

PMOC MONTHLY REPORT

East Side Access (MTACC-ESA) Project

Metropolitan Transportation Authority

New York, New York

Report Period July 1- July 31, 2015



PMOC Contract No. DTFT6014D00017

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

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Length of time on project: Six 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 June 2015, the MTACC reported that the overall engineering effort was 98.7% complete, the same as May 2015, based on Earned Value for Design Deliverables, compared with a planned status of 100.0%. The MTACC's Cost Report shows that 90.4% of the overall "EIS and Engineering" category has been invoiced and 90.5% of the "Design" category (including Design Settlement) has been invoiced, each approximately 0.2% less than May 2015.

Design work on the new, stand-alone package CH061A (completion of Queens Tunnels "A" and "D") continued. The 90% review submission has been completed and was submitted to the LIRR for review on July 9, 2015. The 100% review submission is scheduled for completion on August 6, 2015.

For the 48th St. Entrance, the MTA Board has approved the design agreement with the building owner. The building owner will provide the designs for the relocation of the existing interior utilities as well as some limited structural design. The scope of work to repackage CM015 and CM015A can now be completed and the Proposed Change Order will be revised and finalized

based on the agreements reached during negotiations between the building owners and the MTACC.

The anticipated advertise date for the CH057 package was previously forecast for July 2014 with NTP forecast for September 2014. The forecast advertise date was not met. Completed bid package documents were issued by the GEC on February 27, 2015. The package is now structured with 15 options. The contract was advertised on March 26, 2015, and the bid opening date had been extended twice from May 19, 2015, to June 18, 2015, then to July 9, 2015, when bids were opened.

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.

On the Mid-Day Storage Yard Contract, CQ033, resolution is needed 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. The 100% design submittal for CQ033 was forecast for delivery in mid-June 2015, but the GEC was not able to make this submittal due to a large number of ESA comments which it is not able to properly address. Additionally, ESA continues to await 90% design comments from the LIRR. The advertise date for CQ033 is currently forecast for 1Q2016.

A separate procurement package, VQ033, that will provide the eight CILs for Contract CQ033, is presently scheduled for award in late 3Q/early 4Q2015. The GEC continues work on the VQ033 procurement package. The 100% design submission was made on June 9, 2015, and the cost estimate was submitted on July 13, 2015.

b. Procurement

As of the end of June 2015, the ESA Cost Report showed that total procurement activity for the project was 69.4% complete, with \$7.068 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 will be extended a fourth time from August 4, 2015, to "mid-September" 2015, and the cost proposals are due 3 weeks later during the first week of October 2015. The GEC has been issued change orders to delete the following work scope from this package: 45th St. elevators and GCT Station Cavern undercarriage deluge system.



For Contract CS086, ESA Tunnel Signal Installation, the GEC design has been completed but now needs to be revised to incorporate the requirements of Positive Train Control (PTC). The Proposed Change Order is currently being developed by the GEC.

c. Construction

The PMT reported in its June 2015 Monthly Progress Report that total construction progress reached 56.9% complete versus 57.8% planned. The PMOC's calculations based on data included in the ESA Cost Report (56.9%) agree with the ESA complete percentage.

CM005 - Manhattan South Structures: The Estimate at Completion for CM005 increased slightly during June 2015 to \$241,668,530 due to inclusion of pending and potential contract modifications. The MTACC forecast for Substantial Completion remained at February 6, 2016. Actual construction progress for June 2015 was 4.3% versus 4.3% planned. Cumulative progress through June 30, 2015, was 83.8% actual versus 83.7% planned.

Construction Progress: During July 2015, the CM005 contractor continued waterproofing installation, placement of invert slab concrete, and archway overbreak repairs in Tunnel #s 301, 302, 303, and 304. The contractor also continued to apply pneumatically applied concrete (PAC) in the archways of GCT 1&2 East and West Wye Caverns and continued to install waterproofing and make archway overbreak repairs at the 38th St. Vent Facility (TT1). The contractor completed placement of concrete for the lower level exterior walls in the Eastbound Cavern in July 2015 and continued to place rebar along the exterior walls in the Westbound Cavern.

CM006 – Manhattan North Structures: The Estimate at Completion for CM006 decreased slightly to \$318,822,750 during June 2015 due to a re-forecast of pending and potential contract modifications. The MTACC forecast for Substantial Completion remained at December 30, 2016. Actual construction progress for June 2015 was 3.8% versus 4.6% planned. Cumulative progress through June 30, 2015, was 30.3% actual versus 45.4% planned.

Construction Progress: During July 2015, the CM006 contractor continued concrete repairs and drainage work at the 63rd St. structures. As part of its Back of House (BOH) contract amendment, the contractor continued to pour mezzanine level concrete exterior walls in the Eastbound Cavern and lower level exterior walls in the Westbound Cavern. The contractor also continued to place archway shotcrete (PAC) in the GCT 4 East Wye Cavern and completed archway PAC placement in Tunnel #s 401, 402, and Cross Passage #7. The contractor completed waterproofing and began to place archway PAC in Tunnel EB2 (the lower level eastbound tunnel). The contractor also placed the intermediate level concrete slab and exterior walls on the east side of the 50th St. Vent Facility and, continued to place concrete interior walls on the east side of the 55th St. Vent Facility. The contractor also continued overbreak repair and application of smoothing concrete on the invert of the WB3 Tunnel (the lower level westbound tunnel), and began to construct bench walls in the GCT 4 West Wye Cavern and Tunnel #s 403 and 404.

