

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

Report Period February 1 – February 28, 2018



PMOC Contract No. DTFT60D1400017

Project No. DC-27-5287, Task Order No. 0002, Work Order No. 06

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

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Third Party Disclaimer

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For projects funded through the FTA Full Funding Grant Agreements (FFGA) program, FTA and its Project Management Oversight Contractor (PMOC) use a risk-based assessment process to review and validate a project sponsor’s budget and schedule. This risk-based assessment process is a tool for analyzing project development and management. Moreover, the assessment process is iterative in nature; any results of an FTA or PMOC risk-based assessment represent a “snapshot in time” for a particular project under the conditions known at that same point in time. The status of any assessment may be altered at any time by new information, changes in circumstances, or further developments in the project, including any specific measures a sponsor may take to mitigate the risks to project costs, budget, and schedule, or the strategy a sponsor may develop for project execution. Therefore, the information in the monthly reports will change from month to month, based on relevant factors for the month and/or previous months.

EXECUTIVE SUMMARY

This summary highlights key events and important issues for the current month.

Overall Program Status: The current Overall Program is 75.5% complete versus 79.3% planned (based on invoice cost).

Construction Status: The Construction Status is 75.5% complete versus 80.4% planned (based on invoice cost).

Contracts Awarded /
Contracts Completed: None.

Construction Progress Issues: CM014B, CS084, VS086, CH061A

Program Funding: MTACC evaluating interim budget solutions; results anticipated by March 31, 2018; ESA amendment to 2014-19 Capital Plan is again being considered.

Program Cost and Budget: (b)(4)

Risk Management: The Accelerated Amtrak Penn Station Program, Jan 2018-May 2018 minimal impact; risks to date mitigated; 10 major risks remain.

Harold Interlocking: Completed 1st of 6 2018 signal pre-cutover testing weekends during February 2018.

Key Stakeholder Issues: LIRR – Late completion of Positive Train Control design; late resolution of CS179, CS084, and VS086 issues.
Amtrak – Continuing Force Account availability issues; Electric Traction at historically lowest availability; and
MTACC - Change Order processing issues, Engineering support for Contractor Submittals, redesigns, RFIs and Field Conditions.

Construction Safety: 0.0 - Lost Time and 0.0 - Recordable Injuries during Jan 2018.

ELPEP Compliance: No issues.

Project Management Plan: No issues.

All Project Sponsor cost and schedule data included in this report is based on the MTACC East Side Access 4Q2017 (October, November, and December) Progress Reports, referenced in this report as the ESA Quarterly Progress Report 4Q2017, which has a cost and schedule data date of January 1, 2018. Unless otherwise noted, all progress percentages in this report are based on invoiced costs, not actual construction.

Report Format and Focus

This report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT60D1400017, Task Order No. 0002. Its purpose is to provide information and data to assist the FTA as it continually monitors the Project Sponsor's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the Project Sponsor 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 Project Sponsor and financed by the FTA FFGA. The PMOC notes that the FFGA Amendment was fully executed with MTA's sign-off on August 2, 2016. The amended FFGA incorporates the changes in the Baseline Cost Estimate and Revenue Service Date that have occurred since 2006 when the original FFGA was signed.

MONITORING REPORT

1.0 PROJECT STATUS

a. Engineering Design and Construction Phase Services

The ESA November MPR shows that the overall Engineering effort is 99.0% complete as compared with the planned completion of 100%; and, 97.9% of the overall EIS and Engineering budget has been invoiced, including the Design budget of which 98.1% has been invoiced.

Status of Construction Packages Advertised

CS086, Systems Package 2 – Tunnel Systems, was advertised on August 10, 2017. A single proposal was submitted on October 31, 2017. This procurement is advancing as an RFP and negotiations with the proposer continued through February 2018.

CH057D, Harold Track Work, includes completion of all the remaining track work in the Harold Interlocking Northeast and Southeast Quadrants. The contract was advertised on November 30, 2017, and four bids were opened on February 20, 2018.

