

## **PMOC MONTHLY REPORT**

### **East Side Access (MTACC-ESA) Project**

Metropolitan Transportation Authority

New York, New York

Report Period October 1- October 31, 2015



PMOC Contract No. DTFT6014D00017

Task Order No. 2, Project No. DC-27-5287, Work Order No.1

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

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

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

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## **THIRD PARTY DISCLAIMER**

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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. DTFT6014D00017, Task Order No. 002. Its purpose is to provide information and data to assist the FTA as it continually monitors the Grantee's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the Grantee continues to be ready to receive federal funds for further project development.

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

## **MONITORING REPORT**

### **1.0 PROJECT STATUS**

#### **a. Design**

As of the end of September 2015, MTACC reported that the overall engineering effort was 98.0% complete, based on Earned Value for Design Deliverables, compared with a planned status of 100.0%. MTACC's Cost Report shows that 90.9% of the overall "EIS and Engineering" category has been invoiced and 91.0% of the "Design" category (including Design Settlement) has been invoiced, each approximately 0.6% greater than the previous month.

Design work on the new, stand-alone package CH061A (completion of Queens Tunnels "A" and "D") continued. The 100% review submission was made on August 21, 2015, and has been accepted. The package is currently awaiting funding. Contract advertisement is scheduled for December 14, 2015, with bids due on January 25, 2016, and Notice to Proceed on March 4, 2016.

For the 48<sup>th</sup> St. Entrance, the MTA Board had previously approved the design agreement with the building owner. The building owner agreed to provide the designs for the relocation of the existing interior utilities and to complete some limited structural design. MTACC is continuing discussions with the building owner and is nearing completion of the required easements and

construction agreements. The Proposed Change Order to repackage CM015 and CM015A will be revised and finalized based on the agreements reached during negotiations between the building owners and the MTACC.

Contract CH058 has been repackaged and the bid advertisement date has not been determined. The East Bound Re-route tunnel construction method has been revised from a top down to a traditional cut and cover method and ESA has split the scope of work into two separate Contracts: CH058A will contain Tunnel B/C Approach Structure; CH058B will contain the East Bound Re-route. The design work for this package is currently on hold and a Proposed Change Order is being developed by the GEC. Additionally, the final design for package CH058B is awaiting completion of a rail traffic simulation study for Harold Interlocking which is expected to be completed in December 2015.

On the Mid-Day Storage Yard Contract, CQ033, final resolution has been reached on the west end of the mid-day storage yard (CQ033) regarding what work is to be performed by Amtrak (track and signals) to tie into the ERT (East River Tunnels) and what work will be performed by the CQ033 contractor. Scope changes include the addition of the Sub 4 to Line 2 connection, approved by Amtrak, and the deletion of the Sub 3 to Line 4 connection. The GEC Proposed Change Order was negotiated and the final proposal was submitted to the PMT. Regarding the Arch Street Yard tie-in, resolution is still required between the MTACC and LIRR for final determination on the scope of LIRR Force Account (FA) work. The 100% design submittal for CQ033 was forecast for delivery in mid-June 2015. The GEC was not able to make this submittal, however, due to a large number of ESA comments that it was not able to properly address. Additionally, ESA continues to await 90% design comments from the LIRR. A site tour was held on October 22, 2015 west of Thompson Ave to review the Arch Street Yard connection and facilitate LIRR concurrence. The advertise date for CQ033 is currently forecast for 1Q2016.

A separate procurement package, Contract VQ033, will provide the eight Central Instrument Locations (CILs) for Contract CQ033, and is presently scheduled for award in 1Q2016. The GEC made final submission of the signed and sealed plans and specifications on August 14, 2015. The contract was advertised on August 17, 2015, and bids were received on October 30, 2015.

Contract CS086, Tunnel Signal Installation, is a stand-alone package. The MOU with LIRR for inclusion of Positive Train Control in (PTC) this contract is currently in progress. The GEC Proposed Change Order for the addition of PTC is being developed.

For Contract VS086, Systems Package 3 – Signal Equipment Procurement, the GEC design has been completed but now needs to be revised to incorporate the requirements of Positive Train Control (PTC). The GEC continues to prepare the Proposed Change Order.

## **b. Procurement**

As of the end of September 2015, the ESA Cost Report showed that total procurement activity for the project was 70.2% complete, with \$7.102 billion awarded out of the \$10.178 billion current projected budget.

The CM007 package was advertised on December 23, 2014, and contract documents were made available for proposers on January 15, 2015. The pre-proposal conference and site tour were

held in early March 2015. The proposal due date has been extended four times from May 2, 2015, to September 15, 2015, when 7 technical/schedule proposals were submitted. The cost proposal due date has been pushed back several times from October 6, 2015 to October 27, 2015 when 7 cost proposals were submitted. The PMT technical ranking recommendation letter has been finalized and approved and was issued on October 30, 2015.

[REDACTED] The MTACC had initially planned to award the CH057 Contract and issue a Notice to Proceed (NTP) on August 13, 2015, but this has been delayed through October 2015 while contract legal issues are being resolved.

Contract VQ033, Mid-Day Storage Yard CILs, was advertised on August 17, 2015, and bids were received on October 30, 2015.

### **c. Construction**

The PMT reported in its September 2015 Monthly Progress Report that total construction progress reached 59.0% complete versus 60.0% planned. The PMOC's calculations, based on data included in the ESA Cost Report shows construction completion at 58.2%. Since the 2014 Re-Plan, ESA has only performed at a rate of 84.0% of the projected accomplishments.

#### **CM004 – 44<sup>th</sup> Street Demolition and Fan Plant Structure: 245 Park Ave Entrance:**

Status: The CM004 contract was demobilized in 3Q2014 and MTACC established a Substantial Completion date of September 2014. There is however, one outstanding issue from the CM004 contract that requires resolution. The PMOC has been advised that delivery of the remaining limestone facing for the Vent Building, as well as acceptance of the material by the CM014B contractor, remains an issue that prevents CM004 from entering the closeout phase of the contract. The root cause of the problem is that the contractor did not implement proper procedures in delivery, handling and storage of the stone, causing several pieces to be either chipped or broken. MTACC has advised the contractor that they will not accept their proposed material credit and the contractor must transfer an acceptable batch of stone facing per contract.

**CM005 - Manhattan South Structures:** The MTACC Forecast Value for CM005 remained unchanged in September 2015 at \$246,374,990. The MTACC forecast for Substantial Completion remained at February 6, 2016. Actual construction progress for September 2015 was 2.2% versus 3.0% planned. Cumulative progress through September 30, 2015, was 91.9% actual versus 90.2% planned.

Construction Progress: During October 2015, the contractor completed the CMU walls at both GCT 1 & 2 East and West Wyes for machinery, equipment and office rooms. The contractor completed rebar in the GCT 1 & 2 East Wye Cavern archway and started the placement of pneumatically applied concrete (PAC). The contractor also continued to install rebar at the GCT 1 & 2 West Wye Cavern archway. The contractor continued concrete pours for the lower level walls in the Westbound Cavern. The contractor continued preparation for the precast ring installation in the North Raised Bore shaft. The contractor also continued archway construction at the 38<sup>th</sup> St. Vent Structure.

**CM006 – Manhattan North Structures:** The MTACC Forecast Value for CM006 remained unchanged at \$351,505,401 in September 2015. The MTACC forecast for Substantial

Completion changed slightly to January 4, 2017. Actual construction progress for September 2015 was 3.4% versus 5.6% planned. Cumulative progress through September 30, 2015 was 40.5% actual versus 65.6% planned. These percentages have changed due to MTACC's increase in the basis of contract amount.

Construction Progress: During October 2015, the CM006 contractor continued shotcrete of the arch of the GCT 4 East Wye Cavern, and also continued interior slab concrete at the 55<sup>th</sup> St. Vent Facility. The contractor started shotcrete of the GCT 5 East Wye arch this month. The contractor continued the lining of the lower level eastbound tunnel (EB2) from GCT 5 East Wye through 55<sup>th</sup> St. The contractor started to line the second tunnel, the lower level westbound (WB1), between the GCT 4 West Wye and 55<sup>th</sup> St. Vent Structure. The contractor also started construction of duct benches in the lower level eastbound tunnels. The contractor also started to construct duct benches in the lower level westbound tunnels between the GCT 4 West Wye and 50<sup>th</sup> St. Vent Structure. The contractor continued to construct the upper level mezzanine level slab at north end of the Eastbound Cavern. At the north end of the Westbound Cavern, the contractor continued to construct the lower level mezzanine slab as part of the Back of House (BOH) contract amendment. As reported before, the contractor is not meeting the recovery schedule milestones. The CM006 contractor and ESA continue to work together to achieve a realistic revised contract schedule.