CM013A – 55th Street Vent Facility: The MTACC reports that through June 30, 2015, the Estimate at Completion (EAC) for CM013A was reduced slightly to \$57,187,787 from the previous \$57,209,244. The current MTACC forecast for Substantial Completion is August 19, 2015. The MTACC, however, in its June 2015 Monthly Report, forecasts that Substantial Completion will be further extended until October 2015 due to the delays discussed below. Actual construction progress for June 2015 was 4.2% versus 5.4% planned. Through June 30, 2015, cumulative progress was 88.6% actual versus 98.4% planned.

Construction Progress: During July 2015, restoration of the north sidewalk pavement was completed over the East Plenum between lines 16 and 21, ventilation grating was installed, and

public access was restored. Over the West Plenum, construction of the north and south side street ventilators was completed. At the top of the shaft/central plenum, mass backfilling continued over the plenum roof. Installation of ConEd duct conduits continued and construction of the combined sewer was completed. Removal of street deck beams continued and construction of the north and south ventilators was on-going. Preparations began for installation of the Bilco hatch. In the shaft, acoustical insulation application continued to the walls and floors. In the cavern, installation of floor sealer was completed and punchlist work was ongoing. Work progress continues to be slowed because backfilling between the plenum roof and the street level is being done manually, ConEd's support for the project is inconsistent, and the hoisting system between the upper and lower fan rooms needs to be redesigned.

CM014A – Concourse and Facilities Fit-Out Early Work: The MTACC reports that through June 30, 2015, the Estimate at Completion for CM014A remained at \$58,900,872. The MTACC's forecast for Substantial Completion remained at September 7, 2015. As previously reported by the PMOC, the MTACC completed an acceleration change order for the contractor to complete base contract work by July 2, 2015, when the CM014B access restriction to the work area expired. The Project Office has reported to the PMOC that, as of the date of this report, this contractor has still not lived up to its acceleration completion date and finalization of contract work continues. This, combined with the ConEd energization of the system, may add additional extension to the forecast Substantial Completion date. Actual construction progress for June 2015 was 0.4% versus 0.0% planned. Cumulative progress through June 30, 2015, was 92.1% actual versus 92.6% planned.

Construction Progress: The installation of ConEd feeds to the new manholes in the GCT garage is complete. Installation of the fire stopping continues with bi-weekly quality inspections. The contractor completed painting of the concrete masonry unit (CMU) walls throughout. Ductwork and piping installation is being completed in all zones. Sprinkler/standpipe installation nears completion in Zone #s 4 and 5. The 600V cable installation/terminations nears completion in all zones. Installation and testing of the FM200 fire suppression system and testing continued. Branch feeder and conduit installation is ongoing throughout. SCADA installation continues in Zone #s 1, 2, and 3. Installation of the Trapped Key Interlocking hardware (Kirk Key) is ongoing throughout. Installation of batteries and battery room exhaust continued in Zone #2. The contractor began demobilization.

CM014B – Concourse and Facilities Fit-Out: The MTACC reports that through June 30, 2015, the Estimate at Completion for CM014B increased to \$433,866,135 from the previous \$433,326,735 due to pending contract modifications. The Substantial Completion date remained August 18, 2018. The MTACC reports that the contractor's June 2015 schedule update shows a "non-excusable" 28 day delay for the work in East 48th St., impacting Milestone #5A (Complete all work at the East 48th St. Entrance). The MTACC reports that through June 30, 2015, the actual cumulative progress was 1.8% versus 1.3% planned.

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

Madison Yard/Concourse: The contractor continued to excavate for duct banks and piping in Zone #s 1 and 2 and began layout and installation for east under-slab piping.

Biltmore Room Connection: The contractor continued to install shoring for Escalator #01 along with sand wall and mud slab placement for Escalator #02.

Dining Concourse Connection: The focus of the work is the demolition of Platform J, columns, rock, and shielding and protecting existing and relocated utilities.

East 48th St.: The contractor completed installation of maintenance and protection of traffic (MPT), began trench excavation for the Support of Excavation (SOE), and began mobilization for mini-pile installation.

44th St. Vent Plant: The 44th St. Vent Plant site and MPT has been turned over to the CM014B contractor. Setup for the concrete slickline began.

CS179 – Systems Package 1: Due to the inclusion of pending and potential contract modifications, the Estimate at Completion for CS179 increased again during June 2015 to \$556,594,740. The MTACC forecast for Substantial Completion (SC) remained at November 25, 2019. As the MTACC has yet to approve a baseline schedule for this contract, despite giving Notice to Proceed (NTP) over 16 months ago, no progress curve for CS179 has been generated. Therefore, Actual vs. Planned construction data is not available. However, at the July 2015 CS179 Progress Meeting, it was noted that 10 out of 15 established contract milestones are delayed anywhere from 1 to 7 months. When the PMOC inquired as to the impact these delayed milestones would have, especially the 7-month delay in Milestone #1, the contractor stated that it is holding the SC date while it reviewed all other work activities.

Design Progress: During July 2015, the contractor advised that it submitted preliminary designs for the Centralized Train Control (CTC) and Supervisory Control and Data Acquisition (SCADA) systems and that the designs for Fire Life Safety System (FLSS), Building Management System (BMS), and Voice Communications System (VCS) were in progress. A Preliminary Design Review of the VCS with the LIRR is scheduled for early August 2015. The ESA PMT acknowledged at the July 2015 Progress Meeting that the backlog in ESA's review and approval of contractor design submittals remains an issue and advised that the GEC added staff to focus on reducing the backlog.

Construction Progress: During July 2015, the CS179 contractor continued to install conduit and utility duct in the Roosevelt Blvd. and Vernon Ave. Vent Structures and the B-10 Substation. The first pass of conduit between the B13 and Yard Lead locations was completed in July 2015, while concrete work at the 2nd Ave. Vent Structure and the temporary power installation in Madison Yard continued.

