting. It has provided partial detailed back up to the PMOC as of this report.

Concerns and Recommendations:

Although ESA presented this new Re-Plan Budget to the MTA CPOC, the PMOC has remained concerned that changes would still occur, and this month ESA stated that it has "rectified the CSU99 contingency calculation" and this changes the Baseline Contingency value [redacted]. The PMOC continues to recommend that ESA finalize its re-planned project cost estimate as soon as possible, and officially provide this to the FTA/PMOC. In addition, since the new Budget was developed prior to the independent CM007 Estimate as well as issues related to Harold, the PMOC is concerned that significantly higher costs in those areas may quickly diminish the Contingency.

6.0 RISK MANAGEMENT

6.1 Risk Process

Status/Observations:

ESA has resumed its monthly risk meetings and has submitted an updated risk register. The PMOC will close action ESA-116 in the next quarter provided that the risk meetings and submittal of updated risk registers continue on a regular basis.

MTACC had planned to conduct a package level risk assessment for the CM014B (GCT Finishes) in June 2014. This risk assessment was held on September 4, 2014 (approximately five months after the package was advertised). The PMOC notes that there was no MNR representation at the Workshop. This was disappointing, since MNR is a key stakeholder at the GCT. The PMOC also notes that there was no MTA Procurement representation at the Workshop to confirm whether or not the procurement schedule was realistic.

The PMOC believes that holding the CM014B Risk Workshop after the technical proposals have been received, and few days prior to the due date of the cost proposals, is too late in the process to implement any meaningful changes to the procurement resulting from workshop discussions and risk profiling. The PMOC has commented in the past about the timing of package level risk assessments, and the necessity to perform them well before the packages are advertised for bid in order to maximize the benefits of performing a risk assessment.

The PMOC notes that although a limited constructability review was conducted for the CM014B package, the questions raised in the review had not been addressed at the time of the Risk workshop. As such, findings that could increase the risk to the Contract were not addressed.

A follow-up meeting to present the results of the Workshop was held on September 29, 2014.

MTACC has stated that they plan to perform a package level risk assessment for CM007 once the design is finalized. Conducting the CM007 Risk Assessment before the RFP is advertised is even more critical in the PMOC's opinion, given the fact that ESA did not conduct an adequate constructability review for this package as called for in its management plans.

ESA has shifted the track work out of the CS284 Contract Package into the CM007 package and has presented this shift as a risk mitigation measure for improved access and coordination. The PMOC has expressed its concern that a proper cost/benefit analysis was not performed. There is no indication that MTACC/ESA has looked at the potential downside of this shift (e.g. increased bid risk due to the size of the Contract; coordination with the signal installation contractor) and weighed this against the perceived benefits.

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 July 2015 with a limited NTP 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 CM005; 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 minimal 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 and CM014B Contracts, which have 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 relocation); and design changes necessitated by Civil Speed Enforcement requirements mandated by the MTA. ESA has committed to putting the re-planned Harold schedule into the project baseline in November, 2014 and providing this new baseline to the PMOC in the December reporting time frame.

The PMOC continues to recommend that MTACC and ESA utilize the results obtained from the Manhattan/Systems and Harold Risk workshops held earlier this year to develop mitigation plans and strategies for the top schedule and cost risks identified.

6.2 Risk Register

Status/Observation:

The PMT provided a project risk register in August 2014 and committed to submitting updated risk registers on a regular basis going forward.

Concerns and Recommendations:

Updating and distribution of the ESA Program Risk Register has been infrequent to date, and ESA should 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 the key risks identified in the Manhattan/Systems and Harold/Queens Risk Workshops held during Q1 2014.

Concerns and Recommendations:

Having performed the risk workshops noted above, MTACC should develop mitigation strategies for the risks identified in the workshops reference above, and track and report on them on a regular basis as required by the RMP.

7.0 PMOC CONCERNS AND RECOMMENDATIONS

Priority in Criticality column

1 – Critical 2 – Near Critical

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
ESA-93-June12	1.6 Quality	Project Quality Manual (PQM): The ESA Quality Manager had committed to update Revision 6 of the ESA Project Quality Manual (PQM) that was issued in February 2009 by the end of February 2013. Status Update: The PMOC received a Draft copy of Revision 7 to the PQM in March 2014 and provided comments to the ESA Quality Manager that same month. The ESA Quality Manager finalized Revision 7. It was signed by MTACC Executive Management and sent to the PMOC for final review. If there are no further comments from the PMOC, it will be sent to the FTA for approval in October 2014. Recommendation: This item will be closed following acceptance by the PMOC	2
ESA-95-Sep12	2.3 Construction: Queens	Contract CQ032: The PMOC is concerned about the potential cost and schedule impacts to the CQ032 contract resulting from the access delays created by late turnover of work areas by the CM009/019, CQ031 and CQ039 contractors. Status Update: The MTACC and the contractor have agreed upon the terms of the re-baselined schedule which incorporates the previous cost and schedule impacts, although the agreement has not been fully executed yet. Recommendation: The PMOC recommends that the parties execute the agreement as quickly as possible.	1
ESA-96-Sep12	1.5 Safety and Security	Safety Certification Process: 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. Status Update: A calendar showing general meeting dates (by quarter) was presented at	2