**CM013A – 55th Street Vent Facility:** The MTACC reports, that through September 30, 2015, the Estimate at Completion (EAC) for CM013A remains \$56,362,324. The current MTACC forecast for Substantial Completion remains December 7, 2015. Actual construction progress for September 2015 was 0.5% versus 3.8% planned. Through September 30, 2015, cumulative progress was 94.7% actual versus 96.2% planned.

Construction Progress: In the Plenum, there have been leaks in various locations of the roof and joints in the wall. The contractor continues to grout the roof areas and correct the issues with the wall/floor joints. Punchlist work in the Cavern continues. At street level, curb installation was completed and sidewalk granite paver installation was completed. Temporary asphalt paving was placed along E.55<sup>th</sup> St. to allow traffic flow. Permanent street paving will be completed during a street closure on November 15, 2015.

**CM014A – Concourse and Facilities Fit-Out Early Work:** The MTACC reports that through September 30, 2015, the Estimate at Completion for CM014A is \$58,437,782 million. The MTACC forecast for Substantial Completion remains October 30, 2015, although, as the date of this report the South Substation had still not been energized. As a result, the forecast Substantial Completion date was not met. Actual construction progress for September 2015 was 0.9% versus 2.3% planned. Cumulative construction progress for September 30, 2015, was 97.2% versus 96.5% planned.

Construction Progress: Lock Out/Tag Out procedures for the various equipment rooms have been approved. A drawing from the contractor is pending. The System Safety Certification Checklist meeting to finalize the checklist signoff was held on Monday, October 12, 2015. The contractor must submit the final log of all of the equipment and material for the North Substation (CM014B) that is being stored in the Transcope storage facility. The FM-200 (fire suppression) tests will follow completion of permanent power. The CCU will witness the test. The Project Office has advised the PMOC that they have 18 pages of outstanding items to be completed on this contract. ConEd completed all of its tests and walkthroughs were completed. Energization

of feeds is currently on ConEd's availability schedule. Although this is a 6 feed system, the Project Office has advised the PMOC that only 1 to 2 energized feeds are required to complete the scope of this contract.

**CM014B – Concourse and Facilities Fit-Out:** [REDACTED]

[REDACTED] The Substantial Completion date remained August 18, 2018. Actual construction progress for September 2015 was 2.3% versus 1.8% planned. Cumulative construction progress through September 30, 2015, was 5.9% actual versus 3.0% planned.

Construction Progress: Surveying in the Concourse is continuous and will be on-going throughout this contract.

Concourse (Madison Yard): The contractor continues with layout, excavation, installation, and backfill of underslab piping in Zones 1-4. Waterproofing of the cast in place manholes and hand-holes continued. The concrete encasement of ductbanks in Zones 3 and 4 is nearing completion. Repair, upgrade, and maintenance of temporary vent system and emergency lighting utilities continues.

Wellways: Installation of formwork in Wellways #1 through #4 is ongoing. A Readiness Review Meeting for the wellway concrete placement took place on October 23, 2015. Placement of concrete in Wellway #1 is scheduled for November 2, 2015.

East 48<sup>th</sup> St. Entrance: Full street closures for the street decking installation was supposed to start on weekends, beginning October 16, 2015, but issues with ConEd line relocation prevented this from starting.

Biltmore Connection: Water proofing of pits ES-02 and C9/C10 was completed and concrete placement began. The Readiness Review Meeting for asbestos abatement to the steam line in Burma Road took place on October 23, 2015.

Dining Concourse Connection: The Readiness Review Meeting for demolition at the Upper Dining Concourse access area took place on October 23, 2015. The closure of the area was completed on October 26, 2015. MNR completed new utility line connections. The power cable installation was completed at Platform J. Excavation for the escalator pits began.

**Systems Contracts:**

**CS084 – Traction Power Substations:** As of the end of September 2015, the Forecast and the budget for the CS084 contract remained at \$78,373,772, as reported in the PMOC's September 2015 report. MTACC's and the contractor's forecasts for Substantial Completion are both December 2019. In its draft 3Q2015 report, MTACC shows a progress curve for the CS084 contract that presents actual contract progress as 2.4% versus a planned 1.6%; numbers that are based on actual versus projected costs, not physical construction efforts. An analysis of the status of the work activities shown on the approved baseline schedule is necessary to determine the status of the progress of physical work on this contract.

Design Progress: The contractor continued with the transmission of contractual submittals. Previously, the ESA CS084 Construction Manager noted that this contract uses the same MTA and GEC resources as those used on the CS179 contract to review documents and indicated that a backlog in the review and approval cycle of submittals was beginning to develop. As of mid-

October, through a combination of increased focus and proactive efforts by the ESA CS084 CM, the number of design-critical outstanding/overdue submittal and RFI responses from MTA was measurably reduced. Continued focused efforts on this underlying issue will be required to keep the design and construction efforts on schedule.

Construction Progress: As of mid-October, 2015, the CS084 contractor had neither started nor planned to start any significant construction. As previously reported, a \$210,000 contract modification was issued to procure some long lead-time equipment and an electrical line box for electrical power work needed for other ESA contracts. However, no funding was included in this original modification for the contractor to perform the installation work. Consequently, another contract modification, or an increase in value of this \$210,000 modification, was required to authorize the CS084 contractor to install the equipment and electrical line box. Initially, this was to be a “temporary” power installation scheduled for completion by the end of October 2015. However, in its September report, the PMOC advised that MTACC indicated that this installation would now be considered “permanent” and that it needed to be completed by January 2016. The contractor indicated in the September progress meeting that this work is forecast to take three months; and thus, the work needed to start in early October 2015 to be completed by early January 2016. In a mid-October 2015 CS084 progress meeting, the ESA CS084 Construction Manager acknowledged that negotiations and final approval to begin this work might not be completed by the end of October; thus jeopardizing the January 2016 completion date. In its draft 3Q2015 report, MTACC is now forecasting a March 2016 completion date for this work.

**CS179 – Systems Package 1:** [REDACTED]

[REDACTED] The MTACC forecast for Substantial Completion (SC) remained at November 25, 2019. The contractor was given Notice to Proceed (NTP) over 19 months ago, but there is still no approved baseline schedule. In its draft 3Q2015 report, MTACC shows a progress curve for the CS179 contract that presents actual contract progress as 8.6% versus a planned 8.2%; numbers that, in the PMOC opinion, are unsubstantiated considering the lack of a baseline schedule and the contractor’s continued assertions that there are significant delays in meeting 60% of the contract milestones. In contrast, MTACC contends that Milestone #1, the completion of work in the Traction Power Room at Vernon Boulevard, is the only milestone behind schedule. However, it is unclear to the PMOC how MTACC can reach this conclusion without an approved baseline schedule or a later monthly update schedule being available for review.

Design Progress: As of the end of October 2015, a number of the required Preliminary Design Review (PDRs) were held and several more are planned for November 2015. The contractor has indicated that the lack of responses from MTA to its Requests for Information (RFIs) and comments on design submittals are hampering its ability to develop the remaining preliminary designs. The primary systems designer, indicated that 57 out of 142 of the overdue responses it is waiting for, some of which are overdue by as much as 6 months are critical in nature and impacting the system design progression. The ESA CS179 CM acknowledged that the backlog in ESA’s review and approval of contractor design submittals and RFIs remains an issue and advised that this issue would be discussed further with the GEC.



Construction Progress: During October 2015, the CS179 contractor continued various elements of work (conduit installations, concrete work, temporary power installations, etc.) at the 2<sup>nd</sup> Ave.; B10: Roosevelt; Vernon; Tunnel A; Tunnel B, C & D; 12<sup>th</sup> St.; 29<sup>th</sup> St.; and 39<sup>th</sup> St. facilities. Two Stop Work Orders (SWOs) for work in the control rooms at the Vernon and B10 facilities are still in effect. Although the ESA CS179 CM wanted to negotiate the extra work associated with these SWOs in October, that effort did not take place. No date is available for completion of these negotiations. Work at the 23<sup>rd</sup> Street facility is on hold as a result of an issue with the concrete floor. The ESA CS179 CM indicated that some discussions are underway regarding this issue with the CQ032 contractor. The CS179 contractor noted in a recent progress meeting that it wants to begin work in this location.

### **Queens Contracts:**

**CQ032 – Plaza Substation and Queens Structures:** The MTACC Forecast Value for CQ032 remained unchanged in September 2015 at \$256,880,084. The MTACC forecast for Substantial Completion remains at June 21, 2016. Actual construction progress for September 2015 was 5.0% versus 1.5% planned. Cumulative progress through September 30, 2015 was 88.5% actual versus 81.9% planned. These percentages have changed due to MTACC increase in the basis of contract amount.