Status of Construction Packages Not Awarded

CM015 – 48th Street Entrance: Design work remained suspended through February 2018. MTA has notified the building owner that construction of the 48th St. Entrance has been deferred. MTACC-ESA is developing an alternative LIRR GCT entrance at 47th Street and is preparing a Technical Memorandum for the FTA.

CH058A, Harold Structures – Part 3A, B/C Approach, will include construction of the Tunnel B/C approach structure. NYCDOT approved the package as revised to include the alternate support of excavation for the existing 39th Street Bridge piers. The scope of the required catenary work for Amtrak Force Account FHA04 has been finalized and is included in PCO 222. The scope also includes demolition of the existing LIRR GO2 Substation. The 100% design package was submitted on December 1, 2017. Bid package preparation continued through February 2018 but it was not advertised as of February 28, 2018.

FQA33A, Mid-Day Storage Yard Facility – Amtrak F/A, includes provision for west end yard access to the Amtrak mainline through a connection from Sub 4 to Line 2. Based on review and discussions between ESA, GEC, and LIRR, it was decided to develop an expanded Option D scheme that will add additional track along the south section of the west end of the Mid-Day Storage Yard (MDSY). LIRR comments are not finalized, and Amtrak has not provided design concurrence as of February 28, 2018. This will be the only exit route from the MDSY that will be provided under the ESA Program.

FQA33B, Mid-Day Storage Yard Facility – Amtrak F/A, includes provision for a second west end yard access to the Amtrak mainline through a connection from Sub 3 to Line 4. The 100% design package remains temporarily on hold pending finalization and approval of the Sub 4 to Line 2 connection to be built under FQA33A (see above). This exit route will be constructed by Amtrak after Contract CQ033 completes the MDSY and upon arranging the funding source.

FQL33, Mid-Day Storage Yard Facility – LIRR F/A, provides LIRR force account construction support for CQ033. LIRR is reviewing the 100% design package.

Positive Train Control: The MOU between MTACC and LIRR for the implementation of Positive Train Control (PTC) on ESA was executed and the Technical Concurrence Document has been agreed upon by MTACC and LIRR. LIRR is now expected to complete the PTC design by March

31, 2018. The GEC has prepared initial scoping of design modifications to Contracts CS179, VS086 and CS086, which will provide for the LIRR designed PTC overlay onto the ESA systems and is awaiting the PTC final design from LIRR. In early October 2017, LIRR formally requested the FRA to waive the requirement to have PTC operational in the Harold Interlocking by December 31, 2018, based on the interlocking's status as an active construction area. LIRR subsequently submitted a revised waiver request to the FRA in late December 2017. The FRA's formal response is still pending.

Status of MTACC and LIRR Review and Approval of Systems Contractors' Final Designs

CS179, Systems Facilities Package No.1: The backlog of overdue submittal and RFI reviews noted in earlier reports continues to be a significant unresolved issue for the CS179 project team. The contractor continues to assert that overdue responses on design submittals and Requests for Information (RFI) and unresolved Notices of Change (NOC) are impacting the completion of design work and delaying the contract schedule. The contractor continues to note that there are 58 NOCs, 45 for which MTACC was to issue Contractor Proposal Requests (CPRs), that are contributing to its inability to finalize the design. The completion of Final Design (FD) for all 10 Control Systems, which were scheduled for completion 20 months ago, has not occurred yet and the FD of the 19 Non-Control Systems is also delayed. The full impact of the Control and Non-Control System FD delays on contract progress remains undetermined at this time. Previously noted Buy/Ship America issues that could impact design completion also remain unresolved.

CS084, Traction Power Systems Package 4: The contractor contends that unresolved design issues, differing site conditions, and coordination issues continue to cause day-to-day delays to the completion of this contract. The contractor indicates that all of the contract milestones are already delayed and will continue to experience day-to-day delays until the noted problems and issues are resolved.