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		the June 19, 2014 Operational Readiness Quarterly Meeting. Recommendation: The PMOC continues to recommend that the Safety Certification Committee produce a calendar for regularly scheduled meetings and adhere to it.	
ESA-98 Sep 12	5.6 Cost Contingency Analysis	ELPEP Contingency Drawdowns: The schedule and cost contingency drawdown plans in the ELPEP document have been superseded by the new (2014) schedule and cost baseline. Status Update: MTACC provided to the FTA and the PMOC their proposed revisions to the ELPEP on March 19, 2013. This document was an abridged version of the original ELPEP agreement. Now that ESA has submitted a CPOC approved revised schedule and budget baseline for the project Contingency Drawdown and Cash Flow schedules must be established from them. [redacted] Recommendation: MTACC needs to update the ELPEP document and create new contingency drawdown plans for schedule and cost. ESA will first have to provide a finalized re-plan budget and schedule.	1
ESA-99-Dec12	5.2 Project Cost Management	The PMOC is concerned about the continuing lag of invoiced amount for construction and total project to date compared to the forecast amount in the re-baseline cash flow. This continues the trend of ESA historically not keeping up with its monthly expenditure plans. Status Update: ESA provided a cash flow chart in September 2014. Although as of July 1, 2014, a "balance point" of being on plan was set; over the last quarter their "expended to date" has fallen below the planned expenditure (only 60% of planned cash flow was achieved) Recommendation: ESA should reforecast its monthly cash flow curve, linking to the adjusted schedule forecast, and extend the date for the end of the payout curve (currently at August 2020).	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
ESA-103-Dec12	2.1 Engineering Design	The GEC and PMT continue to consistently miss most of their target dates for remaining design activities on the project. In several instances (CM014B; CH057), this has resulted in delaying the procurement packages. Status Update: As of the end of September 2014, the PMT has not developed a design milestone tracking sheet. Recommendation: The PMOC recommends that the PMT develop a design milestone tracking sheet for the remaining design work on the project, similar to what was done for the catenary design work, in order to more effectively manage the design effort.	2
ESA-105-Mar13	2.3 Construction: Queens	Contract CQ032: The PMOC is concerned that actual progress continues to lag planned progress at a rate that has increased from 2.7% to 15.9% in the last 6 months. Status Update: The PMOC understands that the MTACC and the Contractor have agreed upon the parameters of a contract modification that will eliminate the lag between actual and planned construction, although the modification was not fully executed as of September 30, 2014. In fact, in its Monthly Reports, the MTACC has been reporting project status based on this contract modification for several months. Recommendation: The PMOC recommends that the parties fully execute the contract modification as quickly as possible.	1
ESA-107-May 13	5.2 Project Cost Management and Control	Contract Package Engineer's Estimates: 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 to the PMT 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. Status Update: 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	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		movement of the Track and has stated it will provide an updated independent Estimate by an independent estimator retained by MTACC. As of the end of June 2014, this information was not provided. After several requests ESA provided the Estimate for the CQ033 package, however it was a 60% estimate, nearly 1 year old, despite the fact the package is now at 90% design and the EAC is now nearly $100M higher. Only after the PMOC pointed out these issues did ESA provide the 90% Summary Estimate. Recommendation: 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 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.	
ESA-108-May 13	5.3 Change Order	Estimate at Completion: 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 for the Contingency to be part of the package EAC. 	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		[redacted] Recommendation: The PMOC had recommended that the PMT perform a more thorough analysis of the change order trends and budget for them, and also prepare an analysis and outline its plan for allocated and unallocated contingency consumption for its re-plan, which they appear to have done. However while previously it included all the possible costs for MODs, no matter their status, it has now excluded some of those costs, which does not appear to be prudent and the PMOC recommends be reinstated as a policy.	
ESA-109-June 13	4.1 Schedule	Project Schedule: 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-look and re-planning of the Harold work. Status: ESA has committed to placing the latest re-plan of the Harold work in the November 2014 IPS update. Recommendation: Establish a stable project baseline schedule that can be used to measure actual project performance going forward.	1
ESA-112-June 13	5.6 Project Contingency	Project Cost Reporting: The Re-Plan Budget has now been included in the ESA reporting, however they have promised for nearly one year that to provide an Integrated Cost System and Report, but has not delivered nor provided system development updates. Status: In September 2013 ESA said they were developing an Integrated Tracking and Reporting System; in March 2014 ESA notified the PMOC that they had hired a Unifier developer who was working with staff to get data and would provide the new reporting very shortly. As of August 2014, ESA has only been able to develop small portions of the Unifier system and notified the PMOC that until further notice they will use	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		Expedition reports while continuing to work on Unifier. ESA has been unable to provide either a projected timetable for development, or a plan showing data source flow for reporting. Recommendation 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, and immediately demonstrate a plan for development and a detailed data sources and flow schema.	
ESA-114-Sep13	3.0 ELPEP Compliance	ELPEP Compliance: With MTACC's submission of its East Side Access FTA Quarterly Report (Apr, May, June '13) and then continuing with all subsequent reports through September 2014, 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. Status: 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 is productive discussions regarding improvements to cost and schedule reporting during the monthly cost and schedule review meetings. PMP Rev. 10 was initially submitted to the FTA and the PMOC on July 18, 2014 and was subsequently revised and re-issued on September 18, 2014 based on additional comments by the PMOC and the results of several working meetings. The current PMP Rev. 10 is under final review by the PMOC. 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. The PMOC notes that the updated TCC Plan was expected earlier in 2014 but has not yet been submitted pending	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		finalization of the role, responsibilities and level of authority of the ESA Change Control Committee. Recommendation: 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.	
ESA-116-June14	6.1 Risk Process	Risk Management Processes: The PMOC is concerned about the continuing failure to fully follow the risk management processes in the Risk Management Plan (RMP). Status: ESA has resumed its monthly risk meetings and has submitted an updated risk register. The PMOC will close action ESA-116 in the next quarter provided that the risk meetings and submittal of updated risk registers continues on a regular basis. Recommendation: The PMOC will close this action in the next quarter provided that the risk meetings and submittal of updated risk registers continues on a regular basis.	1
ESA-117-Sep12	1.6 Quality	As-Built Process Audit: The ESA Quality Manager conducted an As-Built Process Audit on the contractors for the following eight contracts: CH053, CH054A, CQ032, CM004, CM014A, CM005, CM013, and CM013A. Status: Each contractor was rated in eighteen categories including As-Built Logs, Redline Hard Copies, As-Built Submittals, As-Built Certifications, CAD Drawings, and Survey Data Backup. Two contracts received a final rating of Fail; one contract received a final rating of Pass, and the remaining five contracts were rated as Need Improvement. Recommendation: The PMOC recommends that the ESA Manager request corrective action from each contractor and conduct a follow-up audit.	2
ESA-118-Sep14	1.6 Quality	CS179 (Systems Package 1 – Base Contract): The CS179 Contractor is not meeting its Quality requirements. Status: Six months after notice to proceed, the Contractor has not submitted its first Construction Work Plan (CWP). Among the other issues are: no approved Quality Plan,	2

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		their organization chart is missing two key positions, no approved Inspection and Test Plan; and no quality training to their staff and subcontractors,. Recommendation: The PMOC recommends that this issue be elevated to the Contractor's upper management for resolution.	

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 the re-planned Harold schedule is incorporated into the IPS.	2	12/31/14

APPENDIX A -- LIST OF ACRONYMS

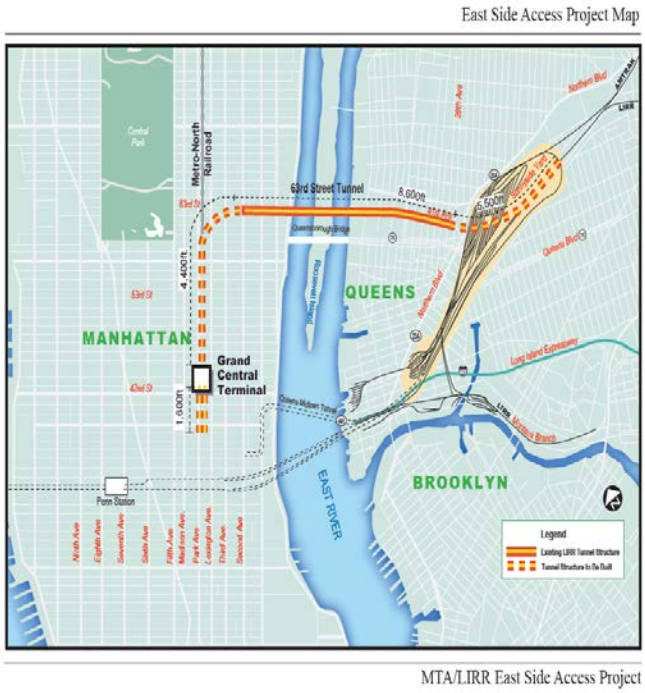
AFI	Allowance for Indeterminates
ARRA	American Recovery and Reinvestment Act
BA	Budget Adjustment
CBB	Current Baseline Budget
C&S	Communication and Signals
CCC	Change Control Committee
CCM	Consultant Construction Manager
CM	ESA Construction Manager assigned to each contract
CMP	Cost Management Plan
CPOC	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)
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.

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 ($YOE) at FFGA signed
9,744.1 million	Total Project Cost ($YOE) at Revenue Operations
11,361.6 million	Total Project Cost ($YOE) at date of this report including $ 1,036.1 million in Finance Charges
5,096.2 million	Amount of Expenditures as of August 31, 2014 based on the Total Project Budget of $10,177.8 million
49.6	Percent Complete based on the Re-plan budget of $10,177.8 million and invoices in the August 2014 report
[redacted]	[redacted]
51.3*	Construction Percent Complete
52.0*	Overall Project Percent Complete

*As of August 31, 2014, based on the June 2014 ESA Re-plan Budget [redacted], as provided by ESA in its August 2014 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.

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. The SSOA's representative has had a meeting with NYCT system safety and the grantee. The PMOC attended a meeting with the grantee and the SSOA. Additionally, 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

Project Overview		
		ability for the SSOA to more effectively and efficiently accomplish its mission moving forward. 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**.**
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	Y	Grantee has forwarded the revised SSMP

Project Overview		
necessary?		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 Assistant Chief of Safety and Security for the MTACC meets regularly with the project 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.

Project Overview		
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 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.

Project Overview		
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 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 previous quarterly report, the grantee has begun to document said verifications by use of their Quality Department 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

Project Overview		
		grantee is working within the PMP to identify critical submittals relevant to system certification. PMOC has expressed concerns, both at meetings and in reports, about the non-linear pattern of completed construction vs. incomplete critical testing. The grantee is uncertain as to what determines criticality for testing purposes. The grantee is in the process of identifying the critical tests.
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.
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 is finalized and that it is undetermined at this time who the incident commander will be employed by; LIRR, MNR or MTA Headquarters. A full scale emergency exercise took place this quarter. The exercise included MTA PD, FDNY, and other agencies.
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

(To be updated when ESA provides its Cash Flow charts as part of ESA Re-plan Budget)