Construction Progress: During the month of October 2015, the CQ032 contractor continued Concrete Masonry Unit (CMU) exterior wall construction and interior ventilation duct work at the Yard Services building (YSB). The contractor continued CMU wall construction, exterior brick veneer installation, and roof construction at the Plaza Vent Structure. The contractor also continued to demolish the temporary slurry wall at the Vent Structure. The contractor completed the CO7 roof deck of the former Early Access Chamber, and started work to construct at-grade sidewalk vent structure along Northern Boulevard. Construction of the sidewalls of the Bellmouth Reconfiguration continued in October. Work at the 23<sup>rd</sup> St. facility remains on hold pending resolution of utility issues.

### **Harold Interlocking Contracts:**

**CH053 Contract – Harold Structures Part 1 and G.0.2 Substation:** The Forecast for CH053 decreased slightly to \$299,545,527 during September 2015. The MTACC forecast for Substantial Completion was extended by 3 weeks to January 19, 2015. Actual construction progress for September 2015 was 0.0% versus 0.0% planned (the project was supposed to be complete by now). Cumulative progress through September 30, 2015, was 96.2% actual versus 100.0% planned.

Construction Progress: During October 2015, the CH053 contractor began the “burn-in” process for the C2 12kV electric traction feeder circuit and continued the process for the C3 feeder. ESA has indicated that Amtrak will require 90 day “burn-in” periods for all 3 circuits. The contractor also installed the last catenary pole in its contract during October 2015. Additionally, the contractor continued to make punchlist repairs at numerous job site locations.

**CH054A – Harold Structures Part 2A:** The Forecast for CH054A increased slightly during September 2015 to \$58,239,980. The MTACC forecast for Substantial Completion was extended by 6 weeks to October 31, 2015, but this date was not achieved. Actual construction progress for September 2015 was 0.5% versus 0.0% planned. Cumulative progress through

September 30, 2015, was 98.4% actual versus 100.0% planned (the project was supposed to be complete by now).

Construction Progress: During October 2015, the CH054A contractor constructed a retaining wall for and installed SMU (snow melter unit) #3 and continued punchlist repairs at several locations throughout its job sites.

**CH057A – Part 3 Westbound Bypass:** The Forecast for CH057A remained at \$144,720,915 during September 2015. The MTACC forecast for Substantial Completion was extended by 3 weeks to January 31, 2017. Actual construction progress for September 2015 was 0.2% versus 2.0% planned. Cumulative progress through September 30, 2015, was 27.8% actual versus 80.4% planned.

Construction Progress: During October 30, 2015, the CH057A contractor prepared to install steel communications poles between Harold and Woodside Interlockings but did not perform any appreciable construction work, which is presently being delayed due to negotiations for several Contractor Proposal Requests (CPRs) that have been ongoing for the past two months.

**CH057C – 48<sup>th</sup> St. Bridge and Retaining Wall:** The Forecast for CH057C remained at \$3,091,418 in September 2015. The MTACC forecast for Substantial Completion was extended by 1 month to February 18, 2016. Actual construction progress for September 2015 was 16.3% versus 0.0% planned. Cumulative progress through September 30, 2015, was 64.3% versus 100.0% planned.

Construction Progress: During October 2015, the CH057C contractor completed demolition of the LIRR Freight Track and began construction of the RPR Track.

#### **Railroad Force Account Contracts:**

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

**FHA01 – Harold Stage 1 Amtrak:** The Forecast for FHA01 decreased slightly in September 2015 to \$18,418,310. The MTACC forecast for Substantial Completion was extended by 1 month to May 4, 2018. Actual construction progress for September 2015 was 0.0% versus 0.0% planned. Cumulative progress through September 30, 2015, was 97.8% actual versus 99.2% planned.

Construction Progress: Amtrak did not perform any significant Stage 1 construction during September 2015.

**FHA02 – Harold Stage 2 Amtrak:** The Forecast for FHA02 remained at \$60,150,231 during September 2015. The MTACC forecast for Substantial Completion was extended by 1 week to April 10, 2015. Actual construction progress for September 2015 was 0.1% versus 2.1% planned. Cumulative progress through September 30, 2015, was 101.6% actual versus 97.7% planned.

Construction Progress: During October 2015, Amtrak Communications personnel continued to install interduct and communications cables along the Loop Tracks between "F" and "T"

Interlockings and the High Speed Rail Building. Amtrak ET personnel assisted the CH053 contractor with installations of the B-913 and B-923 catenary poles and the B-924 K-Frame and then made the necessary wire transfers and catenary modifications at those locations.

**FQA65 – Loop Interlocking Amtrak:** The Forecast for FQA65 remained at \$33,287,863 during September 2015. The MTACC forecast for Substantial Completion was extended by 1 week to December 10, 2022. Actual construction progress for September 2015 was 1.2% versus 0.9% planned. Cumulative progress through September 30, 2015, was 13.1% actual versus 46.5% planned.

Construction Progress: During October 2015, Amtrak Signal personnel continued to install an action block retaining wall along Loop 2 Track between “Loop” and “T” Interlockings and began installation of impedance bonds, insulated joints, track circuits, and splice connections at various locations on the Loop tracks.

**FHL01 – Harold Stage 1 LIRR:** The Forecast for FHL01 was increased to \$24,379,363 during September 2015. The MTACC forecast for Substantial Completion remained at August 17, 2016. Actual construction progress for September 2015 was 0.2% versus 0.0% planned. Cumulative progress through September 30, 2015, was 117.8% versus 100.0% planned (the MTACC uses cost to calculate percentage complete and 117.8% of the funds for FHL01 have been expended with 100.0% of the work completed).

Construction Progress: LIRR did not perform any significant Stage 1 construction during September 2015.

**FHL02 – Harold Stage 2 LIRR:** The Forecast for FHL02 remained at \$92,932,559 during September 2015. The MTACC forecast for Substantial Completion was extended by 2 months to August 16, 2018. Actual construction progress for September 2015 was 2.7% versus 1.8% planned. Cumulative progress through September 30, 2015, was 77.4% actual versus 88.8% planned.

Construction Progress: During October 2015, LIRR Signal personnel conducted two successful 55-hour weekend pre-tests of the new “H3” CIL in Harold Interlocking and continued daily pre-testing. Signal personnel also continued to install cables for the newly installed #3164 turnout, continued to make ESA31 (revision designation) signal modifications in existing Harold Tower, continued to pull signal cables between the “H1” and “H2” CILs, and began signal modifications for the new E35 signal bridge and to excavation for the new “H2” CIL foundation and legs.

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

**Quality Staff:** A key ESA Quality Staff member resigned in July 2015. The ESA Manager reported that he is looking for a replacement candidate that has a systems background.

**GEC Quality:** The GEC Quality Manager’s last day on the job was September 4, 2015. The GEC Program Manager named a replacement for him in October. The ESA Quality Manager requested that a formal request be submitted to him before he can approve the appointment.

The ESA Quality Manager performed an audit of the GEC Quality Team. He has finalized the report but will discuss it with the GEC Program Manager before issuing it in November 2015. There were no significant findings.

**CS179 (Systems Package 1 – Base Contract):** This contract was awarded 19 months ago and there is still not an approved (resource loaded) baseline schedule. The contractor's ESA CS179 Quality Manager had been conditionally approved as the Quality Manager for this contract for a period of 90 days that ended in September 2015. The ESA Quality Manager will conditionally approve another individual who has been performing most of the quality functions once that individual has been formally submitted. If he performs well after 90 days, he will then be approved as the CS179 contractor's permanent Quality Manager. There are two outstanding Non-Conformance Report issues, identified in 2015, that remain to be addressed and closed.

**Quarterly Quality Oversight (QO):** The ESA Quality Staff conducted 3Q2015 QOs on each of the active ESA contracts. All contracts scored well with a normal amount of findings, recommendations and comments.

**PMOC Observations:** The PMOC attended many of these QOs. The ESA contractors were given the QO checklist prior to the QO and were well prepared.

## 2.0 SCHEDULE DATA

ESA submitted its IPS #74, data date October 1, 2015, and its variance report to the PMOC.

Although ESA's IPS #74, still indicates that the Critical Path goes through the procurement of Contract CM007 and then to construction of the structure within GCT, the PMOC maintains its opinion that ESA's Manhattan Critical Path has 2 concurrent paths because of the delay in Contract CM006 and its logic tie with Contract CM007. ESA's IPS does not show the logic tie between completion of Milestone #2 in Contract CM006 (completion of all work in lower level of Westbound Cavern) and CM007 access to the lower level caverns. Contract CM006 is scheduled to complete work in the lower level tunnels by May 9, 2016, 99 days later than originally scheduled. Additionally, it should be noted that there is another hand-off to Contract CS179 scheduled for May 25, 2016, which leaves ESA with less than a month contingency for CS179 Access Restraint #12. This portion of Contract CS179 scope of work is not authorized as part of the base contract, but rather in Option #2 (exercise date – November 6, 2015).