CS084 – Traction Power Substations: As of the end of June 2015, the Estimate at Completion and the contract budget for CS084 remained at previously reported levels of \$71,248,884, and \$78,373,772, respectively. The MTACC's and the contractor's forecasts for Substantial Completion are both, December 2019. As the MTACC has yet to approve a baseline schedule for this contract, despite giving Notice to Proceed (NTP) over 9 months ago, no progress curve for CS084 has been generated. Therefore, Actual vs. Planned construction data is not available.

Design Progress: The contractor continued with the transmission of contractual submittals. While there are no significant issues to report at this time on issues related to the submission and approval cycle, the ESA CM did note that this contract uses the same MTA and GEC resources

as those used on the CS179 contract to review documents. The GEC added staff in an effort to ensure the timely review of submitted documentation.

Construction Progress: As of July 31, 2015, the CS084 contractor had not begun any significant construction. However, a \$250,000 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. Another contract modification, or an increase in value of this \$250,000 modification, will be required to authorize the CS084 contractor to install the equipment and electrical line box to meet the August 2015 start and October 2015 completion dates necessary to preclude delays to other contracts.

Queens Contracts:

CQ032 – Plaza Substation and Queens Structures: The Estimate at Completion for CQ032 increased slightly during June 2015 to \$247,868,526 due to a re-forecast of pending and potential contract modifications. The MTACC forecast for Substantial Completion was shortened by 4 days to March 14, 2016. Actual construction progress for June 2015 was 2.6% versus 2.2% planned. Cumulative progress through June 30, 2015, was 83.4% actual versus 88.4% planned.

Construction Progress: During July 2015, the CQ032 contractor completed installation of metal decking on all levels of the Yard Services Building and began concrete placement on the lower level; completed concrete placement of all columns, roof beams, and parapets of the Plaza Vent Facility; completed placement of the concrete slab, continued exterior wall concrete placement, and began structural steel erection for the C07 level of the Early Access Chamber; completed construction of the mechanically stabilized earth (MSE) backfill in the Bellmouth; and began bench wall construction at the B-13 Substation in Tunnel D.

Harold Interlocking:

CH053 Contract – Harold Structures Part 1 and G.0.2 Substation: The Estimate at Completion for CH053 increased slightly to \$294,971,189 during June 2015. The MTACC forecast for Substantial Completion was extended by 2 months to October 12, 2015, due to the contractor's continuing struggles to complete the 12kV traction power supply system, as discussed in the Construction Progress section below. Actual construction progress for June 2015 was 0.4% versus 0.0% planned (the project was supposed to be complete by now). Cumulative progress through June 30, 2015, was 95.8% actual versus 100.0% planned.

Construction Progress: As reported in the June 2015 PMOC Monthly Report, the CH053 contractor discovered defective splices in all three new 12kV traction power circuits between Sub 44 and the Sunnyside Yard Frequency Converter. During its investigation into the root cause of the problem, the contractor determined that it had installed the wrong splice jackets on all 72 of the splices that it made in the new circuits and that they would all have to be replaced. Consequently, no new progress was made on the 12kV system. The contractor ordered the proper splice jackets and anticipates a six-week installation process (2 weeks per circuit) beginning in early August 2015. This has caused the extension in the Substantial Completion date. Otherwise, the contractor continued miscellaneous catenary structure installations; cable terminations and testing at Runs #1 through #4 conduits into G02 Substation; and punchlist repairs in several locations during July 2015.

CH054A – Harold Structures Part 2A: The Estimate at Completion for CH054A increased slightly to \$56,680,016 during June 2015. The MTACC forecast for Substantial Completion was extended by one week to September 14, 2015, because the contractor was not able to secure the necessary track usage to install the last snow melter unit discussed in Construction Progress below. Actual construction progress for June 2015 was 0.8% versus 0.0% planned (the project was supposed to be complete by now). Cumulative progress through June 30, 2015, was 97.7% actual versus 100.0% planned.

Construction Progress: The contractor continued punchlist repairs during July 2015 and attempted to install the last of three snow melter units in “F” Interlocking, although the attempt was unsuccessful. The next track usage that will be available to the contractor to install the unit will be in late August. If the contractor is able to make the installation at that time, ESA and the contractor will be able to declare Substantial Completion for CH054A immediately thereafter.

CH057A – Part 3 Westbound Bypass: The Estimate at Completion for CH057A increased slightly to \$121,410,583 during June 2015. The MTACC forecast for Substantial Completion was extended by 3 weeks to December 12, 2016, due to insufficient track usage during June to install its planned amount of secant and soldier piles. Actual construction progress for June 2015 was 2.1% versus 5.2% planned. Cumulative progress through June 30, 2015, was 24.0% actual versus 66.2% planned.

Construction Progress: During July 2015, the contractor installed 10 secant piles for the East Approach launch block; excavated and poured 10 concrete foundations for communications poles between Harold and Woodside Interlockings; and continued construction of the Westbound Bypass pump station facility.

Railroad Force Account:

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

FHA01 – Harold Stage 1 Amtrak: The Estimate at Completion for FHA01 remained at \$18,824,861 during June 2015. The MTACC forecast for Substantial Completion was extended by one week to February 3, 2018. Actual construction progress for June 2015 was 0.0% versus 0.0% planned. Cumulative progress through June 30, 2015, was 97.8% actual versus 99.2% planned.

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

FHA02 – Harold Stage 2 Amtrak: The Estimate at Completion for FHA02 remained at \$45,369,618 during June 2015. The MTACC forecast for Substantial Completion was extended by 6 weeks to March 7, 2020. Actual construction progress for June 2015 was 0.7% versus 0.0% planned. Cumulative progress through June 30, 2015, was 96.5% actual versus 97.1% planned.