Quarter/year	Construction $(000)	Engineering $(000)	OCIP $(000)	Project Mgmt. $(000)	Real Estate $(000)	Rolling Stock $(000)
Remaining	**3,378,075**	**72,979**	**70,377**	**320,650**		**665,000**
2Q2012	0	0	0	0	0	0
3Q2012	222,294	4,316	6,491	19,004	27,996	0
4Q2012	210,086	4,316	0	19,231	12,762	0
1Q2013	197,258	4,222	13,158	18,693	100	0
2Q2013?	140,095	4,269	0	18,300	100	0
3Q2013	88,877	4,316	0	17,696	25,065	0
4Q2013	107,716	4,316	0	17,842	0	133,000
1Q2014	133,847	2,451	16,724	18,016	0	2,015
2Q2014	187,386	2,478	0	17,870	0	6,045
3Q2014	231,954	2,506	0	17,244	0	50,761
4Q2014	253,979	2,506	0	17,000	0	50,761
1Q2015	260,374	2,451	18,186	16,146	0	50,761
2Q2015	270,030	2,478	0	15,630	0	50,761
3Q2015	272,517	2,506	0	14,082	0	50,761
4Q2015	246,154	2,506	0	13,742	0	50,761
1Q2016	194,243	2,478	15,818	12,390	0	50,761
2Q2016	143,159	2,478	0	12,046	0	50,761
3Q2016	90,925	2,506	0	11,260	0	50,761
4Q2016	50,410	2,506	0	11,109	0	67,091
1Q2017	25,987	2,451	0	8,481	0	0
2Q2017	14,425	2,478	0	7,519	0	0
3Q2017	10,051	2,506	0	6,377	0	0
4Q2017	9,116	2,506	0	5,352	0	0
1Q2018	5,911	2,451	0	3,497	0	0
2Q2018	5,439	2,478	0	1,649	0	0
3Q2018	4,584	2,506	0	379	0	0
4Q2018	1,256	0	0	94	0	0
1Q2019	0	0	0	0	0	0
2Q2019	0	0	0	0	0	0
3Q2019	0	0	0	0	0	0
4Q2019	0	0	0	0	0	0
Subtotal	**3,378,075**	**72,979**	**70,377**	**320,650**	**66,023**	**665,000**

Table G-2a: 90 day look ahead Schedule (September 1, 2014 data date)

Activity Name *	Start	Finish	IPS-CONTRACT
CM014 Bid Due Date - Bid Opening		5-Sep-14	CM014B
Deliver H2 CIL		16-Sep-14	FHL02
Board Approval		3-Oct-14	CM005
AWO NTP		9-Oct-14	CM005
FHL01 - Cutover 821/ 823 Crossover		12-Oct-14	FHL02
Complete Cable Pulls from HP1 to "C" Cases		17-Oct-14	FHL02
MILESTONE #2 - COMPLETE & TURNOVER FOR BENEFICIAL OCCUPANCY OF YL TRK ENVELOPE		20-Oct-14	CQ032
CH053 Complete Grading West of H3-CIL		31-Oct-14	FHL02
CM007 Advertise	1-Nov-14		CM007
CH057 Advertise Date	3-Nov-14		CH057
CH053 Complete Grading East of 43rd Street (Northside) (WBY)		7-Nov-14	FHL01
CH053 Complete Grading (Northside) (Track A Approach Structure)		7-Nov-14	FHL01
Complete Trough (East of H3-CIL)		14-Nov-14	FHL02
Complete Trough (Ball Field Area)		28-Nov-14	FHL02

*Activities and dates shown in this chart are critical to maintain the early Revenue Service Date (RSD) of March 25, 2020 presented in the current ESA IPS update.

Table G-2b: Critical Path (September 1, 2014 data date)

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
VM014	VM014	VM014-Vertical Circulation - Escalators & Elevators Construction	1199	27-Sep-10 A	24-Jul-19	840
CM012-Cavern-P10	CM007	CM007 Preparation and Ready for Advertisement including Design, ESA PMT Cost Estimate	194	03-Jun-13 A	31-Oct-14	45
FML-LIRR		FML05, FML06, FML07 - Cavern,63rd Tunnel Rehab & Bellmouth-LIRR	1460	09-Sep-13 A	8-Jul-19	39
FMM-MNR		FML05, FML06, FML07 - Cavern,63rd Tunnel Rehab & Bellmouth-MNR	1460	09-Sep-13 A	8-Jul-19	39
CS179	CS179	CS179 - Facilities Systems Construction	1454	31-Mar-14 A	26-Nov-19	0
LOE180	CM005	Waterproof - WB GCT Caverns 1 & 2 (Water Barrier)	10	03-Apr-14 A	4-Sep-14	-1
LOE660	CM005	WB GCT 1 & 2 - Endwalls/East Sidewalls (Mezz to Inv)	40	27-Aug-14 A	28-Oct-14	-1
LOE680	CM005	WB GCT 1 & 2 - Interior Walls and Mezzanine Slab	66	29-Oct-14	4-Feb-15	-1
CM012-Cavern-P40	CM007	CM007 Initial Bid Period	63	3-Nov-14	4-Feb-15	45
CM012-Cavern-P20	CM007	CM007 Advertise	0	03-Nov-14*		45
LOE1470	CM005	Waterproof East/West Wall	10	5-Feb-15	20-Feb-15	-1
CM012-Cavern-P50	CM007	CM007 Addendum Period & BAFO	53	5-Feb-15	22-Apr-15	45
LOE690	CM005	WB GCT 1 & 2 - East Side Wall @ Mezzanine	19	23-Feb-15	19-Mar-15	-1
LOE700	CM005	WB GCT 1 and 2 West Side Wall @ Mezzanine	19	20-Mar-15	15-Apr-15	-1
LOE440	CM005	WB GCT 1 and 2 Interior Walls between Mezzanine and Upper Slab	65	16-Apr-15	16-Jul-15	-1
CM012-Cavern-P60	CM007	CM007 Bid Open	0		22-Apr-15	45
CM012-Cavern-P30	CM007	CM007 Ready for Award	48	23-Apr-15	30-Jun-15	45
A1060	CM007	CM007 NTP	0	01-Jul-15*		45

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CM007	CM007	New Contract (CM007) - GCT Caverns	1021	1-Jul-15	8-Jul-19	0
LOE710	CM005	WB GCT 1 and 2 Upper Slab	86	3-Jul-15	3-Nov-15	-1
LOE140	CM005	WB GCT 1 and 2 Arch	47	4-Nov-15	14-Jan-16	-1
LOE190	CM005	WB GCT 1 and 2 Demob	10	15-Jan-16	28-Jan-16	-1
MS60FLOAT	CM005	Contract Level Contingency on MS #4	9	28-Jan-16	6-Feb-16	0
MS60	CM005	Milestone 4 Complete Balance of Project (Substantial Completion) - MS60 - (February 6, 2016)	0		06-Feb-16*	0
CM005-TO55	CM005	CM005 MS #4 Turnover to CM007 Unlimited NTP	60	6-Feb-16	6-Apr-16	0
CCM0121570	CM007	CM007 Access to Caverns	0	6-Apr-16		0
A1120	CM007	CM007 Mobilization	63	6-Apr-16	6-Jul-16	0
A21070	CM007	East Cavern GCT - 45th Street Node	42	6-Jul-16	2-Sep-16	0
A21300	CM007	West Cavern GCT - 45th Street Node	42	6-Jul-16	2-Sep-16	0
A21080	CM007	East Cavern GCT - 46th Street Node	42	2-Sep-16	2-Nov-16	0
A2030	CM007	West Cavern GCT - 46th Street Node	42	2-Sep-16	2-Nov-16	0
A21090	CM007	East Cavern GCT - 47th Street Node	42	2-Nov-16	4-Jan-17	0
A21310	CM007	West Cavern GCT - 47th Street Node	42	2-Nov-16	4-Jan-17	0
A21100	CM007	East Cavern GCT - 48th Street Node	42	4-Jan-17	3-Mar-17	0
A21320	CM007	West Cavern GCT - 48th Street Node	42	4-Jan-17	3-Mar-17	0
A21260	CM007	East Cavern GCT - Upper Level Precast Beams & Panels (Incl. closure pours)	126	3-Mar-17	30-Aug-17	0
A20890	CM007	West Cavern GCT - Upper Level Precast Beams & Panels (Incl. closure pours)	126	3-Mar-17	30-Aug-17	0
A21270	CM007	East Cavern GCT - Upper Level CIP Walls	115	18-Apr-17	29-Sep-17	0