After finishing Contract CM007, the ESA Critical Path shifts to CS179 work within the Train Operation Center (TOC) and finally through Integrated Systems Testing (IST), Starting, Commissioning and RSD. ESA has a significant number of contracts that are "near critical", which by definition are within 45 days of the Critical Path. These contracts are:

- CM014B: GCT Concourse & Facilities Fit Out (hand off to CS179 IST);
- CM007: GCT Caverns (hand off from CM006 access via critical path above);
- CQ032: Plaza Substation and Queens Structures (Early Access Chamber);
- CQ033: Mid-Day Storage Yard;
- VQ033: CIL Procurement – Mid-Day Storage Yard;
- CH053: Harold Structures Part 1 & G02 Substation (hand off to CH057A);
- CH057D: Harold Track Work: Cutover 3B (Track A) – Future Contract;
- CH057E: Harold Catenary Work;
- CS179: System Facilities – Package 1 (IST) – Future Contract;
- CS084: Tunnel Systems Package 4 – Traction Power Procurement and Installation;
- FHA01/02/03/04: Harold Amtrak Force Account Work (integral with the CH contracts);
- FHL02/03/04: Harold LIRR Force Account Work; and
- FQA65: Loop Interlocking – Amtrak Force Account Work (CIH and Switch work)

Contract CS179, Systems Package 1 – Facilities Systems, also shows significant delays in 10 milestones so far. Additionally, the contractor has not submitted an acceptable resource loaded baseline schedule that includes an IST schedule. The PMT had been expecting the submission at the end of October 2015, but this did not occur. The PMOC believes that the PMT will need to manage the CS179 contract in a manner consistent with the outcome of the Contract CM007 negotiations and based on a full understanding of the complex coordination between the two contracts.

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

**Table 2-1: Future Procurement Schedule**

<b>Contract Description</b>	<b>Advertise Date</b>	<b>Bid Date</b>	<b>NTP</b>	<b>Project Contract Period</b>	<b>Substantial Completion</b>
CM007 <sup>1</sup> GCT Caverns	12/19/2014 (A)	Technical Proposal: 9/15/2015 (A)	1/4/2016	43 Months	7/24/2019
		Cost Proposal: 10/27/2015			
CQ033 <sup>2</sup> Mid-Day Storage Yard	12/28/2015	3/3/2016	5/2/2016	37 Months	5/28/2019
VQ033 Mid-Day Storage Yard CIL Procurement	8/17/2015 (A)	10/30/2015	12/1/2015	42 Months	5/28/2019
CH057 48 <sup>th</sup> Street Bridge / D Pit and Approach Structure	4/7/2015 (A)	7/9/2015 (A)	11/3/2015	29 Months	4/18/2018
CH061A, Tunnel A	12/14/2015	1/25/2015	3/14/2016	14 Months	5/16/2017
VHA04 Procure Materials for Harold Stage 4 - Amtrak F/A (Buy America)	N/A	N/A	11/16/2015	75 Months	1/25/2022

<sup>1</sup> CM007's technical bid review date has slipped by 2 months to date, although ESA has held the NTP date for January 1, 2016. Any additional complications in the procurement cycle could potentially cause further time loss and a delay to the NTP date.

<sup>2</sup> CQ033 was planned to be awarded by the end of 4Q2015, but is now projected to have a 3 month delay. [REDACTED]

Table 2-2, below, shows important 90 day look-ahead milestone schedules:

**Table 2-2: Critical Milestones 90 Day Look Ahead (from ESA IPS #74)**

Activity ID	Activity Name	Start	Finish	Total Float
<b>CM005: Manhattan South Structures</b>				
CM005-1040	Milestone 4 Complete Balance of Project (Substantial Completion) - MS60 - (February 6 2016)		6-Feb-16	89
<b>CM007: GCT Caverns</b>				
CM007-0160	CM007 Notice of Award		31-Dec-15	0
CM007-1020	CM007 NTP	04-Jan-16		0
<b>CQ033: Mid-Day Storage Yard Facility</b>				
CQ033-1050	CQ033 Begin Preparation for Advertisement		1-Dec-15	47
CQ033-1060	CQ033 Begin Advertisement	29-Dec-15		47
<b>VQ033: CIL Procurement - Mid-Day Storage Yard</b>				
VQ033-1090	VQ033 Notice To Proceed (NTP)	1-Dec-15		29
<b>CH057A: Westbound Bypass Structure (exclude Slab)</b>				
CH057A-5580	CH057A Milestone 2 - Signal Bridge 16		13-Dec-15	24
<b>CH057D: Harold Track Work (PW1/NH1/WBY)</b>				
CH057D-0030	100% Design Submission - Contract CH057D		30-Dec-15	57
<b>CH057E: Harold Catenary Work</b>				
CH057E-8360	CH057E Advertise Date	26-Nov-15		19
CH057E-8380	CH057E - Bid Due Date		17-Dec-15	19
<b>FHL01: Harold Stage 1 - LIRR F/A</b>				
FHL01-1150	Complete Trough H2 to H3 (Track A)		29-Dec-15	56
<b>FHL02: Harold Stage 2 - LIRR F/A</b>				
FHL02.MS.00035	MS - Cutover H3 CIL (2E)		15-Nov-15	30
FHL02-CSR160	H3 Cutover w/ Civil Speed Enforcement		15-Nov-15	30
FHL02-CSR290	Ready to start testing/Revision - (H5/H6/Location 30)		29-Jan-16	37
FHL02.CI.00065	Deliver H2 CIL		30-Dec-15	98
FHL02-3190	Ready to Demo Rack at Woodside		30-Nov-15	35
FHL02-3290	Ready to Install Location 30 CIL		8-Jan-16	35

## **Project Critical Path:**

Table 2-3, below shows ESA critical path and its contingencies for three different RSDs.

**Table 2-3: ESA Critical path and its contingencies for 3 RSDs**

<b>Activity Name</b>	<b>Original Duration</b>	<b>Start</b>	<b>Finish</b>
CM007 Contract	1054	06-Mar-15 A	19-Apr-19
IST Integrated System Testing (PART OF CS179)	153	19-Apr-19	26-Nov-19
Startup/Testing/Commissioning/Revenue Service	1113	27-Nov-19	13-Dec-22
<b>Early Revenue Service Date</b>			<b>25-Mar-20</b>
ESA IST Contingency 1 (IST Completion Contingency to LIRR)	170	27-Nov-19	14-May-20
Stakeholder agreed additional IST Contingency 2 (5 months)	154	15-May-20	15-Oct-20
Completion of Integrated System Testing (With Contingency)	0		15-Oct-20
<b>Target Revenue Service Date</b>			<b>12-Feb-21</b>
ESA Program Schedule Contingency	365	16-Oct-20	15-Oct-21
Stakeholder agreed additional Program Contingency (10 months)	304	16-Oct-21	15-Aug-22
ESA Project Substantial Completion for LIRR Final 3 Months	0		15-Aug-22
ESA Planning Contingency Ready for LIRR Final 3 Months Period	30	16-Aug-22	14-Sep-22
LIRR Final 3 Months Period	90	15-Sep-22	13-Dec-22
LATE - Begin LIRR Revenue Service To GCT	0		13-Dec-22
<b>Late Revenue Service Date</b>			<b>13-Dec-22</b>

For the immediate future, the Harold program work schedule remains independent from the Manhattan ESA work schedule and will remain so until the Tunnel B/C cutover, which is presently scheduled for May 2019. The ESA critical path for Harold work includes 55 separate activities that lead to the completion of Harold, and includes several intermediate activities which are predecessors to the Tunnel B/C cutover.