Construction Progress: During July 2015, Amtrak Electric Traction personnel installed catenary and auxiliary wires and a tension break over the #807 crossover; transferred catenary and body span wires at the B915-2/3 catenary pole; installed ground wires on the B915-2/3 and B915-1/3E

catenary poles; removed the existing cables on the #125 signal circuit; and supported the CH053 contractor to install the “K” frame on the B923 catenary pole.

FQA65 – Loop Interlocking Amtrak: The Estimate at Completion for FQA65 remained at \$29,663,652 during June 2015. The MTACC forecast for Substantial Completion was extended three months to December 4, 2022. Actual construction progress for June 2015 was 0.6% versus 2.9% planned. Cumulative progress through June 30, 2015, was 10.4% actual versus 42.9% planned.

Construction Progress: During July 2015, C&S personnel continued to excavate and install the retaining wall on the north side of Loop 2 Track between “T” and Loop Interlockings.

FHL01 – Harold Stage 1 LIRR: The Estimate at Completion (EAC) for FHL01 remained at \$20,804,621 during June 2015, although the MTACC has indicated that it will increase this EAC when the CH053 contractor makes additional G02 Substation work available to the LIRR. The MTACC forecast for Substantial Completion was extended by 1 month to June 16, 2016. Actual construction progress for June 2015 was 0.0% versus 0.0% planned. Cumulative progress through June 30, 2015, was 100.0% actual versus 100.0% planned (the percentage planned will change when the aforementioned EAC increase is made).

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

FHL02 – Harold Stage 2 LIRR: The Estimate at Completion for FHL02 decreased slightly to \$78,464,345 during June 2015. The MTACC forecast for Substantial Completion remained at April 11, 2018. Actual construction progress for June 2015 was 1.4% versus 1.8% planned. Cumulative progress through June 30, 2015, was 72.9% actual versus 84.2% planned.

Construction Progress: During July 2015, LIRR C&S personnel began pre-testing signal circuits for the “H3” CIL cutover (scheduled for November 2015); continued to make ESA31, 908, and 908A (design designations) signal revisions at the existing Harold CIL; installed track wires and cables from turnouts installed in 2014 to the “H4” CIL; installed CIL legs, ground rods and wires, and phase breaks at “H1” location; and LIRR 3rd rail personnel installed negative return cables at “H4” location.

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

GEC Quality: The ESA Quality Manager performed an audit of ESA GEC Quality on June 24, 2015. The GEC Quality Manager did not have an audit schedule. He will issue one and then perform three audits during the remainder of 2015, one for each of the three construction phase procedures. On July 30, 2015, the ESA GEC Quality Manager announced that he will be leaving the GEC in about a month. Preparation of the audit schedule and conduct of the audits will defer to the new GEC Quality Manager. The ESA Quality Manager will talk with the GEC Program Manager to discuss how he plans to staff the GEC Quality function. At present, the funding level is 0.25 of one person. The ESA Quality Manager believes that this is too low. The PMOC agrees with this assessment.

CS179 (Systems Package 1 – Base Contract): Several contractor Quality Managers have either left or been rejected by ESA and MTACC Quality Management. The contractor has several other ESA contracts and its ESA Quality Manager has been approved as the Quality Manager for this contract for a period of 90 days. Under the contractor’s ESA Quality Manager,

outstanding issues are beginning to be resolved. The only significant outstanding quality-related issue to report at this time concerns the non-compliance of some electrical transformers that were manufactured in Mexico and are, therefore, non-compliant with “Buy/Ship America” provisions of the contract. These non-compliant transformers were “red-tagged” and removed from the work area.

CM014B: The contractor is behind schedule with its submittals. Construction Work Plans (CWPs) need several revisions before they can be accepted. The ESA Quality Manager will be conducting workshops in mid-August 2015.

Asset Management Audits: ESA Quality initiated Asset Management audits in June 2015. These audits are bi-annual walkthroughs to perform a visual site inspection of finished contracts wherein there are structures or appurtenances that have been completed but have not yet been turned over to the end user (LIRR). The first two audits for Contracts CQ031 and CQ039 went well with only minor observations noted. An audit of the CM004 contract will be conducted in mid-August 2015.

2.0 SCHEDULE DATA

ESA submitted its IPS #71 data date July 1, 2015, and its variance report to the PMOC on August 10, 2015. The variance report states that, “The current working 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 critical path passes through the procurement of Contract CM007 and then to construction of the structure within the GCT. The path then shifts to CS179 work within the Train Operations Center (TOC) and finally through Integrated Systems Testing, Starting, Commissioning and RSD.

ESA has a significant number of contracts that are “near critical”, that is, they 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 to CM006 access via critical path above)
- CQ032: Plaza Substation and Queens Structures (Early Access Chamber)
- CH053: Harold Structures Part 1 & G02 Substation (hand off to CH057A)
- CH057D: Harold Track Work: Cutover 3B (Track A) – Future Contract
- CS179: System Facilities – Package 1 (IST) – Future Contract
- FHA01/02/03: Harold Amtrak Force Account Work (integral with the CH contracts)
- FHL02: Harold LIRR Force Account Work (integral with the CH contracts)
- FQA65: Loop Interlocking – Amtrak Force Account Work (CIH and Switch work)

Additionally, ESA has reported that Contract CM006 continues to trend behind schedule and that it is not meeting its recovery schedule. As the PMOC stated in its analysis, failure to meet Milestone #2 in Contract CM006 in February 2016 will cause a delay to the award of the CM007 contract. Furthermore, if Contract CM006 delays its Substantial Completion, Contract CM014B will be negatively affected as well.