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
A20870	CM007	West Cavern GCT - Upper Level CIP Walls	115	18-Apr-17	29-Sep-17	0
A21280	CM007	East Cavern GCT - Overhead Smoke Plenum	84	1-Aug-17	29-Nov-17	0
A20900	CM007	West Cavern GCT - Overhead Smoke Plenum	84	1-Aug-17	29-Nov-17	0
A21290	CM007	East Cavern GCT - Upper Level Platform Panels	42	30-Oct-17	29-Dec-17	0
A20920	CM007	West Cavern GCT - Upper Level Platform Panels	42	30-Oct-17	29-Dec-17	0
A2010	CM007	East Cavern GCT - MEP & Architectural Upper Level	250	29-Dec-17	21-Dec-18	0
A20930	CM007	West Cavern GCT - MEP & Architectural Upper Level	250	29-Dec-17	21-Dec-18	0
A20960	CM007	CM007 Demobilization	21	21-Dec-18	23-Jan-19	0
CM12-CSC10	CM007	CM007 Schedule Contingency	116	23-Jan-19	8-Jul-19	0
CM12-CSC	CM007	CM007 Milestone #3: Substantial Completion	0		8-Jul-19	0
RISK-12355	CS179	GCT Caverns - Communication IST - EMI/RFI Testing (JAM)	1	9-Jul-19	9-Jul-19	0
RISK-12365	CS179	GCT Caverns - Communication IST - FON Systemwide (JAM)	1	10-Jul-19	10-Jul-19	0
RISK-12345	CS179	GCT Caverns - Facility Power IST (JAM)	2	11-Jul-19	12-Jul-19	0
RISK-12415	CS179	GCT Caverns - Fire Detection IST (TMC)	22	15-Jul-19	13-Aug-19	0
RISK-12425	CS179	GCT Caverns - Security IST (MTA Police)	8	14-Aug-19	23-Aug-19	0
RISK-12435	CS179	GCT Caverns - BMS IST (TMC) (ALL Duration in Cavern & Concourse)	10	26-Aug-19	6-Sep-19	0
RISK-12445	CS179	GCT Caverns - Fire Protection & Tunnel Lighting IST (JAM)	10	9-Sep-19	20-Sep-19	0
RISK-12375	CS179	GCT Caverns - Communication IST - Message Priority, Remote Op, Local Op, A/D, Messaging (TOC)	6	23-Sep-19	30-Sep-19	0

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
RISK-12385	CS179	GCT Caverns - Communication IST - Signage (TOC)	1	1-Oct-19	1-Oct-19	0
RISK-12395	CS179	GCT Caverns - Communication IST - Police AID (MTA Police)	1	2-Oct-19	2-Oct-19	0
RISK-12405	CS179	GCT Caverns - Communication IST - Passenger Comm, Comm. Racks & Equip, Voice Communication (TOC)	5	3-Oct-19	9-Oct-19	0
RISK-5600	CS179	Communication IST - Passenger Comm, Comm. Racks & Equip, Voice Communication (TOC)	5	10-Oct-19	16-Oct-19	0
RISK-5660	CS179	CS179 Contract Contingency	29	17-Oct-19	26-Nov-19*	0
SYS01-9000	CS179	(CS179 MS 13) CS179 Substantial Completion w/ Integrated System Testing Completion	0		26-Nov-19*	0
RISK-5740	STCO	ESA IST Contingency 1 (IST Completion Contingency to LIRR)	170	27-Nov-19	14-May-20	0
RISK-12485	STCO	Stakeholder agreed additional IST Contingency 2 (5 months)	154	15-May-20	15-Oct-20	0
DMT9020	STCO	COMPLETION OF INTEGRATED SYSTEM TESTING (WITH CONTINGENCY)	0		15-Oct-20	0
ESA-CONT40	STCO	ESA Program Schedule Contingency	365	16-Oct-20	15-Oct-21	0
ESA-CONT50	STCO	Stakeholder agreed additional Program Contingency (10 months)	304	16-Oct-21	15-Aug-22	0
ESA-C70	STCO	ESA Project Substantial Completion for LIRR Final 3 Months	0		15-Aug-22	0
LIRR-3M-CONT20	STCO	ESA Planning Contingency Ready for LIRR Final 3 Months Period	30	16-Aug-22	14-Sep-22	0
LIRR-3M20	STCO	LIRR Final 3 Months Period	90	15-Sep-22	13-Dec-22	0
RSD	STCO	LATE - Begin LIRR Revenue Service To GCT	0		13-Dec-22*	0

Table G-2c: Harold Critical Path and IPS Near Critical Path (September 1, 2014 data date)

Harold Critical Path

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CCH588030	CH058	EWD LI PASS - Out Of Serivce (Portion) 25-Mar-2017	0	25-Mar-17*		0
CCH588040	CH058	Install Secant App. 170EA (EWD LI PASS Outage) @ North, 2 Rigs / 2 Shifts	43	25-Mar-17	6-May-17	-4
CCH588050	CH058	Install Roof (300 lf), No Track Outage	21	19-Apr-17	9-May-17	-4
CCH588070	CH058	Install Tracks / 3rd rail on Roof	5	10-May-17	14-May-17	-4
CCH588080	CH058	Install Catenary Wire for Run-around track	5	15-May-17	19-May-17	-4
CCH588060	CH058	Cut & Throw Run Around Track	0	20-May-17		-4
CCH588110	CH058	LIRR Remove Line 3 (Signal Bridge 12 ~ 845 + Switches 843E + 841)	5	20-May-17	24-May-17	-4
CCH588090	CH058	Install Secant App. 100EA (Line 3 Outage) 2 Rigs / 2 Shifts	25	25-May-17	19-Jun-17	-4
CCH588100	CH058	Install Roof (525 lf), No Track Outage	35	15-Jun-17	20-Jul-17	-4
CCH588130	CH058	Backfill / Site Grading @ Roof	5	21-Jul-17	25-Jul-17	-4
SW1490	FHL03	Line 3(RL3 - NC 950') - During Year 2016 Summer Outage	7	26-Jul-17	1-Aug-17	-4
FHL0310142	FHL03	Install Switch AV2(841), #20 (4167E)	2	5-Aug-17	6-Aug-17	-2
FHL0310140	FHL03	Install Switch AV1(841), #20 (4167W)	2	12-Aug-17	13-Aug-17	-2

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
FHL03501360	FHL03	Remove/ Install 3rd Rail - Switch AV1(841), #20 (4167W)	2	12-Aug-17	13-Aug-17	-2
FHL03503420	FHL03	Install Jumpers for Switch AV1 (4167W) - 4004	4	14-Aug-17	17-Aug-17	-4
FHL0320070	FHL03	Cutover 3C - 841 Switch (AV1 / AV2)	2	19-Aug-17	20-Aug-17	-2
FHL303503630	FHL03	Contingency - '2017 summer outage	14	21-Aug-17	3-Sep-17	-4
FHL03500320	FHL03	Remove Switches 805E (Mainline 1)	2	9-Sep-17	10-Sep-17	-2
FHL0310060	FHL03	Remove Switches 805W(Mainline 3)	2	16-Sep-17	17-Sep-17	-2
FHL0207260	FHL02	H1/ H2 CIL Cutover(2J)	2	23-Sep-17	24-Sep-17	-2
FHL504630	FHL04	Remove Switch 813W	2	11-Nov-17	12-Nov-17	-2
FHL504750	FHL04	Remove Switch 811E	2	18-Nov-17	19-Nov-17	-2
FHL504790	FHL04	Remove Switch KS1 (821W)	2	18-Nov-17	19-Nov-17	-2
FHL504850	FHL04	Remove Switch KS2 (821E)	2	2-Dec-17	3-Dec-17	-2
FHL504710	FHL04	Remove Switch 811W	2	2-Dec-17	3-Dec-17	-2
FHL02.MS.235	FHL02	Remove Concrete Signal Cable Trench	48	4-Dec-17	9-Feb-18	-5
CH058-1690	CH058	Construct Track B/C Approach Structure(app. 50lf, --> 39th street)	40	9-Feb-18	21-Mar-18	-7
FHL0310092	FHL03	Install Xover Q2, #26.5 (1123E)	2	03-Mar-18*	4-Mar-18	82
FFHL031007	FHL03	Install Switch R2, #15 (1143E)	2	10-Mar-18	11-Mar-18	82
FHL0310070	FHL03	Install Switch R1, #15 (1143W)	2	17-Mar-18	18-Mar-18	82

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CCH586450	CH058	Install SW24 Shoring Column @ South - 10EA - 2 Crews	10	22-Mar-18	4-Apr-18	-5
FHL0310080	FHL03	Install Switch T1, #20 (1134W)	2	31-Mar-18	1-Apr-18	82
CCH586380	CH058	Drill / Cut Pier 6S & 7S (2' Openinig) - total 18 EA	22	5-Apr-18	4-May-18	-5
FHL0310192	FHL03	Install Switch T2, #20 (1134E)	2	14-Apr-18	15-Apr-18	82
CCH586390	CH058	Install SW24 Shoring Column @ North - 10EA - 2 Crews	10	7-May-18	18-May-18	-5
CCH586490	CH058	Install Bracket / Jack / W18 Transfer beam	10	21-May-18	1-Jun-18	-5
CCH586500	CH058	Install needle beam	5	4-Jun-18	8-Jun-18	-5
CCH586400	CH058	Excavation / lagging / Demolish Footing & Crash Wall	20	11-Jun-18	6-Jul-18	-5
CCH586330	CH058	Excavation/ lagging	27	9-Jul-18	14-Aug-18	-5
CCH586340	CH058	Install Mud Slab	10	15-Aug-18	28-Aug-18	-5
CCH587830	CH058	Waterproofing for Invert	7	29-Aug-18	6-Sep-18	-5
CCH586350	CH058	Rebar/Form/Pour Conc Invert	44	7-Sep-18	7-Nov-18	-5
CCH587840	CH058	Waterproofing for Wall	7	8-Nov-18	16-Nov-18	-5
CCH586360	CH058	Rebar/Form/Pour Conc Wall	100	19-Nov-18	5-Apr-19	-5
DM80120	CH058	(CH058) Trackwork B/C STA 1200+00 ~ 1212+25	25	8-Apr-19	10-May-19	-5
CH058-1030	CH058	Track B/C Approach Structure Complete	0		10-May-19	-5