**Schedule Contingency:** IPS #72 is based on an RSD of December 2022 and has multiple levels of contingency. The PMOC's schedule shows that ESA has 365 days of contingency for a December 2023 RSD. The PMOC had projected a three-month contingency (from 2Q2016 to 3Q2016) that would be used for any of the following conditions:

1. Delay in Final Completion of Contract CM005. This contract is on schedule for a Final Completion in 1Q2016. This is not expected to be an issue.
2. Delay in Contract CM006, for which its MS #2 completion has been projected for 1Q2016. The PMOC estimates a three-month delay in this contract that would move completion of MS #2 into 2Q2016.
3. Lack of funding availability for Contract CM007. To date, ESA does not have approved funding available from the MTACC's next capital program. The PMOC's analysis of CM007 issues has indicated that ESA will not meet its projected NTP date of 1Q2016,



but rather the PMOC's forecast date of 3Q2016 (which includes 3 months of contingency]

### 3.0 COST DATA

**Funding:** The MTA funding request for the 2015-2019 Capital Program was submitted to the NYS Capital Program Review Board (CPRB) in September 2014. ESA will need to obtain funding from this program to award all the options in the CS179 contract and to award the CM007, CQ033, and CH058 contracts. The \$10.178 billion (not including the \$463 million Rolling Stock Reserve) budget presented to the Capital Program Oversight Committee (CPOC) in June 2014 will make the need for additional funding even greater. Until new funding is provided, the project has a funding shortfall of approximately \$2.6 billion, and is part of the unfunded MTA Budget. In late October 2015, the MTA presented a \$29 billion program to its Board for the 2015 – 2019 funding cycle. Regardless of this, the CS179 options that were due to be exercised in early November 2015 will still need to be deferred. Final details are not yet available.

**Budget/Cost:** The ESA September 2015 Progress Report shows that the total project progress was 59.2% versus 59.7% planned against the Current Baseline Budget (CBB) of \$10.178 billion. Total construction progress was 59.0% versus 60.0% planned based on the total invoiced amount of construction (details of project budget and expenditures are shown in Appendix B, Tables 2 and 3). The PMOC's review of the Cost Report agrees with the ESA percentage complete. A PMOC review of the ESA Planned Cash Flow Chart shows that it is based on a 2022 completion date rather than ESA's announced target of 2020. As a result, the "Planned Value" of construction will be lower than that required to sustain the current ESA Target completion date at any particular time. Since the 2014 Re-Plan, ESA has only performed at a rate of 84.0% of the projected accomplishments, which, given the above, suggests their actual probabilities to make their RSD even lower.

After discussion at several Monthly Cost Review meetings, the PMOC and ESA established that the ESA Planned Cash Flow Chart is based on expenditure of the full budget, which is not what ESA plans to do. Consequently "pay outs" will continue until all contingencies are spent and will not be related to the Plan or Schedule. The PMOC does not regard that as a proper Cash Flow chart because it shows Planned Progress as lower than it is scheduled to be. The PMOC suggested that ESA update its Cash Flow chart to align it with planned construction progress and completion dates, but, to date, ESA has not yet made these changes.

The current \$10.178 billion budget follows the procedure of assigning a series of separate small contingencies which are not easily distinguishable. This has entailed multiple budget adjustments to date which will continue into the future. This appears to be operationally complex and often makes it difficult for the PMOC to determine the expected and current status of the project and its packages. The PMOC believes that, prior to receipt of the CM007 cost proposals, ESA should determine how it would adjust budgets should the price come in higher than the ESA's budget for CM007. At Cost Review meetings, ESA has stated that it is not planning to show such adjustments for reallocation prior to the opening of the Proposals or even prior to the selection of the Bid for Award. [REDACTED]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
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[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

[Redacted]

[Redacted]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**Change Orders/Budget Adjustments:** The PMT reported that, during September 2015, eight (8) construction change orders over \$100,000 were executed for a total of \$5.28 million. Two (2) MODs of over \$100,000 were executed for the GEC for a total of \$450,000.

#### **4.0 RISK MANAGEMENT**

The last monthly risk meeting held by ESA was in January 2015. Since that time, ESA has not succeeded in addressing the risk topics as they had planned during the subsequent monthly cost and schedule review meetings. In response to the PMOC's request, ESA had planned to resume the dedicated monthly risk meetings in October 2015, but this did not occur because the newly assigned Risk Manager resigned in October 2015. The PMOC is concerned that the risk management area has not been adequately managed since the re-assignment of the previous Risk Manager nearly five months ago.

The Contract CM007 risk workshop was conducted over a two-day period on April 8 & 9, 2015. The preliminary risk report was forecast to be issued by April 28, 2015, but this did not occur. At the FTA/MTACC Executive Meeting on May 21, 2015, the FTA and the PMOC were advised that the distribution of the draft Risk Report was discussed by upper management at ESA-PMT, the MTACC, the MTA, and the MTA President. Because of the very high level of concern about the confidentiality of the risk results, MTA decided to proceed with a very limited internal distribution of the draft Risk Report and a very small group participated in the May 1, 2015, internal briefing. The FTA noted that they and the PMOC had participated in the workshops and requested the opportunity to review the report written by MTACC's risk facilitator. MTACC responded that they would discuss FTA's request with MTA upper management and provide an answer to the FTA. As of October 31, 2015, however, MTACC has not provided the draft risk report.

Based on long standing issues and concerns regarding Amtrak's ability to provide sufficient force account support to the ESA project, especially Electric Traction (ET) resources, ESA completed a Harold schedule re-sequencing in December 2014, also known as "ESA First," that advances work elements required for the new LIRR service to GCT and delays the FRA funded High Speed Rail (HSR) work beyond 2017. This work was also falling behind schedule due to the overall delays to much of the Harold work. On September 16, 2015, FRA approved the MTA generated grant amendment and this will provide the basis to extend the funding.

Regarding risk mitigation as it involves Amtrak review of design submittals and construction plans as well as provision of force account resources necessary for specific ESA construction work and support of ESA third-party contractors, MTACC has opened a new line of communication with Amtrak. On October 2, 2015, the MTACC President, ESA Program Executive and the ESA Harold Manager met with the new Amtrak Chief Engineer and NEC Executive Vice President to review and discuss issues affecting the ESA work in the Harold Interlocking. It is anticipated that meetings will be held as needed going forward. The PMOC

believes that maintaining this line of communication at the upper management level will be effective and is essential to support the remaining ESA work in the Harold Interlocking.

## 5.0 ELPEP COMPLIANCE SUMMARY

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

- **Technical Capacity and Capability (TCC):** The FTA requested MTACC to update its TCC Plan in response to the FTA/PMOC comments that were generated in November 2013 as a result of significant changes in key ESA upper management level positions. The MTACC submitted its revised Technical Capacity and Capability Plan (ESA and SAS) on April 13, 2015. The PMOC returned comments to the FTA on May 7, 2015. The MTACC submitted a revised TCC Plan in response to FTA/PMOC comments on June 12, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and recommended a meeting with MTACC to resolve remaining issues. The FTA subsequently provided MTACC with the evaluation. MTACC responded with a reply on September 24, 2015, that is currently under review by the PMOC;
- **Continuing ELPEP Compliance:** The following ELPEP components continue to need improvement or are deficient: Management Decision; Design Development; Change Control Committee (CCC) Process and Results; Stakeholder Management; Issues Management; Procurement; Timely Decision Making; and Risk-Informed Decision Making; and
- **Project Management Plan:** The PMOC completed its review and evaluation of the MTACC's revisions and responses and submitted its findings to FTA-RII in 4Q2014. The MTACC subsequently submitted a revised Rev. 10 on March 13, 2015, that included updated information on the Change Control Committee. The revised Rev. 10 of the PMP was reviewed by the PMOC against the PMOC's evaluation in 4Q2014. The PMOC continues to coordinate with MTACC arranging working meetings with ESA chapter authors and the corresponding PMOC reviewers to resolve the remaining outstanding FTA/PMOC evaluation comments. Several working meetings have been held since June 2015.

The PMOC notes that, since June 2013, the ESA project has continued to be non-compliant with ELPEP and is not meeting some of the more important requirements of the Schedule Management Plan (SMP) and Cost Management Plan (CMP) sub-plans to the PMP. The PMOC's opinion is that this continues to be a serious deficiency and needs to be resolved as soon as possible. The PMOC's major areas of concern include:

- **Cost/Schedule Contingency:** In November 2014, ESA submitted its initial cost and schedule contingency utilization curves for the new baseline budget and schedule presented to CPOC in June 2014 in order to comply with ELPEP. ESA then stated, however, that it would correct the curves to make them usable by ESA Project Controls staff and acceptable to the FTA and PMOC. The PMOC notes that draft proposed cost and schedule contingency drawdown curves were presented by the MTACC at the December 11, 2014, ELPEP Quarterly Review Meeting. A series of meetings was held to discuss the MTACC drawdown curves and the FTA/PMOC

proposed cost and schedule contingency minimums, the latest occurring on May 21, 2015. There are currently no issues with the FTA schedule contingency minimums but more discussion is required to reach agreement on the cost contingency minimums.