VS086, Systems Package 3 – Signal Equipment Procurement: The contractor continues to raise concerns over the timeliness of responses from MTACC on design submittals and inquiries and asserts that the lack of timely responses is causing day-to-day delays in the progression of the work. MTACC needs to make key design decisions that have the potential to impact designs already in progress, interim contract milestones, and the overall substantial completion of this contract.

b. Procurement

The 4Q2017 MPR shows that total procurement for the ESA project was 88.5% complete, with \$9.0 billion awarded of the \$10.178 billion current project budget (ESA Program only).

The status of the remaining major near-term procurements is summarized below:

- CS086 Tunnel Systems Package 2: Tunnel Signals is being procured as a RFP. The February 5, 2018, planned NTP date was missed and the award will be delayed until at least March 2018.
- CQ057D, Harold Structures – Part 3: Trackwork, was advertised on November 30, 2017, and four bids were opened on February 20, 2018.

c. Construction

In the 4Q2017 MPR, MTACC reported that total construction progress reached 75.0% complete compared to as-planned progress of 80.8% (based on invoice cost, not actual construction).

Manhattan Contracts

Costs and schedule data are tabulated below for active Manhattan contracts.

	Current Budget	Appr'd Contract	Rem Budget	Invoice Cost	EAC	Planned Comp	Invoice Comp	Current BL SC	Forecast SC	Notes
CM006	361.6	350.2	11.4	346.0	352.8	100.0%	99.3%	6/1/17	3/16/18	
	nc	nc	nc	nc	nc	nc	nc	nc	nc	
	361.6	350.2	11.4	346.0	352.8	100.0%	99.3%	6/1/17	3/16/18	
CM007	712.3	663.4	48.9	209.0	702.1	39.3%	31.5%	1/28/20	6/4/20	
	nc	(-1.5)	+1.5	+20.1	(-3.3)	nc	+3.0%	nc	+25cd	
	712.3	661.9	50.4	229.1	698.8	39.3%	34.5%	1/28/20	6/29/20	
CM014A	61.1	60.5	0.6	58.9	58.1	100.0%	97.4%	9/7/15	2/28/18	2
	nc	nc	nc	nc	nc	nc	nc	nc	nc	
	61.1	60.5	0.6	58.9	58.1	100.0%	97.4%	9/7/15	2/28/18	
CM014B	463.6	445.7	17.9	214.6	512.1	80.8%	48.1%	8/18/18	5/18/20	1
	nc	+0.7	(-0.6)	+6.3	(-1.7)	+1.6%	+1.4%	nc	nc	
	463.6	446.4	17.3	220.9	510.4	82.4%	49.5%	8/18/18	5/18/20	
VM014	46.2	34.9	11.3	20.2	45.6	NA	58.9%	10/25/19	10/16/20	
	nc	nc	nc	nc	(-0.7)	NA	nc	nc	nc	
	46.2	34.9	11.3	20.2	44.9	NA	58.9%	10/25/19	10/16/20	

Notes: For each contract: line 1 = prior value; line 2 = period change – nc = no change; and, line 3 = current value.

1 Current approved contract does not include full scope (e.g., not all contract modifications or amendments are included).

2 The substantial completion date was established but was not declared.

CM006 – Manhattan North Structures: Construction Progress: Through February 2018, the CM006 contractor continued to complete base contract work, and open NCR work necessary for SC.

CM007 – GCT Station Caverns and Track:

Construction Progress:

South Back of House, East and West: Continued stairway and duct bench construction, and continued electrical, mechanical and CMU installation.

North Back of House, East and West: Continued electrical, mechanical and CMU installation.

Cross Passageways #1 and #3 through #6, Access Tunnel #3, and 45th Street Lobby: Continued PAC construction.

East and West Caverns: Continued lower level platform precast wall installation, MEP work, Smoke Plenum precast installation, Mezzanine knee wall construction in the West Cavern, and continued grouting behind waterproofing in Access Tunnel #1.

Through February 18, 2018, MTACC reports that precast beams and decks are 76.3% complete. Precast platform walls and deck panels are 27.7% complete. The ESA PMT reported that the precast smoke plenum at the Upper Level in the West Cavern is 29.5% complete.