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
FHL0410110	CH058	Tie-in Switch LK1 (Diamond Crossover) (2154W), Green Field, No track Outage	5	13-May-19	17-May-19	-5
FHL4410140	FHL04	Testing for Cutover 4D	30	20-May-19	28-Jun-19	-5
FHL0420060	FHL04	Cutover 4D - LK1, U1, LK2	2	29-Jun-19	30-Jun-19	0

Harold Longest Path

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CCH588030	CH058	EWD LI PASS - Out Of Serivce (Portion) 25-Mar-2017	0	25-Mar-17*		0
CCH588040	CH058	Install Secant App. 170EA (EWD LI PASS Outage) @ North, 2 Rigs / 2 Shifts	43	25-Mar-17	6-May-17	-4
CCH58SummerAP	CH058	Overall 2017 A&P Summer Outage	163	25-Mar-17	3-Sep-17	-4
CCH588050	CH058	Install Roof (300 lf), No Track Outage	21	19-Apr-17	9-May-17	-4
CCH588070	CH058	Install Tracks / 3rd rail on Roof	5	10-May-17	14-May-17	-4
CCH588080	CH058	Install Catenary Wire for Run-around track	5	15-May-17	19-May-17	-4
CCH588060	CH058	Cut & Throw Run Around Track	0	20-May-17		-4

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CCH588110	CH058	LIRR Remove Line 3 (Signal Bridge 12 ~ 845 + Switches 843E + 841)	5	20-May-17	24-May-17	-4
CCH588090	CH058	Install Secant App. 100EA (Line 3 Outage) 2 Rigs / 2 Shifts	25	25-May-17	19-Jun-17	-4
CCH588100	CH058	Install Roof (525 lf), No Track Outage	35	15-Jun-17	20-Jul-17	-4
CCH588130	CH058	Backfill / Site Grading @ Roof	5	21-Jul-17	25-Jul-17	-4
SW1490	FHL03	Line 3(RL3 - NC 950') - During Year 2016 Summer Outage	7	26-Jul-17	1-Aug-17	-4
FHL0310142	FHL03	Install Switch AV2(841), #20 (4167E)	2	5-Aug-17	6-Aug-17	-2
FHL0310140	FHL03	Install Switch AV1(841), #20 (4167W)	2	12-Aug-17	13-Aug-17	-2
FHL03501360	FHL03	Remove/ Install 3rd Rail - Switch AV1(841), #20 (4167W)	2	12-Aug-17	13-Aug-17	-2
FHL03503420	FHL03	Install Jumpers for Switch AV1 (4167W) - 4004	4	14-Aug-17	17-Aug-17	-4
FHL0320070	FHL03	Cutover 3C - 841 Switch (AV1 / AV2)	2	19-Aug-17	20-Aug-17	-2
FHL303503630	FHL03	Contingency - '2017 summer outage	14	21-Aug-17	3-Sep-17	-4
CCH588140	CH058	Complete 2017 Summer Outage	0		3-Sep-17	-4

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CH058-J1120	CH058	Excavation/ W/P / Rebar / Form / Con'c for Walls & Invert (3 shifts / day)	135	4-Sep-17	13-Mar-18	234
CH059-8150	CH059	(PART4) Mob / Submittal / Work Plan	40	12-Feb-18	9-Apr-18	276
CH059NTP	CH059	NTP CH059 - Harold Structures Part 4	0	12-Feb-18		386
CCH587940	CH058	Install Soldier Pile App. 8EA , 2 shifts@ South - No Track Outage (STA 54+50 ~ 55+15)	4	13-Mar-18	19-Mar-18	228
CCH587950	CH058	Rebar/Form/Pour Conc. Invert/Wall STA 55+40 ~ 55+15 (65 LF)	15	19-Mar-18	9-Apr-18	228
CH059-1030	CH059	(PART4) New Amtrak Train Washer	200	9-Apr-18	14-Jan-19	276
DM4120	FQA65	CH059 Compl. Structure to start New Loop 2 Track to New Carwash	0		14-Jan-19	276
CH059-1130	CH059	(PART4) New Amtrak Train Washer	0		14-Jan-19	276
FQA65-TK110	FQA65	65-3L:Install LP1B Sta. 55 ~ 76 on Future Loop 2 New Carwash from NW2 (~2,100)	11	15-Jan-19	29-Jan-19	276
FFHA01RP0430	FQA65	ET-Catenary: New Loop 2 & 1 65-0	2	30-Jan-19	31-Jan-19	270

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
FFHA01RP0440	FQA65	ET-Catenary: New Loop 2 & 1 65-3	40	1-Feb-19	28-Mar-19	270
FFHA01RP0450	FQA65	ET-Catenary: New Loop 2 & 1 65-4	25	29-Mar-19	2-May-19	270
FQA65-10649	FQA65	65-3L: Cut Throw New Loop 2 with 763(NW2)	2	4-May-19	5-May-19	110
TK80440	FQA65	65-3: Cutover New Loop 2 with 763(NW2)	0		5-May-19	110
FQA65-S3040	FQA65	Cut Switch Stage 65-3: Cutover Loop 2 with 763(NW2) & CH1	2	11-May-19	12-May-19	110
FQA65-S4010	FQA65	65-4: Conduit/ Trk Crt/ Signal / and Removal	14	13-May-19	29-May-19	328
FQA65-S4020	FQA65	65-4: Cables/ Termination/ Revision & Modification	5	30-May-19	4-Jun-19	328
FQA65-S5010	FQA65	65-5: Install Conduit / PB/ Trough/ Remove	30	5-Jun-19	10-Jul-19	328
FQA65-S5110	FQA65	65-5: Signal & Track Circuits	40	11-Jul-19	26-Aug-19	328
FQA65-S5020	FQA65	65-5: Cables/ Termination/ Revision & Modification	17	27-Aug-19	16-Sep-19	328
FQA65-S5050	FQA65	Cutover Stage 65-5: Loop A with 761(NW1) and 99(NW5)	2	21-Sep-19	22-Sep-19	110
FQA65-9999	FQA65	FQA65 Substantial Completion	0		22-Sep-19*	389
HAROLDSC10		Harold Completed	0		22-Sep-19	389

IPS near Critical path (Total Float between 1 and 60 days)

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CM012-Cavern-P10	CM007	CM007 Preparation and Ready for Advertisement including Design, ESA PMT Cost Estimate	194	03-Jun-13 A	31-Oct-14	45
FML-LIRR		FML05, FML06, FML07 -Cavern,63rd Tunnel Rehab & Bellmouth-LIRR	1460	09-Sep-13 A	8-Jul-19	39
FMM-MNR		FML05, FML06, FML07 -Cavern,63rd Tunnel Rehab & Bellmouth-MNR	1460	09-Sep-13 A	8-Jul-19	39
CQ032-190	CQ032	Sump Pits Contract	5	07-Oct-13 A	11-Sep-14	20
CQ032-260	CQ032	Area C06 Architectural Finishes	261	15-Jul-14 A	22-Jun-15	20
LOE610	CM005	EB GCT 1&2 Interior Walls and Mezzanine Slab/Endwalls	95	15-Aug-14 A	29-Dec-14	24
LOE670	CM005	WB GCT 1 & 2 - West Sidewalls (Mezz to Inv)	19	27-Aug-14 A	29-Sep-14	20
CH58-H235	CH061A	CH061A 90% Design Docs.	151	1-Sep-14	30-Mar-15	29
A24870	CH053	Construct Tunnel A Passage/Emergency Exit	30	15-Sep-14*	24-Oct-14	53
A1910	CH053	Backfill & Compact - Performed Under CPR-152	10	27-Oct-14	7-Nov-14	56
CM012-Cavern-P40	CM007	CM007 Initial Bid Period	63	3-Nov-14	4-Feb-15	45
CM012-Cavern-P20	CM007	CM007 Advertise	0	03-Nov-14*		45
FHL01332035	FHL01	CH053 Complete Grading East of 43rd Street (Northside) (WBY)	0		7-Nov-14	52
FFHL010725	FHL01	Signal Troughs (WBY) 118+00 to 125+00 (RW 43-N2)	20	10-Nov-14*	5-Dec-14	52
FHL303503850	FHL01	Complete Trough H1 to H2 (WBY)	0		5-Dec-14	52