As of October 1, 2015, MTACC submitted two (2) documents that were intended to demonstrate items related to the ESA Cost Contingency Curve basis, however the PMOC has notified MTACC that the actual purposes and meanings of those documents are unclear. The documents, rather than being mutually supportive, appear to be contradictory, and the one that supposedly provides a SCC basis never references SCCs. The PMOC has requested further explanation. More discussion is required to reach agreement on the cost contingency minimums;

- **Schedule Management Plan (SMP):** The ESA project remains non-compliant with requirements for Integrated Project Schedule (IPS) Updating, Forecasting, and Schedule Contingency Management against a current baseline schedule. Given that the new budget and schedule have been put in place, the PMOC expected that the MTACC would start to meet the requirements set forth in its SMP in the above-referenced areas. The revised SMP was submitted on October 26, 2015; and
- **Cost Management Plan (CMP):** The ESA project remains non-compliant with requirements for Project Level EAC Forecasting, Project Level EAC Forecast Validation, and MTACC Cost Contingency Management and Secondary Mitigation. Given that the new budget and schedule were presented to the MTA CPOC in June 2014, these requirements should have been met by now, but MTACC has not made significant progress in this area. MTACC submitted its revised Cost Management Plan (ESA and SAS) on April 13, 2015. The PMOC returned comments to the FTA on May 8, 2015. The MTACC submitted a revised CMP in response to FTA/PMOC comments on June 30, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and recommended a meeting with MTACC to resolve remaining issues. This meeting is expected to be held in November 2015.

**Revisions to the ELPEP Document:** As part of the process of updating the ELPEP document, the PMOC has performed an independent evaluation of the minimum required cost and schedule contingencies going forward. The PMOC's recommendations were presented at several meetings with the MTACC, the last on May 21, 2015. On October 14, 2015, the PMOC provided the FTA and MTACC with an expanded basis for the PMOC's recommended minimum schedule contingencies to RSD. MTACC responded on October 27, 2015, with no exceptions taken to the PMOC proposed minimum schedule contingency values, but MTACC did have comments on certain bases for the PMOC's position. The PMOC will prepare a response. Additional discussion, however, will be required to reach agreement on the cost contingency minimums.

The next ELPEP Quarterly Review Meeting with the MTACC, the FTA-RII, the SAS and ESA projects and the PMOC has been scheduled for January 21, 2016.

## 6.0 SAFETY AND SECURITY

In order to more accurately portray the effectiveness of ESA's current safety efforts, the PMOC initiated use of Table 6-1, below, beginning with its August 2015 Monthly Report. Previously, the PMOC only reported the ESA Lost Time injury ratio as reported in ESA's Monthly Reports. As noted in the table, however, ESA's reported Lost Time injury ratio is cumulative since the beginning of the project. As such, the PMOC believes that there was significant negative history with ESA's injury reporting and that it does not accurately reflect upon its current safety efforts. Table 6-1 indicates that ESA's Safety Program has shown consistently improving results during 2015 and the monthly ratios for both Lost Time and Recordable injuries have been lower (with an anomaly of a 4.29 Lost Time ratio in March 2015) than the BLS average injury ratios used for the year.

**Table 6-1: ESA 2015 Lost Time and Recordable Injury Ratios**

	Lost Time Ratio	Recordable Ratio
2015 BLS Ratio (used by OSHA)	1.80	3.20
ESA September 2015 Ratio	0.79	0.00
ESA CY2015 Ratio	0.90	1.17
ESA Reported Ratio (Cumulative since beginning of project)	2.03	N/A

Additionally, the ESA PMT did not report any significant security issues in its September 2015 Monthly Progress Report.

## 7.0 ISSUES AND RECOMMENDATIONS

**Design:** The PMT design management team needs to focus on achieving intermediate milestones in a timely fashion and working closely with the GEC to facilitate finalization of the scope of work for the remaining procurement and construction packages. The continued shifting of scope between packages and the creation of new packages has made finalizing design documents and drawings very challenging and time consuming. The PMOC recommends that the PMT develop a design milestone tracking sheet for the remaining design work on the project.

**Procurement:** The lack of stability in the contracting strategy and Contract Packaging Plan remains a concern. The scope shifting among different packages makes 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. The current CPP update (revision 10.1) was submitted on October 30, 2015 and is currently under review by the PMOC. ESA should make an effort to adhere to the current version of the CPP and minimize shifting scope for the remainder of the project.

**Contract CS084:** The PMOC is concerned about the continuing delay in negotiating and approving the extra work effort to provide permanent signal power to various signal huts in the Harold Interlocking area. While the contractor has indicated that this work will take three months to complete once started, that projection could now be impacted by any adverse winter weather that may occur. It is imperative that this work begin as soon as possible to ensure that enough contingency is in the schedule to ensure that the March 2016 completion date is met.

**Contract CS179:** The PMOC continues to remain concerned that the backlog in overdue submittal reviews has not been significantly reduced and sustains its recommendations that ESA, the GEC, and the contractor work together to improve the review process. Although the ESA PMT had the GEC increase its review staff in 3Q2015 to reduce the submittal review backlog, the backlog continues to be an issue impacting efficient design and construction progress. This situation has already delayed completion of the contractor's design by 4 months to July 2016. ESA has acknowledged that continuing delays to the design completion may impact the IST and potentially delay completion of the Integrated Systems Testing. The PMOC is very concerned that the contractor does not yet have a formally approved resource loaded baseline schedule with almost 28% of the contract time expended. Both ESA and the contractor acknowledge that contract performance is dependent on successful and timely interfaces with Contracts CM006, CM007, CM014B, CQ033, and the other systems contracts. This dependency will require that the contractor closely coordinate its work efforts and schedules with all of the contractors. Achieving successful coordination across multiple contracts requires an accurate and well-integrated schedule showing all these interfaces. Currently, ESA reports that the PMT is working with the contractor to finalize a baseline schedule that reflects current progress, is fully and properly resource loaded, and completes all contract work, including IST, within the contract time. The CS179 contractor did not meet its deadline of October 31, 2015, to submit a revised baseline schedule that the ESA PMT could approve.

**Contract CH057A:** The contractor's poor cumulative actual construction progress versus planned is largely due to lack of track outages required to install secant piles adjacent to active operating Track Line 4 in Harold Interlocking and continued inconsistent Force Account support. The CH057A contractor continues to share limited Amtrak Force Account resources with Contracts CH053, CH054A, and other ESA construction (e.g. "H3" cutover pre-testing). During 3Q2015 and into October 2015, much of the Force Account resources were dedicated to construction and pre-testing of LIRR's "H3" CIL, which is scheduled to be cutover in November 2015. The CH057A contractor had earlier planned to deliver the "jacked box" tunnel shield to excavate the westbound Bypass Tunnel (WBT) in November 2015, but, due to the delays discussed, the tunnel shield will not be delivered until 1Q2016. Because CH057A competes with CH053 and CH054A for a fixed amount of Force Account resources, the PMOC recommends that ESA prioritize the Substantial Completions of the CH053 and CH054A contracts so that the CH057A contract is the only contract that Force Account needs to support.

**Contract CM006:** The contractor continues to trend behind their second recovery schedule. Currently, the contractor is now over 80 calendar days late for Milestone #2, which leads to a hand-off to the CM007 contractor. The MTACC has acknowledged that, despite mitigations that are in progress, recovery may not be achievable. There is also concern because Substantial Completion of this contract is a key hand-off milestone for the CM007 contract. The inability to successfully execute both the first and second recovery schedule may impact the CM007 contract and cause a delay to the start of some of the CM007 work or create a change from full access to the caverns to incremental access over a period of time, with resulting cost and schedule consequences. The PMOC recommends that the ESA PMT and the contractor develop a realistic re-schedule that properly reflects the contractor's capability and capacity to perform its remaining work.

**Contract CM007:** The PMOC is concerned that the technical/schedule proposal due date was delayed a total of 4.5 months and the cost proposals were delayed an additional 3 weeks. This

significantly reduces the time for negotiations on this very large contract that is currently on the program schedule critical path. MTACC will be challenged to award this contract as planned before December 31, 2015. Based on the MTACC's past schedule performance for negotiated procurements, it is the PMOC's opinion that this contract will not be awarded until 1Q2016, at the earliest, and the award date could stretch into 2Q2016. Because the program critical path includes a significant portion of the CM007 work, the PMOC is concerned about the schedule impacts of a delayed award and NTP for the CM007 contract.