Track: Continued construction of the Direct Fixation Track on Fasteners (DFF) at Track WB1, in the 63rd St. Tunnel, Queens, using permanent plates. Continued construction of the Direct Fixation Track on Resilient Tie Blocks (RTB) at Tracks A, B/C, and D. Continued laboratory qualification testing of High Attenuation DFF and completed qualification testing for Special Trackwork (ST) RTB. Through February 18, 2018, MTACC reports that Track and Third Rail installation is 15.0% complete.

CM014A – Concourse and Facilities Fit-Out Early Work: Construction Progress: Through February 2018, the contractor continued to complete punch list items.

CM014B – Concourse and Facilities Fit-Out: Schedule: The CCM reported that MTACC is currently rebaselining some of the multiple milestones for the project.

Milestone #4 (Comm. Closets CC-C3, CC-C7, and Room B3265); originally March 5, 2017; now April 1, 2018 – This milestone has been split into 2 completion dates; 4A remains April 15, 2018, and 4B remains May 20, 2018, for extension of room CC-C7.

Milestone #5 (44th St. Vent Building) June 4, 2017, now June 2018, in large part because installation of the fans by the CS179 contractor is taking a lot longer than anticipated.

Milestone #5A (Completion of 48th St. Entrance) November 25, 2016 – This was delayed until October 2, 2017, and is now projected to be May 1, 2018. The elevator shaft work is continuing. The elevator head house work is ongoing. This milestone now also includes Elevator #17 and #22 at 335 Madison.

Milestone #6 (Communication Closets CC-C4, CC-C8) May 20, 2018. No further update. The redesign of the 47th St. Entrance is now the primary critical path. Structural Steel work has now become the secondary critical path and is significantly behind schedule. The Biltmore Room construction is now the tertiary critical path.

Construction Progress: Through February 20, 2018, MTACC reported that structural steel erection in the new GCT concourse was 30% complete by piece count and 34% complete by tonnage. Cumulative metal deck progress was 7% complete. This work is proceeding very slowly and is impacting the schedule and the CS179 contract. Electricians continued with installation of communication racks and available boxes for electronic doors. Installations of air handling units, ductwork, fan coil units, and other mechanical installations continued throughout the concourse.

Biltmore Connection and Elevator #22: The existing concrete slab in this area has been removed. At Elevator #22, placement of Shaft Walls to the Sub-Cellar Level continues.

Wellways: In Wellways #1 and #2, escalator work nears completion and is ready for “In Contract Maintenance” (Phase 4). The contractor is ready to start erection of rigging steel at Wellways #3 and #4.

44th Street Vent Building: CS179 is preparing to install fans in the vent building. CM014B has repaired the sidewalk elevation discrepancies.

47th Street Cross Passage: This area has become the primary activity on the Critical Path because of the redesign of the entrance to compensate for the apparent loss of access to the previous designed 48th Street Entrance.

East 48th Street Entrance: Steam main work is complete. Backfilling and paving the south street is underway.

East 50th Street Vent Building: The Vent Building continues in full fit-out mode. Work includes installation of conduit and pulling branch wires in all rooms in the First Basement, Second Basement, and Concourse Levels. Installation of Elevator #9 continues.

VM014 – Vertical Circulation Elements (Escalators and Elevators):

The contractor continues to report that the access dates that it receives from the CM014B contractor continue to be extended, and despite several meetings, no resolution has been reached. The PMOC continues to project that this contract substantial completion date will be extended.

Construction Progress: MTACC reports that, through 4Q2017, the contractor had completed 57.8% of the contract. 12 out of 14 elevators and 14 out of 22 escalators had been fabricated for the CM014B contract. Preparations are underway for the fabrication and delivery of the 16

escalators and 6 elevators for the CM007 contract. Scheduled delivery dates remain unchanged, with escalator delivery taking place between July 9, 2018, and February 28, 2019, and elevator delivery between August 10, 2018, and December 6, 2018.

Queens Contracts

Costs and schedule data are tabulated below for active Queens Contracts.