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
FFHL010720	FHL01	Signal Trough (Track A) 110+00 to 116+00 -(RW #43-N1)	17	8-Dec-14	5-Jan-15	52
LOE620	CM005	EB GCT 1 & 2 - East Sidewalls (Mezz to Upp Slab)	19	30-Dec-14	26-Jan-15	24
FFHL010715	FHL01	Signal Trough (Track A) 103+00 to 110+00 -(Ret Wall 39-N2)	20	6-Jan-15	2-Feb-15	52
LOE630	CM005	GCT 1 & 2 EB - West Sidewalls (Mezz to Upp)	18	27-Jan-15	23-Feb-15	24
FFHL010705	FHL01	Signal Trough (Track A) 98+00 to 103+00 -(RW #HON-N1)	14	3-Feb-15	20-Feb-15	52
CM012-Cavern-P50	CM007	CM007 Addendum Period & BAFO	53	5-Feb-15	22-Apr-15	45
FHL303503860	FHL01	Complete Trough H2 to H3 (Track A)	0		20-Feb-15	52
FHL0250361N	FHL02	Remaining - Trough & Pull Box for - H2 CIL	25	23-Feb-15	27-Mar-15	52
LOE370	CM005	EB GCT 1 & 2 - Interior Walls between Mezzanine and Upper Slab	97	24-Feb-15	9-Jul-15	24
FHL0202649	FHL02	Deliver and set H2 CIL	1	28-Feb-15*	28-Feb-15	28
FHL03501800	FHL03	Remaining Conduits and Pull Boxes for Cutover 3A (Point)	8	30-Mar-15	8-Apr-15	52
CH58-H245	CH061A	90% Design Submission - Contract CH061A	0		30-Mar-15	29
CH58-H255	CH061A	CH061A 100% Design Docs.	45	31-Mar-15	1-Jun-15	29
FHL03501810	FHL03	Remaining Conduits and Pull Boxes for Cutover 3A (H2)	1	9-Apr-15	9-Apr-15	52
FHL03501820	FHL03	Remaining Conduits and Pull Boxes for Cutover 3A (H3)	31	10-Apr-15	22-May-15	52
CM012-Cavern-P60	CM007	CM007 Bid Open	0		22-Apr-15	45
CM012-Cavern-P30	CM007	CM007 Ready for Award	48	23-Apr-15	30-Jun-15	45
FHL03501850	FHL03	Install Case leg and platform-SM 1P, 2P (Point)	9	25-May-15	4-Jun-15	52

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CH58-H265	CH061A	100% Design Submission - Contract CH061A	0		1-Jun-15	29
CH58-H365	CH061A	ESA - Contingency (CH061A)	52	2-Jun-15	12-Aug-15	29
FHL03501860	FHL03	Install Case leg and platform-SM 1A, 2A, 25A (H3)	15	5-Jun-15	25-Jun-15	52
LOE1000	CM005	EB GCT 1 & 2 - Upper Slab	84	17-Jun-15	14-Oct-15	24
CQ032-MS03	CQ032	MILESTONE #3 - C06 & B11 SUBSTATION LEVELS; INCL. C06 & B11 ROOF LEVELS	0		22-Jun-15*	29
FHL03501870	FHL03	Build/Install Signal 832WD (Point)	4	26-Jun-15	1-Jul-15	52
A1060	CM007	CM007 NTP	0	01-Jul-15*		45
A1050	CM007	Precast Procurement (From Shop Drawings to Delivery)	210	1-Jul-15	29-Apr-16	45
FHL03501880	FHL03	Build/Install "Begin ASC" Sign for Sunnyside Connector Track (H3)	1	2-Jul-15	2-Jul-15	52
FHL03501890	FHL03	Build/Install Signal 31W (H3)	4	6-Jul-15	9-Jul-15	52
FHL03501900	FHL03	Impedence Bonds (Point)	4	10-Jul-15	15-Jul-15	52
FHL03501910	FHL03	Impedence Bonds (H3)	16	16-Jul-15	6-Aug-15	52
FHL03501920	FHL03	Impedence Bonds (H2)	1	7-Aug-15	7-Aug-15	52
FHL03501930	FHL03	Express & Local Cables (Point)	9	10-Aug-15	20-Aug-15	52
MTACC-1240	CH061A	CH061A-Pre-Bid Preparation	65	13-Aug-15	11-Nov-15	29
FHL03501940	FHL03	Express & Local Cables (H3)	55	21-Aug-15	5-Nov-15	52
LOE1220	CM005	North UL302 Invert	17	15-Oct-15	6-Nov-15	37
LOE1260	CM005	North UL301 Invert	19	15-Oct-15	10-Nov-15	38
LOE1070	CM005	North LL401 Arch	13	15-Oct-15	2-Nov-15	51
LOE1110	CM005	North L402 Arch	12	15-Oct-15	30-Oct-15	48
LOE970	CM005	North LL404 Arch	12	15-Oct-15	30-Oct-15	37
LOE1030	CM005	EB GCT 1& 2 - Arch	47	15-Oct-15	23-Dec-15	24

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CH057A-1730	CH057A	Erect Signal Bridge 16 Structure - H5/H6/Loc 30	2	31-Oct-15	1-Nov-15	30
CH057A-1780	CH057A	Demolish Existing Signal Bridge 16 Footings	2	31-Oct-15	1-Nov-15	34
CH057A-5580	CH057A	CH057A Milestone 2 - Signal Bridge 16	0		01-Nov-15*	34
LOE1090	CM005	North L402 Duct Bench and Topping Slab	17	2-Nov-15	25-Nov-15	48
LOE1390	CM005	North UL 304 Invert	18	3-Nov-15	27-Nov-15	21
LOE1170	CM005	North LL404 Duct Bench and Topping Slab	18	4-Nov-15	2-Dec-15	45
LOE1180	CM005	North UL303 Invert	18	4-Nov-15	2-Dec-15	19
LOE1100	CM005	North L401 Duct Bench and Topping Slab	11	5-Nov-15	20-Nov-15	51
FHL03501950	FHL03	Express & Local Cables (H2)	1	6-Nov-15	6-Nov-15	52
LOE1230	CM005	North UL302 Arch	10	9-Nov-15	23-Nov-15	37
FHL03501980	FHL03	Pothead, Megger and Terminate cables	45	9-Nov-15	14-Jan-16	52
LOE1270	CM005	North UL301 Arch	12	12-Nov-15	1-Dec-15	38
CH58-H275	CH061A	CH061A Pls/MOUs/F/A Acceptance/Prebid preparation	59	12-Nov-15	2-Feb-16	29
SUMDNCH68	CH061A	CH061A - Design	81	12-Nov-15	3-Mar-16	29
LOE1240	CM005	North UL302 End Wall	12	24-Nov-15	11-Dec-15	38
LOE1250	CM005	North UL302 Duct Bench and Topping Slab	13	24-Nov-15	14-Dec-15	37
LOE980	CM005	North UL304 Arch	10	30-Nov-15	11-Dec-15	20
LOE1280	CM005	North UL301 Duct Bench and Topping Slab	8	2-Dec-15	11-Dec-15	38
LOE1190	CM005	North UL303 Arch	12	3-Dec-15	18-Dec-15	19
LOE1410	CM005	North UL304 Duct Bench and Topping Slab	18	14-Dec-15	8-Jan-16	20
LOE1210	CM005	North UL303 Duct Bench and Topping Slab	14	21-Dec-15	11-Jan-16	19
LOE1200	CM005	North UL303 End Wall	12	21-Dec-15	7-Jan-16	21
FHL03502600	FHL03	Remaining Conduits Cutover 3C (H4) - RI	20	15-Jan-16	11-Feb-16	52