Contract CS179, Systems Package 1 – Facilities Systems, also shows delays in 10 milestones so far and the contractor has not submitted an acceptable baseline schedule that includes IST schedule.

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

Table 2-1: Future Procurement Schedule

Contract Description	Advertise Date	Bid Date	NTP	Project Contract Period	Substantial Completion
CM007 GCT Caverns ¹	12/22/2014	Technical Bid: 9/15/2015	1/4/2016	43 Months	7/24/2019
		Cost Bid: 10/6/2015			
CQ033 Mid-Day Storage Yard ²	12/28/2015	3/3/2016	5/2/2016	36 Months	5/1/2019
VQ033 Mid-Day Storage Yard CIL Procurement	8/10/2015	9/1/2015	9/29/2015	44 Months	5/1/2019
CH057 48 th Street Bridge / D Pit and Approach Structure	4/7/2015A	7/9/2015	8/14/2015	30 Months	1/30/2018
VHA04 Procure Materials for Harold Stage 4- Amtrak F/A	N/A	N/A	11/16/2015	72 Months	11/2/2021

¹ 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.

² CQ033 was planned to be awarded by the end of 4Q2015, but is now projected to have a 3 month delay. This will cause a corresponding delay in achieving ESA's first hold point that has been projected for 4Q2015 [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 #71)

Activity ID	Activity Name	Start	Finish	IPS Contract
MANHATTAN CONTRACTS				
CM007-0150	CM007 Bid Proposals Due		6-Oct-15	CM007
QUEENS CONTRACTS				
VQ033-1050	VQ033 Bid Due Date		1-Sep-15	CQ033,VQ033
VQ033-1090	VQ033 Notice To Proceed (NTP)	29-Sep-15		CQ033,VQ033
CQ033-P1310	GEC 100% Design Resubmission		1-Oct-15	CQ033
CQ033-1050	CQ033 Begin Preparation for Advertisement		28-Oct-15	CQ033
HAROLD INTERLOCKING CONTRACTS				
CH057D-0010	Issue directive GEC	2-Sep-15		CH057D
FHL02-3190	Ready to Demo Rack at Woodside		22-Sep-15	FHL02
CH057A-5580	CH057A Milestone #2 – Sig. Bridge 16		4-Oct-15	CH057A
FHL02-3290	Ready to Install Loc 30 CIL		6-Oct-15	FHL02
FHL02.MS.00035	MS-Cutover H3 CIL		15-Nov-15	FHL02
FHL02-CSR160	H3 Cutover w/Civil Speed Enforcement		15-Nov-15	FHL02

The PMOC notes that, over the past 13 months, ESA has been submitting its monthly IPS updates later than the SMP requirement to submit the updates on the 26th calendar day of each month.

Project Critical Path:

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

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

Activity Name	Original Duration	Start	Finish
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
Early Revenue Service Date			25-Mar-20
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
Target Revenue Service Date			12-Feb-21
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
Late Revenue Service Date			13-Dec-22

For the immediate future, 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 include several intermediate activities which are predecessors to the Tunnel B/C cutover.

Schedule Contingency: IPS #71 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.
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 result in completion of MS #2 in 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. Additionally, depending upon the number of bids and the low bid received for CM007, the MTACC may not be able to fully fund the base CM007 contract. 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, CM007, CQ033, and CH058 Contracts. The new \$10.178 billion (not including the \$463 million Rolling Stock Reserve) budget presented to CPOC in June 2014 will make the need for additional funding even greater. Until new funding is provided, the project has a funding shortfall of approximately \$2.6 billion, and is part of the un-funded MTA Budget.

Budget/Cost: The ESA June 2015 Progress Report shows that the total project progress was 57.4% versus 57.8% planned against the Current Baseline Budget (CBB) of \$10.178 billion. Total construction progress was 56.9% versus 57.8% 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. At several Monthly Cost Review meetings, the PMOC suggested that ESA update its Cash Flow chart to align it with planned construction progress and completion dates. To date, however, ESA has not made this change.

The current \$10.178 billion budget follows the procedure of assigning a series of separate small contingencies which are not easily distinguishable. This already entails an excess number of budget adjustments to date and in 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 cost proposals, ESA should determine how it would adjust budgets, should the CM007 price come in higher than the ESA's budget for it. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	↓	↓	↓	↓	↓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	↓	↓	↓	↓	↓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

Change Orders/Budget Adjustments: The PMT reported that, during June 2015, two (2) construction change orders over \$100,000 were executed for a total of \$900,000.

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 will resume the dedicated monthly risk meetings in August 2015.

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 the MTACC’s risk facilitator. The MTACC responded that they would discuss FTA’s request with MTA upper management and provide an answer to the FTA. As of July 31, 2015, however, the 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 pushes back 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. The MTACC will require FRA approval for a time extension for the HSR funding, but formal approval will only occur after FRA approves the MTA generated grant amendment. The MTACC has already presented the Harold Re-Sequencing Plan to the Amtrak Engineering Department and to the LIRR Transportation Department. The MTACC is currently reporting that Amtrak and LIRR have approved the "ESA First" concept and this will allow implementation of the Harold Interlocking Re-Sequencing Schedule.

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 the 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. The revised plan 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.
- **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 has been reviewed by the PMOC against the PMOC's evaluation in 4Q2014. The PMOC is currently coordinating with the MTACC to arrange a series of working meetings with ESA chapter authors and the corresponding PMOC reviewers to resolve the outstanding FTA/PMOC evaluation comments. During July 2015, several meetings were held to resolve FTA/PMOC evaluation comments on PMP sections covering Operational Readiness, Systems Testing, and Start-Up.