	Current Budget	Appr'd Contract	Rem Budget	Invoice Cost	EAC	Planned Comp	Invoice Comp	Current BL SC	Forecast SC	Notes
CQ032	265.4	262.4	3.0	260.6	263.7	100.0%	99.3%	9/6/16	4/13/18	
	nc	(-0.7)	+0.7	nc	nc	nc	+0.3%	nc	nc	
	265.4	261.7	3.7	260.6	263.7	100.0%	99.6%	9/6/16	4/13/18	
CQ033	308.0	291.8	16.2	29.8	308.0	NA	10.2%	8/10/20	12/8/20	
	nc	+2.1	(-2.0)	+18.5	nc	NA	+6.2%	nc	nc	
	308.0	293.9	14.2	48.3	308.0	NA	16.4%	8/10/20	12/8/20	

Notes: For each contract: line 1 = prior value; line 2 = period change – nc = no change; and, line 3 = current value.

CQ032 – Plaza Substation and Queens Structures: Construction Progress: During February 2018, the CQ032 contractor continued preparation of documentation, and resolution of open NCRs necessary for SC.

CQ033 – Mid-Day Storage Yard Facility: Construction Progress: During February 2018, the CQ033 contractor continued the following activities: CAM Platform work, traction power ductbank and manhole work, Yard Lighting work, Pump Station work, sanitary sewer work, Personnel Access Bridge foundation work, and demolition of the Montauk approach structure. Street utilities work pending re-design, water line work pending GEC review, and Plaza grading are scheduled to start by the end of March 2018.

Systems Contracts

Costs and schedule data are tabulated below for active Systems contracts.

	Current Budget	Appr'd Contract	Rem Budget	Invoice Cost	EAC	Planned Comp	Invoice Comp	Current BL SC	Forecast SC	Notes
CS179*	606.9	552.6	55.0	362.2	605.9	66.2%	65.6%	7/1/20	11/30/20	
	nc	+0.2	(-0.8)	+6.7	(-0.7)	nc	+1.2%	nc	nc	
	606.9	552.8	54.2	368.9	605.2	66.2%	66.8%	7/1/20	11/30/20	
CS084*	79.7	73.0	6.7	11.0	79.7	74.2%	15.2%	12/2/19	9/2/20	
	nc	(-0.1)	+0.1	+1.0	nc	nc	+1.2%	nc	+28cd	
	79.7	72.9	6.8	12.0	79.7	74.2%	16.4%	12/2/19	9/30/20	
VS086*	21.8	19.9	1.9	8.3	22.1	NA	33.1%	10/14/19	10/14/19	
	nc	nc	nc	nc	+0.1	NA	+8.5%	nc	nc	
	21.8	19.9	1.9	8.3	22.2	NA	41.6%	10/14/19	10/14/19	
VH051	30.2	29.5	0.7	28.8	30.2	NA	97.6%	4/30/15	5/20/18	
	nc	nc	nc	nc	nc	NA	nc	nc	nc	
	30.2	29.5	0.7	28.8	30.2	NA	97.6%	4/30/15	5/20/18	

Notes: For each contract: line 1 = prior value; line 2 = period change – nc = no change; and, line 3 = current value.

* The SC dates shown in the above table are based on the current approved baseline schedules, which do not consider the many open and unresolved issues that each contract has. The PMOC believes that inclusion of such issues will have significant negative impact on the respective SC dates.

CS084 – Tunnel Systems Package 4 – Traction Power Systems: The information for CS084 is supplemented by discussions at a mid-February 2018 Progress Meeting that reviewed contract progress up to February 14, 2018. The contractor continues to contend that the variance in the actual versus planned progress is because: 1) funds have not been expended as originally projected due to delays in approving the substation designs and equipment; 2) fabrication of the substations

and procurement of equipment is behind schedule because designs were not approved as forecast; and, 3) the lack of unlimited access to all substation rooms has precluded the contractor from performing many construction activities. The contractor continues to indicate that all of the contract milestones are delayed as a result of delays associated with the approval of substation designs and the resolution of Supervisory Control and Data Acquisition (SCADA) requirements. The timely development and issuance of necessary contract modifications continues to be an issue requiring improvement.