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CH58-H285	CH061A	CH061A Legal / Procurement Review	22	3-Feb-16	3-Mar-16	29
LOE1480	CM005	Closeout	65	8-Feb-16	6-May-16	42
FHL03502610	FHL03	SM Conduits (H4)	34	12-Feb-16	30-Mar-16	52
MTACC-1250	CH061A	CH061A Advertise Date	0	4-Mar-16		29
CH58-H295	CH061A	Bid Period - Contract CH061A	30	4-Mar-16	14-Apr-16	29
WBS-8180	CH061A	CH061A Procurement IFB-Bid/Award	92	4-Mar-16	11-Jul-16	29
FHL03502620	FHL03	Install Case leg and platform-SM 57A, 57B, 57D (H4)	14	31-Mar-16	19-Apr-16	52
CH58-H305	CH061A	Addendum - Potential Bid Period Extension	10	15-Apr-16	28-Apr-16	29
FHL03502630	FHL03	Impedence Bonds (H4)	8	20-Apr-16	29-Apr-16	52
CH58-H315	CH061A	CH061A - Bid Due Date	0		28-Apr-16	29
CH58-H325	CH061A	Qualification Period - CH061A	30	29-Apr-16	9-Jun-16	29
FHL03502640	FHL03	Express & Local Cables (H4)	57	2-May-16	20-Jul-16	52
FHL503630	FHL04	Install Conduits, Pull Boxes, SM Conduits for switches	200	2-May-16	10-Feb-17	52
CH58-H335	CH061A	Qualification Meeting	1	6-May-16	6-May-16	53
CH58-H345	CH061A	Prepare Notice of Award Letter	22	10-Jun-16	11-Jul-16	29
CH58-H355	CH061A	Issue Notice of Award	0		11-Jul-16	29
FHL0210370	FHL02	Cut-Over Switch - H1 H2 (6156)	2	17-Sep-16	18-Sep-16	46
FHL0266330	FHL02	Cutover (2G) H5 / H6 / Loc 30 CIL (2G) w/o Diamond Crossover	2	17-Sep-16	18-Sep-16	44
FHL02.MS.00055	FHL02	Cutover H5 / H6 / Loc 30 CIL (2G)	0		18-Sep-16	46
FHL02-CSR310	FHL02	H5/H6/Loc 30 Cutover w/ Civil Speed Enforcement + Resequencing	0		18-Sep-16	44
FHL0210380	FHL02	Cutover Switch (2H) - K3/4 (6176) & H3/4 (6167)	2	24-Sep-16	25-Sep-16	44

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
FHL02.MS.00215	FHL02	Cutover Switch K3 (6176W)/ K4 (6176E) / H3 (6167W) / H4 (6167E) (2H)	0		25-Sep-16	44
FHL303503640	FHL02	Cutover 2I ML4 w/ 4178 Crossover (Operate D Tunnel)	2	22-Oct-16	23-Oct-16	52
FHL02.MS.00125	FHL02	Cutover 2I ML4 w/ 4178 Crossover (Operate D Tunnel)	0		23-Oct-16	52
FHL03500810	FHL03	Remove Switch 841W	2	11-Feb-17	12-Feb-17	44
FHL03503360	FHL03	Remove/ Install 3rd Rail - EWD LI PASS	4	11-Feb-17	19-Feb-17	44
FHL03503380	FHL03	Remove 3rd Rail from Existing 4167W/E (841)	2	11-Feb-17	12-Feb-17	46
FHL303503710	FHL04	Install Conduits, Pull Boxes, SM Conduits for switches	280	13-Feb-17	14-Mar-18	52
FHL03503030	FHL03	Fabricate 900 LF of Track Panels for Line 3 + Loading/Delivery	13	1-May-17	17-May-17	46
DMSUMMER16	CH058	Start 2017 Summer Outage 5/23 ~ 9/5	0	20-May-17*		1
FHL03500860	FHL03	Fabricate Switch AV2(841), #20 (4167E)	6	20-May-17	1-Jun-17	25
FHL03500850	FHL03	Fabricate Switch AV1(841), #20 (4167W)	6	1-Jun-17	10-Jun-17	25
FHL503900	FHL04	Fabricate Switch JD2 (5165E)	6	10-Jun-17	22-Jun-17	55
FHL03500370	FHL03	Prep AV1-841 (4167E) Switch and install wire harness	2	12-Jun-17	13-Jun-17	30
FHL03502670	FHL03	Drill holes, pre-install and test operation of AV1-841 (4167E) Switch on concrete panel.	2	14-Jun-17	15-Jun-17	30
FHL03502680	FHL03	Signal Works for AV1 Switch	5	16-Jun-17	22-Jun-17	30
FHL504160	FHL04	Fabricate Switch JD1 (5165W)	6	22-Jun-17	1-Jul-17	57
CH061ANTP	CH061A	NTP CH061A - A Approach & D Approach (East End) : 3-July-17	0	3-Jul-17		29

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
CH061A-1000	CH061A	CH061A - Mob / Submittal / Work Plan	44	3-Jul-17	31-Aug-17	29
A1695	CH061A	Excavation - A Approach Structure	70	5-Sep-17	12-Dec-17	27
HSUMA1685	CH061A	Construct Tunnel A Approach Structure	234	5-Sep-17	3-Aug-18	27
FHL02.MS.00065	FHL02	Cutover H1/H2 CIL (2J)	0		24-Sep-17	16
FHL504870	FHL04	Signal Works for Removing 855W Switch	5	9-Oct-17	13-Oct-17	5
FHL504880	FHL04	Remove Switch Panel with Machines 855W - Weekend	2	14-Oct-17	15-Oct-17	2
FHL504900	FHL04	Remove 3rd Rail from Existing 855W	2	14-Oct-17	15-Oct-17	2
FHL503890	FHL04	Install Switch Panel with Machines JD2 (5165E) - Weekend	2	14-Oct-17	15-Oct-17	2
FHL503920	FHL04	Remove / Install 3rd rail - Switch JD2 (5165E)	2	14-Oct-17	15-Oct-17	2
FHL503930	FHL04	Install Jumpers for Switch JD2 (5165E)	4	16-Oct-17	19-Oct-17	6
FHL04MS00	FHL04	Remove Switch 813W	0		12-Nov-17	2
A1855	CH061A	Concrete - Waterproof / Invert / Wall / Roof	142	13-Dec-17	3-Jul-18	27
CH058-BC-OLD	CH058	B/C Approach & Pit Roof Structure	420	9-Feb-18	5-Apr-19	30
FHL500560	FHL04	Signal Works for W2 Switch	45	15-Mar-18	16-May-18	52
A1975	CH061A	Final Grade, Place Ballast & WBY Track	66	2-May-18	3-Aug-18	27
FHL0203730AD	FHL02	Conduit for P1 P2 Switch	5	17-May-18	23-May-18	52
FHL0203655AD	FHL02	Install Case leg and platform-P1, P2, W1 Switch (SM 5A, 8A,17A, 20A)	5	17-May-18	23-May-18	52
FHL0204060AD	FHL02	Install Express & Local Cable - for P1, P2, W1 Switches	30	24-May-18	4-Jul-18	52
FHL0204450AD	FHL02	SM Cable - P1, P2, W1 Switches	4	5-Jul-18	10-Jul-18	52
FHL0204530AD	FHL02	Megger, Terminate & Test Cables: P1, P2, W1 Switches	16	5-Jul-18	26-Jul-18	52

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
FHL0310160	FHL03	Remove Switch PG1 + Install 220 LF PW 2 Track (PW2a)	2	21-Jul-18	22-Jul-18	58
FHL0203930	FHL02	3234WMPF Switch, SM 8A & Track Circuit: P1	11	27-Jul-18	10-Aug-18	52
FHL0203920	FHL02	3234W & 3234WA Switch & SM 5A: P1	8	27-Jul-18	7-Aug-18	52
FHL0310162	FHL03	Remove Switch PG2 / Replace Track ML 2(RML2, 720 LF)	4	28-Jul-18	5-Aug-18	58
A1565	CH061A	Complete - A Pit & Cut & Cover Section(app. 660 lf)	0		3-Aug-18	27
A1985	CH061A	Complete Tunnel A Roof Slab and WBY Track Installation	0		3-Aug-18	27
FHL0357A12	CH061A	Install Switch ZI2, #15 (3121E) - Green Field , No Track outage	5	6-Aug-18	10-Aug-18	28
FHL03502100	FHL03	Install Switch Panel with Machines ZI2 (3121E) - Weekend	2	11-Aug-18	12-Aug-18	26
FFHA01RP090	FHA03	ET-Catenary: 3132-3121 FTABS 3/3	37	13-Aug-18	3-Oct-18	27
FHL0203950	FHL02	3234EA & 3234E Switch & SM 10A: P2	8	13-Aug-18	22-Aug-18	52
FHL0203940	FHL02	3234EMPF Switch, SM 8A & Track Circuit: P2	11	13-Aug-18	27-Aug-18	52
FHL0207110	FHL02	Cut-Over P1/P2 (3234E/W) Crossover	2	25-Aug-18	26-Aug-18	22
FFHA01RP0560	FHA03	ET-Catenary: Cutover 3A - WBBY	2	6-Oct-18	7-Oct-18	12
FHL0320060	FHL03	Cutover 3A - AG1(835)	2	6-Oct-18	7-Oct-18	12
LIRR 7.3.1	OP-LIRR	Conduct Essential First Responder Orientation	89	20-Oct-18	16-Jan-19	60
FHA0450009	FHA04	Revision/ Testing/ Support for Cutover 4A	70	17-Dec-18	9-Mar-19	38
LIRR 7.3.2	OP-LIRR	Conduct Emergency Preparedness Drills	314	17-Jan-19	26-Nov-19	60
FHL303503700	FHL03	Cutover 3B - Track A with Q1/Q2, R1/R2, T1/T2	2	26-Jan-19	27-Jan-19	12
FHL03MS00230	FHL03	Cutover 3B - (Track A) - Q1/Q2 / ZE2 / R1/R2 / T1/T2 / ZF1 / ZK2	0		27-Jan-19	40