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:



- **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 MTACC plans to review and update the SMP after the TCC and CMP updates.
- **Cost Management Plan (CMP):** The ESA project remains non-compliant with requirements for Project Level EAC Forecasting, Project Level EAC Forecast Validation, and the 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 the MTACC has not made significant progress in this area. The 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. The revised plan is currently under review by the PMOC.

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. Additional discussion is 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 September 17, 2015.

6.0 SAFETY AND SECURITY

Project safety statistics for lost time accidents on active construction contracts continue to trend above the Bureau of Labor Statistics (BLS) national average at 2.10 vs. 1.80 lost time accidents (LTA) per 200,000 hours. This is slightly lower than last reporting period (2.14). In response to the earlier problems with the CM005 contractor regarding site safety, the MTACC had directed the CM005 contractor to retain a third-party safety oversight consultant to evaluate the safety program, prepare recommendations and implement changes. The safety consultant started on the project in April 2015 and completed its work in June 2015. The PMT did not report any significant security issues in its 2Q2015 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 help make this happen. The continuing 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 PMT continued to shift scope among different packages during the first half of 2015, making it difficult to fully understand the impact of these changes to the overall ESA Project. An updated draft Contract Packaging Plan (revision 10.0) was submitted on March 28, 2014, and the next revision still has not been issued as of July 31, 2015. The PMOC does note that the PMT has recently provided a summary of scope shifts and recommends that the CMP be updated accordingly and issued. 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 CS179:

The PMOC remains concerned that the backlog in overdue submittal reviews has not been significantly reduced and recommends that ESA, the GEC, and the contractor work together to improve the review process. The PMOC is also concerned that the contractor does not yet have a formally approved baseline schedule with approximately 20% of the contract time expended. The baseline schedule represents an overall contract work plan that all stakeholders must agree upon and use to efficiently progress the work. Although the PMT is tracking progress based on the monthly updates, this situation will make evaluation of time impact analysis for delays and settlement of claims quite difficult. The PMOC recommends that the ESA CM convene another schedule workshop with all parties to resolve issues and reach agreement on a baseline schedule that can be approved. The contractor acknowledges that its performance will be dependent on successful and timely interfaces with Contracts CM006, CM007, CM014B and CQ033. This dependency will require that the contractor closely coordinate its work efforts and schedules with all of the contractors. An accurate and well-integrated schedule showing all these interfaces is paramount to achieving success in this area.

Contract CS084: The PMOC is concerned that nine months of this contract are already expended and there is still no “approved” baseline schedule. The baseline schedule represents an overall contract work plan that all stakeholders must agree upon and use to effectively progress the work. The PMOC recommends that ESA promptly convene a meeting with the contractor to discuss and resolve comments and issues found with the submitted baseline schedule to facilitate the timely development of a baseline schedule that can be approved.

Contracts CH053/54A: As of July 31, 2015, both the CH053 and CH054A contracts have one significant task to complete before each can declare Substantial Completion. CH053 must complete its construction of the 12kV Electric Traction feeder system between Sub 44 and the Sunnyside Yard Frequency Converter. It has had an extremely difficult time getting construction to this point and CH053’s troubles have been chronicled as they occurred. The contractor is scheduled to begin repairs to its latest setback regarding the cable splice covers in mid-August 2015, and be complete within 6 weeks. The final task for the CH054A contractor is installation of a snow melter unit in “F” Interlocking, which is scheduled for the weekend of August 21-23,

2015. Since both of these tasks are dependent upon railroad Force Account support, the PMOC recommends that ESA and the contractor work closely with the railroads to coordinate the track usage and personnel necessary to accomplish these tasks as soon as possible.

Contract CH057A: The PMOC is concerned that the CH057A contract has lost eight weeks from its construction schedule during the past three months largely because of lack of track outages required to install soldier and secant piles adjacent to Amtrak's Line 4 Track in Harold Interlocking. Although this activity has little impact on other Harold contracts, it is nonetheless a critical path item for the CH057A contractor in order to complete its work on schedule. The PMOC recommends that ESA and the contractor continue to work with Amtrak to identify ways to increase track outage time available to the contractor.

Contract CM006: The contractor continues to trend behind the approved recovery schedule. After some improvements during late March 2015 and into April 2015, additional schedule slippage occurred during May 2015.

Currently, the contractor is now late 44 Calendar Days for Milestone #2. Milestone #2, completion of lower level tunnels, leads to a hand-off to the CM007 contractor. The MTACC has acknowledged that despite the mitigations that are in progress, recovery is not certain. 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 the 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 incremental access over a period of time with resulting cost and schedule consequences.

Contract CM007: The PMOC is concerned that the proposal due date has now been delayed over four months and this significantly reduces the time for negotiations on this very large contract that is currently on the program schedule critical path. The 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 Q1-2016 at the earliest and likely not until early Q2-2016.

Project Funding: As stated in the Risk Management issue 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 (restructured with options due to funding availability) and the CM007 procurement (moved out to the 4th Quarter of 2015 for full Award). As of July 31, 2015, the 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 and CQ033 contracts in 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. The MTACC continues to work closely with the MTA finance group and keeps the FTA up-to-date on developments and issues. The PMOC has 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:

ESA did not adequately budget the CM014B package and has used significant cost contingency to cover the contract award amount. This issue may be repeated when the CM007 bid is received at the end of 3Q2015. [REDACTED]

[REDACTED] Although ESA has so far withheld the Draft version of the CM007 Risk Assessment Report, at the workshop there were a number of ESA recognized additional risks that would produce additional probable costs above those included in any of the ESA estimates. The PMOC remains concerned about the adequacy of remaining cost contingency to address major risks detailed in the Risk Management discussion below. The PMOC notes that the project's use of unallocated cost contingency has been significant in recent report periods.