Design Progress: The contractor continues to assert that previous delays in receiving comments from MTACC for C08 facility switchgear, SCADA requirements, PLC information, and general C08 substation design impacted its ability to meet its own original design, procurement, fabrication, and installation schedules. Despite continued interaction by MTACC senior management with LIRR senior management, the LIRR's submittal/comment review process is still in need of improvement and an item of increasing concern. The design of the C08 Substation continues to be on the primary critical path for the contract; and the continuing delay in approving the designs for this location are, per the contractor, causing a day-to-day delay in the overall contract schedule. The main issue continues to be the previously noted re-design of the C08 communications and storage rooms. The contractor continued to advise MTACC that it needs information about the communications equipment and requirements to re-design the C08 rooms and ensure that all structural requirements for the pre-fabricated building are adequate. MTACC is now considering moving the design and installation of the fire alarm system in the C08 substation from the CS084 contract to the CS179 contract. This action would enable the CS084 contractor to progress the final C08 room layout design; but will require contract modifications to both contracts, as neither contractor will progress or accept the work scope change without a contract modification or directive from MTACC. Design issues for cable routing inside the C06/C07 substations remain unresolved. The PMOC continues to have concerns about the length of time it is taking to address the various design approval issues.

Construction Progress: The contractor continues to cite coordination issues, design approval delays, and differing site conditions as its reasons why work at the various locations cannot progress. MTACC issued Stop Work Orders (SWO) at various locations to have time to address some of the differing site conditions and to issue contract modifications, where appropriate. Dates for lifting the SWOs are still undetermined. Each month, the contractor submits a list of what it contends are deficiencies that preclude beginning construction activities in, or completing designs for, the specific facilities. With the exception of very limited preliminary construction at the C05 substation, every one of the eight substations has some level of noted deficiencies precluding the start of significant construction by the contractor. While MTACC continues to review the list for validity and has indicated that it would take any required appropriate action, many of the items have, from month to month, remained on the list with no apparent resolution by MTACC. A number of the cited issues involve coordination with other contracts and will require the development and issuance of contract modifications to various contracts. Both MTACC and the contractor continue to review the possibility of re-sequencing the work in the substations to progress as much work as soon as possible. The PMOC is of the opinion that there are five (5) issues of concern on this contract that pose a significant risk to the timely completion of this contract. They are: 1) the equipment delivery methodology for the C01/C02 substations; 2) the solution for the installation of the apparent missing conduit and manhole system for the C08 substation; 3) the recent failures of two traction power transformers during hi-pot (high potential) testing; 4) the lack of knowledge of the viability of the conduit and manhole systems for the various substations; and 5) the timing of cable installations at the C08 substation. Item Nos. 1, 2, and 4

were discussed in previous PMOC reports and remain as unresolved significant issues. Item No. 3, the 2nd failure of a required transformer while undergoing hi-pot testing, occurred in early February 2018. It is a significant manufacturing quality issue related to all the transformers provided under this contract; and, it raises significant concerns about the long-term operational capability of all the transformers manufactured and installed under this contract. The cause of this failure is under investigation. Item No. 5, the timing of the installation of cabling from the C08 substation to various track locations, is a new issue from the February 2018 Progress meeting. The contractor indicates that, due to access issues with cable reel placement and cable pulling equipment, it needs to complete the installation of cabling that exits the C08 cable vault before the C08 pre-fabricated substation is delivered and set in place on the existing foundation. That activity is shown on the contractor's schedule as starting in the Spring/Summer of 2018; and the commencement of this activity is dependent on developing and implementing a resolution to noted Issue No. 2 above, dealing with the apparent missing conduit and manhole system. MTACC needs to expedite resolution of these five significant open issues.