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
FHL02.TK.00270	FHL02	Install W1(3145)	2	09-Feb-19*	10-Feb-19	28
FHL0320100	FHL03	Cutover 3D (Track D) - K1/K2 / M1/M2	2	16-Feb-19	17-Feb-19	12
FHL03MS00250	FHL03	Cutover 3D - (Track D) - K1/K2 / M1/M2	0		17-Feb-19	16
FHL504230	FHL04	Install Switch Panel with Machines LK2 (5155E) - Weekend (Signal)	2	2-Mar-19	3-Mar-19	32
FHL504250	FHL04	Install Switch LK2 (5155E)	2	02-Mar-19*	3-Mar-19	30
FHL504260	FHL04	Remove / Install 3rd rail - Switch LK2 (5155E)	2	2-Mar-19	3-Mar-19	30
FHL04MS0040	FHL04	Install Switch LK2 (5155E)	0		3-Mar-19	30
FHA0420000	FHA04	Cutover 4A - Z1/Z2, ZA1, JH1, DN1	2	9-Mar-19	10-Mar-19	12
FHA500139	FHA04	Cutover 4A - Z1/Z2, ZA1, JH1, DN	0		10-Mar-19	12
FHA500099	FHA04	Revision/ Testing/ Support for Cutover 4C	22	11-Mar-19	4-Apr-19	38
CH058-1030-OLD	CH058	Track B/C Approach Structure Complete	0		5-Apr-19	30
FHL504390	FHL04	Install Switch Panel with Machines U1 (2154E) - Weekend	2	6-Apr-19	7-Apr-19	22
FHL504410	FHL04	Install Switch U1 (2154E)	2	06-Apr-19*	7-Apr-19	20
FHL504420	FHL04	Remove / Install 3rd rail - Switch U1 (2154E)	2	6-Apr-19	7-Apr-19	20
FHL04MS0060	FHL04	Install Switch U1 (2154E)	0		7-Apr-19	20
FHL504430	FHL04	Install Jumpers for Switch U1 (2154E)	4	8-Apr-19	11-Apr-19	51
FHL04100040	FHL04	Cutover 4C - V1/V2(Eastbound Reroute)	2	13-Apr-19	14-Apr-19	12
FHL04MS0300	FHL04	Cutover 4C - Operate EBRR - V1/V2 / 745	0		14-Apr-19	12
FHL504470	FHL04	Install Switch Panel with Machines LK1 (2154W), #32.75 - Weekend	2	18-May-19	19-May-19	10
FHL504500	FHL04	Remove / Install 3rd rail - Switch LK1 (2154W), #32.75	2	18-May-19	19-May-19	8
FHL504510	FHL04	Install Jumpers for Switch LK1 (2154W),	4	20-May-19	23-May-19	21

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
		#32.75				
FHL04MS0110	FHL04	Cutover 4D - LK1, U1, LK2	0		30-Jun-19	6
HRS9999	FHL04	Harold Complete Turnover to System Service	0		30-Jun-19	6
HAROLDSC10TO		ALL HAROLD COMPLETE - TURNOVER TO CS179 FOR IST	0	1-Jul-19	1-Jul-19	25
RISK-12195	CS179	Signals IST - Contractor (TOC)	22	1-Jul-19	30-Jul-19	19
CM12-CSC20	CM007	CM007 Contract Closeout	60	9-Jul-19	1-Oct-19	39
RISK-12265	CS179	Signals IST - LIRR (TOC)	21	31-Jul-19	28-Aug-19	19
RISK-5511	CS179	Traction Power IST (JAM)	35	29-Aug-19	16-Oct-19	19
CM12-CSC30	CM007	CM007 Milestone #3: Final Completion	0		1-Oct-19	39
RISK-12005	CS179	(CS179 MS 12B-1) Completion of IST of all equip installed by CM007	0		09-Oct-19*	48
DMT9000	STCO	COMPLETION OF INTEGRATED SYSTEM TESTING	0		16-Oct-19	41
RISK-5501	CS179	Communication - Train Radio (All Trackwork Installed) (TOC)	10	17-Oct-19	30-Oct-19	19
R-290	OP-LIRR	Training Train (500E+1008C) (Weekdays 8 Hrs TT, 2 Trains/shift 4-12, 1-9)	53	27-Dec-19	11-Mar-20	10
P-105	OP-LIRR	Initial Preview - Jamaica Shuttle 4 Weekends	8	18-Jan-20	9-Feb-20	4
P-110	OP-LIRR	Final Preview - Opening Day Service 4 Weekends	8	15-Feb-20	8-Mar-20	4
LIRR-22302	OP-LIRR	Communication Software Administration Instructor Training	25	16-Feb-20	11-Mar-20	14
LIRR-22712	OP-LIRR	Pump Equipment Instructor Training	16	25-Feb-20	11-Mar-20	14
LIRR-21842	OP-LIRR	FPSS equipment Instructors Training	11	1-Mar-20	11-Mar-20	14
LIRR-21732	OP-LIRR	Pump Operations Instructor Training	11	1-Mar-20	11-Mar-20	14

Activity ID	IPS-CONTRACT	Activity Name	Original Duration	Start	Finish	Total Float
R-420	OP-LIRR	Training Train (99C) (Weekdays 8 Hrs TT, 2 Trains/shift 4-12, 1-9)	7	3-Mar-20	11-Mar-20	10
P-120	OP-LIRR	Ready for Opening Day	0		11-Mar-20	14

Table H-1 – ESA Core Accountability Items

Project Status:		Original at FFGA	Current*	ELPEP **
Cost	Cost Estimate	$7.368B	$10.178B	$8.119B
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Schedule	RSD	December 31, 2013	December 2022	April 30, 2018

Total Project Percent Complete		
	Based on Expenditures	52.0***
	Based on Earned Value	NA

Major Issue	Status	Comments
Impact of CM012R solicitation cancellation, scope repackaging and re-bidding.	Scope from CM012R (Manhattan Structures 2) solicitation was split among existing and three new contract packages (CM005; CM006; CM007). CM005 and CM006 packages have been awarded and are underway. On CM007, design work for a hybrid design (pre-cast and cast in place concrete) is at 100% design completion.	The PMT continues working on developing the remaining contract package (CM007). ESA developed a cost estimate for this package; MTACC engaged an independent estimator to also produce an estimate. The PMOC requested a meeting to discuss the estimate and its reconciliation with the project estimate in the beginning of August however this meeting has not been scheduled by MTACC as of the end of September 2014.
Major Procurements Delays	CM014B was advertised in May 2014; Technical proposals for CM014B were received in August and cost proposals in September 2014. The CS084 (Traction Power) Contract Package was advertised in June 2014. Bids were opened on September 11, 2014.	Partial NTP for the CM007 Package cannot be made before July 2015 due to budget constraints. ESA has re-forecast advertise date for this package from October 2014 to November 2014. Given that CM014B is an RFP solicitation with a large number of proposers, the PMOC does not believe that MTACC will be able to issue NTP by December 1, 2014, the current forecast.
Project Schedule	MTACC presented a new baseline schedule to the MTA CPOC in June 2014, with an RSD in December 2022. This	Although MTACC has added an additional five months of contingency into the IST duration in the schedule; the

	schedule incorporates five months of contingency within the IST portion of the schedule and 22 months of Program level contingency.	PMOC believes that the issues uncovered by the SIR with IST will result in the utilization of much of the Program Contingency. As such the PMOC believes that the RSD of December 2022 does not have a high probability of being met.
Harold Re-planning	The ESA PMT is in the process of re-planning the remaining work at Harold, as such, the Harold baseline schedule that formed the basis of the Program schedule presented to the CPOC in June 2014, is no longer valid.	Depending on the magnitude of the delays in the Harold work, the Harold Interlocking work may now move on to the project critical path.

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

** 2010 Enterprise Level Project Execution Plan (ELPEP) reflecting medium level of risk mitigation, excluding financing cost of $1,116 million. PMOC has re-forecasted budget and schedule however date and budget number has not been finalized for reporting purposes as of the end of August 2014.

*** Expenditure percentage based on dividing "ESA Invoiced" figure by "Current Baseline Budget" [redacted].