Project Schedule: The PMOC remains concerned about the ESA project's continued inability to develop approved baseline schedules for the CS179 and CS084 contracts. Although elements of design and construction work are progressing on the CS179 contract, an accurate evaluation of actual versus planned progress is difficult. Additionally, the PMOC is concerned about the CS179 contractor's forecast that it can hold the contractual substantial completion date despite a seven-month delay in meeting the first contractual milestone because the methodology to mitigate this delay has yet to be demonstrated or shown based on an approved schedule. The CM006 contract has experienced significant delays and although ESA has approved a recovery schedule from the Contractor, its performance to date has not yet met the revised production targets.

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 CM007 contract award until 2015 due to budget constraints; and the restructuring of the CS179 contract by splitting it into a base contract with seven options, based predominately on access restraints imposed by the CM006, CM007, and CM014B packages, which will significantly increase the construction contract interface risks. This segmentation of construction packages has created multiple inter-contract interfaces and milestones. The probability of successfully achieving all of them is low, in the PMOC's opinion, and leads to the possibility of a ripple effect of delays and coordination difficulties between contracts. There is very limited opportunity for the contractors to make up time lost to interface delays due to work site time and access constraints. Managing inter-contract handoffs and interfaces will be challenging and represent significant MTACC-retained risks. Schedule risks will be exacerbated if funding is not in place to award the options in the CS179 contract package as planned. Access Restraints in the CS179 contract are correlated to the options in the Contract; and the CS179 contract will also have multiple interfaces to the CM007 contract which has not yet been awarded. Given that this work is on the project critical path, delays in awarding the options will result in the use of program schedule contingency.

The PMOC remains concerned about the coordination risk retained by the 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.

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;
- Duration of integrated systems testing;
- Continued availability of adequate Amtrak and LIRR force account resources;
- Continued availability of required track outages in the 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
BA	Budget Adjustment
BCS	Backbone Communication System
BLS	Bureau of Labor Statistics
BMS	Building Management System
BOH	Back of House
C&S	Communication and Signals
CCC	Change Control Committee
CCM	Consultant Construction Manager
CCU	Code Compliance Unit
CM	ESA Construction Manager assigned to each contract
CMP	Cost Management Plan
CMU	Concrete Masonry Unit
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
CWP	Construction Work Plan
DCB	Detailed Cost Breakdown
EAC	Estimate at Completion
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
FLSS	Fire Life Safety System
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GCT	Grand Central Terminal
GEC	General Engineering Consultant
HTSCS	Harold Tower Supervisory Control System
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
LTA	Lost Time Accidents
MNR	Metro-North Railroad
MPT	Maintenance and Protection of Traffic
MSE	Mechanically Stabilized Earth
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)
PAC	Pneumatically Applied Concrete
PCO	Preliminary Change Order
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
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
SCADA	Supervisory Control and Data Acquisition
SCC	Standard Cost Category
SIR	Supplemental Independent Reviewer
SMP	Schedule Management Plan
SOE	Support of Excavation
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
VCS	Voice Communications System
VE	Value Engineering
VoIP	Voice over Internet Protocol
WBS	Work Breakdown Structure
WBY	Westbound Bypass Tunnel
YSB	Yard Service 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%	6,315.3	56.3%
Financing Cost	\$1,036	14.00%	\$617	1,036.0	9.24%	617.6	59.6%
Total Project Cost	\$6,350*	86.00%	\$4,107	10,178.0	90.76%	5,697.7	56.0%
Federal Share	\$2,683	36.30%	\$1,148	2,699.0	24.07%	2,000.8	74.1%
5309 New Starts share	\$2,632	35.60%	\$1,098	2,436.6	21.73%	1,738.7	71.4%
Non New Starts grants	\$51	0.70%	\$50	67.0	0.60%	66.7	99.6%
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%	3,696.9	49.4%

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

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (June 2015)	Actual Awards (June 2015)	Paid to Date (June 2015)	Actual % Budget Paid
Construction	\$7,379,296,706	\$7,449,040,375	\$5,429,450,587	\$4,101,204,744	55.06%
Soft Costs Subtotal	\$2,798,474,304	\$2,728,730,635	\$1,638,667,813	\$1,596,523,113	58.51%
Engineering	\$720,615,810	\$720,615,810	\$657,051,891	\$644,265,432	89.40%
OCIP	\$282,613,620	\$282,613,620	\$206,370,653	\$194,378,468	68.78%
Project Mgmt.	\$972,168,644	\$972,168,644	\$659,355,310	\$643,582,332	66.20%
Real Estate	\$182,076,230	\$182,076,230	\$115,889,959	\$114,296,881	62.77%
Rolling Stock	\$202,000,000	\$202,000,000	\$0	\$0	0.00%
██████████	██████████	██████████	██	██	████
Project subtotal w/o Financing & RI	\$10,177,771,010	\$10,177,771,010	\$7,068,118,400	\$5,697,727,857	55.98%

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 \$)	May 2015 SSC (YOE \$) M	June 2015 SSC (YOE \$) M	June 2015 % of Re-Plan	Apr'15 to June '15 Change \$M	Variance from FFGA %
10	1,989	3,405	3,419	3,433	100.82%	14	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	608	583	95.42%	-25	184.39%
50	619	606	579	576	95.05%	-3	-6.95%
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%
█	█	█	█	█	█	█	█
Subtotal	6,813	10,178	10,178	10,178	100.00%	0	49.39%
100	1,036	1,036	1,036	1,036	100.00%	0	0.00%
Total Project Cost (10 – 100)	7,849	11,214*	11,214*	11,214*	100.00%	0	42.87%