CS179 – Systems Package 1 – Facilities Systems: While MTACC reports that the SC date for this contract remains at November 30, 2020; it also reports that the contractor shows an SC date of March 24, 2020. However, MTACC questions the validity of the contractor's schedule because of numerous disagreements over logic ties, activity durations, out of sequence activities, and the contractor's ability to complete over 5,000 activities by September 1, 2018, to begin Integrated Systems Testing (IST). The PMOC agrees that the contractor's schedule appears to be unrealistic, especially considering that the contractor acknowledges that its schedule: 1) is based on the premise that all submitted designs are final (which is not the case); 2) considers that all field work is ready-to-go as currently understood (which is not the case); 3) does not include any design or testing contingency; 4) does not take into consideration any impact from the open NOCs it submitted; and, 5) does not address any impacts to the contract work from SWOs that remain in effect past the data date of the schedule. MTACC's goal to develop a realistic schedule by the end of November 2017 was not met and a new date for completion of that effort remains as undetermined. The three previously reported Buy/Ship America issues – HVAC units, public address system speakers, and video monitor display panels, remain unresolved and pose schedule risks to the successful and timely completion of this contract. There are also 58 NOCs, 45 of which MTACC agreed to issue Contractor Proposal Requests (CPR), that are contributing to the contractor's inability to finalize the system designs. MTACC's inability to develop and issue promised CPRs for the NOCs is a significant issue impacting progress on the contract. The contractor indicates that it has been waiting in excess of 200 days for 15 of the 45 NOCs needing CPRs; with an additional 3 in excess of 400 days and 2 more in excess of 500 days. The PMOC notes that the ESA Quarterly Progress Report 4Q2017 lists nine (9) CS179 Contract Options that were exercised. However, as previously noted by the PMOC, the MTACC report fails to indicate that Contract Option Nos. 4 and 5 were exercised in July 2017; bringing the total to 11 exercised Contract Options, which completes the exercising of all known Contract Options.

Design Progress: The approval of all 10 control system FDs, a critical activity, is now 21 months late. However, at the February 2018 Monthly Progress meeting, there was significant progress noted regarding the FD approvals. MTACC advised that 3 more FDs were formally approved by the LIRR, bringing the total approved FDs to 7 out of 10. The contractor is also responsible to design, install, and test 19 Non-Control systems; several of which continue to have FD progress falling behind schedule. Previously, despite not having LIRR approval of the FDs for the various Control and Non-Control Systems, MTACC directed the contractor to move forward with the development of test plans and equipment fabrication. The contractor complied and, even though

the FDs were unapproved, moved forward with the fabrication of equipment racks based on its interpretation of the FDs it submitted. Moving forward without approved designs is, as previously noted by the PMOC, a risk to the timely completion of this contract; and now, the contractor is indicating that any continued progress on both these efforts is being severely hampered by unanswered RFIs and unissued CPRs that have the potential to alter existing designs. The CS179 contractor advised MTACC that, because of SWOs issued on the CM007 contract that dealt with the construction of walls for communications rooms in the caverns, it is unable to progress any of the equipment layout drawings for the affected rooms. MTACC, while acknowledging this is an issue, reminded the CS179 contractor that it was also the prime contractor on the CM007 contract and the issue needed to be resolved internally by the contractor.

Construction Progress: In February 2018, the CS179 contractor continued progressing a substantial amount of various elements of work (installation of conduit, cable, fire stopping, fire standpipe, lighting, etc.) in the tunnels and at the various substation facilities where access was available and conditions warranted. Coordination issues with other contractors, unexpected field conditions, unresolved design issues, water infiltration remediation efforts, open NOCs/CPRs, and numerous Stop Work Orders continue to impact further progress. The subcontractor developing the Control and Non-Control systems continues to request information from MTACC to enable it to finalize testing plans and procedures, as well as plans for system training; but, due to the many open NOCs/CPRs and RFIs, MTACC has been unable to provide much of that information.