**Project Funding:** As stated in the Risk Management section below, the PMOC believes that the timing and availability of funding presents a significant schedule risk to the project. The timing of funding has already impacted the CS179 package (that was restructured with options due to funding availability) and the CM007 procurement that has been delayed to the 4Q2015 for award and Notice to Proceed. As of October 31, 2015, MTACC has not received a commitment from the NYS Capital Program Review Board to provide the funding that will permit the MTACC to award the CM007 contract in 2015 or exercise the Contract CS179 three options that are due on November 6, 2015. The PMOC does note that the MTACC is fully aware of this situation and the critical role that funding serves in the successful completion of the project. MTACC continues to work closely with the MTA finance group and keeps the FTA up-to-date on developments and issues. The PMOC previously recommended to the ESA Project Controls Group that a funding needs projection be developed along with the cash flow projection to assess the risks to the project should funding not be available in the necessary time frame. ESA has the information to develop a basic funding needs projection and has been working with the PMOC to develop a forecast tool to assist in evaluating funding risk at a more detailed level.

**Project Budget:**

[REDACTED]

The PMOC notes that the project's use of unallocated cost contingency continues to be significant, and the rate at which the Forecast cost increases continues to accelerate. [REDACTED]

[REDACTED]

**Project Schedule:** The PMOC is concerned about the overall state of the ESA schedule, specifically Manhattan and Systems contracts. ESA does not follow its Schedule Management Plan in a number of areas. The SMP update to reflect candidate revisions was just submitted in October 2015. Furthermore, the PMT has not yet developed a plan to mitigate its problems with CM007 schedule logic. Lastly, Contract CS179 has not yet provided an acceptable resource loaded baseline schedule despite the fact that it has been 19 months since its contract NTP.

**Risk Management:** In the PMOC's opinion, funding availability continues to be a significant risk on the ESA project. Funding uncertainty has already resulted in the PMT's delay of the CM007 contract award until 2016 due to budget constraints and the restructuring of the CS179 contract by splitting it into a base contract with seven options, based predominately on access restraints imposed by the CM006, CM007, and CM014B packages. This will significantly increase the construction contract interface risks. This segmentation of construction packages has created multiple inter-contract interfaces and milestones. In the PMOC's opinion, the



probability of successfully achieving all of them is low, and leads to the possibility of a ripple effect of delays and coordination difficulties between contracts. There is very limited opportunity for the contractors to make up time lost to interface delays due to work site time and access constraints. Should delays start to accumulate, recovery will likely not be possible. Managing inter-contract handoffs and interfaces will be challenging and represents significant MTACC-retained risks. Some of the schedule risks will be realized now because funding is not in place to award the three options in the CS179 contract package scheduled for November 6, 2015. Access Restraints in the CS179 contract are correlated to the options in the Contract and the CS179 contract will also have multiple interfaces with the future CM007 contract. 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 the MTACC on the completion of the work in Manhattan, especially the construction and testing interface management for the systems work. When combined with the extensive scope re-configuration changes associated with the Harold Interlocking work, the PMOC believes that this may create significant changes to the overall project risk profile.

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

- Program Funding;
- Successful execution of dozens of hand-off interfaces across multiple contracts;
- Contractor access and work area coordination in Manhattan;
- Lack of approved schedule on the CS179 contract;
- Duration of integrated systems testing;
- Continued availability of adequate Amtrak and LIRR force account resources; and
- Continued availability of required track outages in Harold Interlocking.

The PMOC notes that the MTACC has actively engaged Amtrak to develop some specific mitigations for the last two risks and continues to work on strategies for mitigating many of the other identified risks. Many external stakeholder issues with Amtrak and LIRR will remain beyond the MTACC's direct control, however, and this is likely to complicate problem resolution essential to completion of the project.

## **APPENDIX A - ACRONYMS**

AFI	Allowance for Indeterminates
ARRA	American Recovery and Reinvestment Act
BLS	Bureau of Labor Statistics
BOH	Back of House
C&S	Communication and Signals
CCC	Change Control Committee
CCM	Consultant Construction Manager
CIL	Central Instrument Location
CM	ESA Construction Manager assigned to each contract
CMP	Cost Management Plan
CMU	Concrete Masonry Unit
CPOC	Capital Program Oversight Committee
CPRB	Capital Program Review Board
CPP	Contract Packaging Plan
EAC	Estimate at Completion
ELPEP	Enterprise Level Project Execution Plan
ERT	East River Tunnel
ESA	East Side Access
ET	Electric Traction
FA	Force Account
FFGA	Full Funding Grant Agreement
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GCT	Grand Central Terminal
GEC	General Engineering Consultant
HSR	High Speed Rail
IEC	Independent Engineering Consultant (to MTA)
IFB	Invitation for Bid
IPS	Integrated Project Schedule
IST	Integrated System Testing
LIRR	Long Island Rail Road

MOD	Contract Modification
MNR	Metro-North Railroad
MTA	Metropolitan Transportation Authority
MTACC	Metropolitan Transportation Authority Capital Construction
N/A	Not Applicable
NTP	Notice to Proceed
NYAR	New York and Atlantic Railroad
NYCT	New York City Transit
PAC	Pneumatically Applied Concrete
PDR	Preliminary Design Review
PEP	Project Execution Plan
PMOC	Project Management Oversight Contractor (Urban Engineers)
PMP	Project Management Plan
PMT	ESA Project Management Team
PQM	Project Quality Manual
PWE	Project Working Estimate
QA	Quality Assurance
RAMP	Real Estate Acquisition Management Plan
RFI	Request for Information
RFP	Request for Proposal
RMP	Risk Management Plan
ROD	Revenue Operations Date
ROW	Right of Way
RSD	Revenue Service Date
SC	Substantial Completion
SCADA	Supervisory Control and Data Acquisition
SCC	Standard Cost Category
SMP	Schedule Management Plan
SMU	Snow Melter Unit
SSMP	Safety and Security Management Plan
SWO	Stop Work Order
TCC	Technical Capacity and Capability

WBY  
YSB

Westbound Bypass Tunnel  
Yard Services Building

**APPENDIX B – TABLES**

**Table 1: Summary of Critical Dates**

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

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

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

**Table 2: Project Budget/Cost Table**

	FFGA			MTA's Current Baseline Budget CBB		Expenditures	
	(Millions)	(% of Grand Total Cost)	Obligated	(Millions)	(% of Grand Total Cost)	(Millions)	(% of CBB)
Grand Total Cost	\$7,386	100.00%	\$4,724	\$11,214.0	100.00%	\$6,496.0	57.93%
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%	\$5,878.4	57.76%
Federal Share	\$2,683	36.30%	\$1,148	\$2,699.0	24.07%	\$2013.9	74.62%
5309 New Starts share	\$2,632	35.60%	\$1,098	\$2,436.6	21.73%	\$1,751.8	71.90%
Non New Starts grants	\$51	0.70%	\$50	\$67.0	0.60%	\$66.7	99.55%
ARRA	0	0.00%	0	\$195.4	1.74%	\$195.4	100.0%
Local Share	\$3,667	49.60%	\$2,959	\$7,479.0	66.69%	\$3,864.5	51.67%

**Table 3: Project Budget and Invoices as of September 30, 2015**

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (Aug 2015)	Actual Awards (Aug 2015)	Paid to Date (Aug 2015)	Actual % Budget Paid
Construction	\$7,379,296,706	\$7,435,879,658	\$5,455,302,940	\$4,248,230,771	57.13%
<b>Soft Costs Subtotal</b>	<b>\$2,798,474,304</b>	<b>\$2,741,891,352</b>	<b>\$1,687,197,406</b>	<b>\$1,630,212,666</b>	<b>59.46%</b>
Engineering	\$720,615,810	\$720,615,810	\$669,543,681	\$652,310,212	90.52%
OCIP	\$282,613,620	\$282,613,620	\$210,470,653	\$209,961,617	74.29%
Project Mgmt.	\$972,168,644	\$972,168,644	\$691,221,439	\$653,594,567	67.23%
Real Estate	\$182,076,230	\$182,076,230	\$115,961,633	\$114,346,270	62.80%
Rolling Stock	\$202,000,000	\$202,000,000	\$0	\$0	0.00%
<b>Project subtotal w/o Financing &amp; RI</b>	<b>\$10,177,771,010</b>	<b>\$10,177,771,010</b>	<b>\$7,142,500,346</b>	<b>\$5,878,443,437</b>	<b>57.76%</b>

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

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

Standard Cost Category (SCC) No.	FFGA SCC baseline (YOE \$) M	June 2014 Re-Plan (YOE \$)M	August 2015 SSC (YOE \$) M	September 2015 SSC (YOE \$) M	September 2015 % of Re-Plan	Aug'15 to Sept '15 Change \$M	CBB Variance from FFGA %
10	1,989	3,405	3,433	3,421	100.47%	12	72.60%
20	1,169	2,238	2,339	2,339	104.51%	0	100.09%
30	356	474	474	474	100.00%	0	33.15%
40	205	611	599	593	97.05%	6	189.27%
50	619	606	563	565	93.23%	-2	-8.72%
60	165	220	219	219	99.55%	0	32.73%
70	957	210	210	210	100.00%	0	-78.06%
80	1,184	1,975	1,975	1,975	100.00%	0	66.81%
█	█	█	█	█	█	█	█
<b>Subtotal</b>	<b>6,813</b>	<b>10,178</b>	<b>10,178</b>	<b>10,178</b>	<b>100.00%</b>	<b>0</b>	<b>49.39%</b>
100	1,036	1,036	1,036	1,036	100.00%	0	0.00%
<b>Total Project Cost (10 – 100)</b>	<b>7,849</b>	<b>11,214*</b>	<b>11,214*</b>	<b>11,214*</b>	<b>100.00%</b>	<b>0</b>	<b>42.87%</b>

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

Note: Sum of rounded values for current month is less than actual summed value

Reasons for Changes to SCC Codes:

10: \$12 million decrease due to the pending award of CH057, funding the overrun in FHL01 and issue changes that affect contingency.