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

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

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**Table 5: ESA Planned Cash Flow- Actuals to Date and Actual Remaining
(as of 6/30/15)**

Quarter/year	Construction \$(000)	Engineering \$(000)	OCIP \$(000)	Project Mgmt. \$(000)	Real Estate \$(000)	Rolling Stock \$(000)
Paid To Date	3,660,194,771	646,377,892	155,604,955	580,041,291	112,634,547	0
Remaining	3,719,144,273	74,237,918	127,008,665	392,127,353	69,441,683	202,000,000
3Q2014	209,340,620	-3,311,163	4,774,951	16,667,454	0	0
4Q2014	168,280,817	-3,290,689	4,774,951	16,667,454	75,948	0
1Q2015	134,568,200	-3,183,384	4,619,246	16,123,950	4,506,241	0
2Q2015	147,357,357	-3,290,689	4,774,951	16,667,454	4,658,137	0
Remaining Planned	3,059,597,279	87,313,843	108,064,567	326,001,040	60,201,357	202,000,000
Remaining Actual	3,278,134,300	76,350,378	88,235,152	328,586,312	67,779,349	202,000,000
3Q2015	169,688,509	-3,290,689	4,774,951	16,667,454	4,658,137	0
4Q2015	201,239,698	-3,290,689	4,774,951	16,667,454	4,658,137	0
1Q2016	193,275,933	-3,219,153	4,671,147	16,305,118	4,556,873	0
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	#REF!	4,774,951	15,971,281	4,658,137	13,070,855
1Q2018	174,210,593	6,509,009	4,619,246	15,450,479	4,506,241	12,644,631
2Q2018	170,524,739	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
3Q2018	168,497,619	6,728,414	4,774,951	15,971,281	4,658,137	14,014,767
4Q2018	155,245,094	6,728,414	4,774,951	15,971,281	50,632	14,014,767
1Q2019	148,441,548	6,509,009	4,619,246	15,450,479	0	13,557,764
2Q2019	110,893,994	6,728,414	4,774,951	15,971,281	0	14,014,767
3Q2019	93,559,944	6,728,414	4,774,951	15,971,281	0	14,014,767
4Q2019	71,649,848	6,728,414	4,774,951	15,971,281	0	14,014,767
1Q2020	20,704,406	6,582,144	4,671,147	15,624,080	0	5,043,553
2Q2020	11,682,057	6,728,414	4,774,951	15,971,281	0	943,912
3Q2020	7,573,078	2,267,183	4,947,825	5,381,627	0	0
4Q2020	2,750,374	0	5,035,679	0	0	0
1Q2021	881,913	0	3,256,771	0	0	0
2Q2021	0	0	0	0	0	0
BL Subtotal	3,719,144,273	74,237,918	127,008,665	392,127,353	69,441,683	202,000,000

**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 (2Q15)	Paid To Date (2Q15)
10- Guideway & Track Elements	\$1,513,998	\$2,943,165	\$3,405,463	\$2,709,593	\$2,009,894
20- Stations, Stops, Terminals, Intermodal	\$1,168,655	\$1,513,998	\$2,238,235	\$1,630,151	\$1,141,477
30- Support Facilities, Yards, Shops, Admin Buildings	\$356,264	\$384,583	\$474,177	\$209,748	\$203,274
40- Site Works and Special Conditions	\$205,105	\$491,341	\$610,570	\$427,207	\$427,730
50- Systems	\$619,343	\$698,296	\$605,592	\$407,593	\$275,959
60-ROW, Land, Existing Improvements	\$165,280	\$203,639	\$219,397	\$153,211	\$151,618
70- Vehicles	\$493,982	\$674,372	\$209,938	\$7,838	\$5,549
80- Professional Services	\$1,184,000	\$1,648,606	\$1,975,398	\$1,522,778	\$1,482,226
Sub-Total	\$6,349,900	\$8,708,000	\$10,177,771	\$7,068,119	\$5,697,727
Estimated Financing Cost	\$1,036,100	\$1,116,000	\$1,036,000	\$617,607	\$617,607
Total	\$7,386,000	\$9,824,000	\$11,213,771	\$7,685,726	\$6,315,334

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	57.4 (ESA Figure)		
	Based on Earned Value ±	0.82 (PMOC Calculation)		
Project Performance Rate (Since 2014 ESA “Re-Plan”)				
Major Issue	Status		Comments	
Major Procurements Delays	CM014B was advertised in May 2014; ESA did not make its recommendation to award forecast date of November 2014, and did not make its last forecast date of November 2014 for advertising CM007. 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.		PMOC remains concerned about the potential project schedule impacts of procurement delays on these two packages, CM014B and CM007, since they are on the critical and near critical paths for the project.	
Project Schedule	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.		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 schedules for the CS179 and CS084 contracts, as they are critical to the timely completion of the project.	
Harold Re-planning	The Harold baseline schedule that formed the basis of the Program schedule presented to the CPOC in June 2014 is no longer valid. Based on current issues with slow progress and inadequate force account support, ESA completed a Harold schedule re-sequencing in December 2014, also known as “ESA First,” that advances work elements required for the new LIRR service to GCT and pushes back the FRA funded High Speed Rail Work beyond 2017.		Work on the Harold Interlocking is subject to influences outside of the control of ESA. The FRA and Amtrak need to accept the most recent Harold re-sequencing plan completed in December 2014. Should issues with the level of Amtrak force account support return, this could further delay the Harold Interlocking work.	

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