40:\$6 million decrease due to the pending award of CH057

50: \$2 million increase due to the pending award of CH057, funding overrun in FHL01 and issue changes that affect contingency.



**Table 5: Quarterly ESA Planned Cash Flow- Actuals to Date and Actuals Remaining (as of 3Q2015)**

Quarter/year	Construction \$(000)	Engineering \$(000)	OCIP \$(000)	Project Mgmt. \$(000)	Real Estate \$(000)	Rolling Stock \$(000)
<b>Paid To Date</b>	<b>3,660,194,771</b>	<b>646,377,892</b>	<b>155,604,955</b>	<b>580,041,291</b>	<b>112,634,547</b>	<b>0</b>
<b>Remaining</b>	<b>3,719,144,273</b>	<b>74,237,918</b>	<b>127,008,665</b>	<b>392,127,353</b>	<b>69,441,683</b>	<b>202,000,000</b>
3Q2014	209,340,620	-3,311,163	4,774,951	16,667,454	0	0
4Q2014	168,280,817	-3,290,689	4,774,951	16,667,454	75,948	0
1Q2015	134,568,200	-3,183,384	4,619,246	16,123,950	4,506,241	0
2Q2015	147,357,357	-3,290,689	4,774,951	16,667,454	4,658,137	0
3Q2015	169,688,509	-3,290,689	4,774,951	16,667,454	4,658,137	0
<b>Remaining Planned</b>	<b>2,889,908,770</b>	<b>90,604,532</b>	<b>103,289,617</b>	<b>309,333,586</b>	<b>55,543,220</b>	<b>202,000,000</b>
<b>Remaining Actual</b>	<b>3,131,108,273</b>	<b>68,305,598</b>	<b>72,652,003</b>	<b>318,574,077</b>	<b>67,729,960</b>	<b>202,000,000</b>
4Q2015	201,239,698	-3,290,689	4,774,951	16,667,454	4,658,137	0
1Q2016	193,275,933	-3,219,153	4,671,147	16,305,118	4,556,873	0
2Q2016	180,854,738	-3,290,689	4,774,951	16,667,454	4,658,137	8,666,545
3Q2016	181,988,455	-1,983,850	4,774,951	16,652,320	4,658,137	13,070,855
4Q2016	214,173,807	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
1Q2017	210,556,624	6,509,009	4,619,246	15,450,479	4,506,241	12,644,631
2Q2017	199,737,103	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
3Q2017	189,382,506	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
4Q2017	182,084,699	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
1Q2018	174,210,593	6,509,009	4,619,246	15,450,479	4,506,241	12,644,631
2Q2018	170,524,739	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
3Q2018	168,497,619	6,728,414	4,774,951	15,971,281	4,658,137	14,014,767
4Q2018	155,245,094	6,728,414	4,774,951	15,971,281	50,632	14,014,767
1Q2019	148,441,548	6,509,009	4,619,246	15,450,479	0	13,557,764
2Q2019	110,893,994	6,728,414	4,774,951	15,971,281	0	14,014,767
3Q2019	93,559,944	6,728,414	4,774,951	15,971,281	0	14,014,767
4Q2019	71,649,848	6,728,414	4,774,951	15,971,281	0	14,014,767
1Q2020	20,704,406	6,582,144	4,671,147	15,624,080	0	5,043,553
2Q2020	11,682,057	6,728,414	4,774,951	15,971,281	0	943,912
3Q2020	7,573,078	2,267,183	4,947,825	5,381,627	0	0
4Q2020	2,750,374	0	5,035,679	0	0	0
1Q2021	881,913	0	3,256,771	0	0	0
<b>BL Subtotal</b>	<b>3,719,144,273</b>	<b>74,237,918</b>	<b>127,008,665</b>	<b>392,127,353</b>	<b>69,441,683</b>	<b>202,000,000</b>



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

Standardized Cost Category	FFGA	May 2012 Re-Baseline	June 2014 Re-Plan	Awarded Value (3Q2015)	Paid To Date (3Q2015)
10- Guideway & Track Elements	\$1,513,998	\$2,943,165	\$3,405,463	\$2,721,155	\$2,108,505
20- Stations, Stops, Terminals, Intermodal	\$1,168,655	\$1,513,998	\$2,238,235	\$1,629,710	\$1,171,491
30- Support Facilities, Yards, Shops, Admin Buildings	\$356,264	\$384,583	\$474,177	\$209,999	\$205,628
40- Site Works and Special Conditions	\$205,105	\$491,341	\$610,570	\$432,778	\$435,339
50- Systems	\$619,343	\$698,296	\$605,592	\$416,503	\$284,396
60-ROW, Land, Existing Improvements	\$165,280	\$203,639	\$219,397	\$153,283	\$151,667
70- Vehicles	\$493,982	\$674,372	\$209,938	\$7,838	\$5,549
80- Professional Services	\$1,184,000	\$1,648,606	\$1,975,398	\$1,571,236	\$1,515,866
<b>Sub-Total</b>	<b>\$6,349,900</b>	<b>\$8,708,000</b>	<b>\$10,177,771</b>	<b>\$7,142,502</b>	<b>\$5,878,441</b>
Estimated Financing Cost	\$1,036,100	\$1,116,000	\$1,036,000	\$617,607	\$617,607
<b>Total</b>	<b>\$7,386,000</b>	<b>\$9,824,000</b>	<b>\$11,213,771</b>	<b>\$7,760,109</b>	<b>\$6,496,048</b>

**Table 7: ESA Core Accountability Items**

Project Status:		Original at FFGA	Current*	ELPEP **
Cost	Cost Estimate	\$7.368 billion	\$10.178 billion	\$8.119 billion
Schedule	RSD	December 31, 2013	December 2022	April 30, 2018
Total Project Percent Complete	Based on Invoiced Amount	59.2 (ESA Figure)		
	Based on Earned Value $\pm$	0.84 (PMOC Calculation)		
Project Performance Rate (Since 2014 ESA "Re-Plan")				
Major Issue	Status		Comments	
Major Procurements Delays	<p>CM014B was advertised in May 2014; ESA did not make its recommendation to award forecast date of November 2014, and did not make its last forecast date of November 2014 for advertising CM007. The proposal due date will be extended a fourth time from Aug 4, 2015, to "mid-September" 2015, and the cost proposals are due 3 weeks later during the first week of October 2015, and the CM014B Award and NTP were issued February 2, 2015. Award of CM007 is contingent upon funding availability.</p>		<p>PMOC remains concerned about the potential project schedule impacts of procurement delays on these two packages, CM014B and CM007, since they are on the critical and near critical paths for the project.</p>	
Project Schedule	<p>The MTACC presented a new baseline schedule to the MTA CPOC in June 2014, with an RSD in December 2022. This schedule incorporates 22 months of Program level contingency. It should be noted that there have been significant changes in elements comprising the baseline schedule, including full re-sequencing of the Harold work and restructuring of the CM007 package.</p>		<p>CM006 has experienced significant delays and has yet to meet the approved recovery schedule production targets. The PMOC is also concerned about the ESA project's inability to develop approved baseline schedule for the CS179 contract, as it is critical to the timely completion of the project.</p>	
Harold Re-planning	<p>The Harold baseline schedule that formed the basis of the Program schedule presented to the CPOC in June 2014 is no longer valid. Based on current issues with slow progress and inadequate force account support, ESA completed a Harold schedule re-sequencing in December 2014, also known as "ESA First," that advances work elements required for the new LIRR service to GCT and delays the FRA funded High Speed Rail Work beyond 2017.</p>		<p>Work on Harold Interlocking is subject to influences outside of the control of ESA. The FRA and Amtrak need to accept the most recent Harold re-sequencing plan completed in December 2014. Should issues with the level of Amtrak force account support return, this could further delay the Harold Interlocking work.</p>	

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

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