VS086 – Systems Package 3, Signal Equipment Procurement: The information for VS086 is supplemented by discussions at a mid-February 2018 progress meeting that reviewed progress up to February 22, 2018. In July 2017, MTACC issued a contract modification to adjust the interim milestones for this contract. However, in October 2017, both MTACC and the contractor agreed that the contract milestones need to be re-baselined again to address open design, fabrication, and testing issues noted in previous PMOC reports and under Design Progress, below. It remains unclear when this schedule refinement will take place; or, if it will impact the contract substantial completion date.

Design Progress: The contractor continues to raise concerns over the timeliness of responses from the MTA on design submittals and inquiries and asserts that this lack of timely responses caused, and continues to cause, delays in the progression of the work. There are now six (6) major unresolved design issues cited by the contractor that continue to impact progress towards design completion. The six issues are: 1) the approval and use of light emitting diodes (LED) for tunnel signal units; 2) the approval and use of TRU-III track circuit equipment; 3) the incorporation of PTC into the design; 4) the approval and use of ATT-20 track circuit equipment; 5) the delayed demonstration and approval of the Signal Local Control System (SLCS), purportedly because of commercial issues between MTACC and the CS179 contractor; and 6) a delay to Factory Acceptance Testing (FAT) and Factory Integrated Acceptance Testing (FIAT) of equipment and systems because the CS179 contractor is not ready with its designs and systems to enable it to participate in the FAT and FIAT. Issue Item Nos. 1, 2, 3, and 4 were all noted in previous PMOC reports; and, very little progress on resolving them is apparent to the PMOC. Issue Nos. 5 and 6 were just recently reported by the contractor. A previously categorized major design issue, the approval and use of Low Smoke Zero Halogen (LSZH) wire in the signal cases, was partially resolved with the recent LIRR approval of the LSZH wire and the contractor's issuance of a Purchase Order for it. While the significance of the issue with using LSZH wire is reduced, the re-wiring of signal cases already fabricated and tested will have an, as yet undetermined, impact on the contract schedule and the commercial aspects of this contract. Once the Plaza Interlocking fabrication, which includes the SLCS and wiring of signal cases with LSZH wire, successfully

passes the FAT, delivery of Plaza Interlocking, which was to occur in April 2017, can proceed; that delivery date remains as undetermined. The impact of this delay in delivery on the overall contract is unknown. The timely development and issuance of contract modifications continues to be an issue impacting progress. MTACC further notes that any impact on overall design completion, equipment procurement, and schedule can only be determined when design issues are resolved and contract modifications, if any, are approved.

Harold Interlocking Contracts

Costs and schedule data are tabulated below for active Harold contracts.

	Current Budget	Appr'd Contract	Rem Budget	Invoice Cost	EAC	Planned Comp	Invoice Comp	Current BL SC	Forecast SC	Notes
CH061A	42.0	34.3	7.7	13.8	37.6	68.1%	40.1%	5/28/18	5/28/18	
	nc	nc	nc	+1.5	+1.4	nc	+4.5%	nc	nc	
	42.0	34.3	7.7	15.3	39.0	68.1%	44.6%	5/28/18	5/28/18	

Notes: For each contract: line 1 = prior value; line 2 = period change – nc = no change; and, line 3 = current value.

CH061A – Track A Cut and Cover Structure: Construction Progress: During February 2018, the CH061A contractor completed placement of all invert concrete throughout its Tunnel A construction area, placed one tunnel roof section, continued to place waterproofing, re-bar, and prepare the portal area for final sidewall concrete placement, continued to place waterproofing and re-bar at the east end of the structure, and completed installation of catenary poles for the PW2 Overrun, an extension of existing catenary over the LIRR Eastward Passenger/Port Washington #2 Track. The PMOC notes that there are only 3 months remaining to complete approximately 50% of the work and, therefore, expects that there will be a significant extension of the forecast Substantial Completion date.

Railroad Force Account Contracts

Costs and schedule data are tabulated below for active Force Account contracts.

	Current Budget	Appr'd Contract	Rem Budget	Invoice Cost	EAC	Planned Comp	Invoice Comp	Current BL SC	Forecast SC	Notes
FHA01	18.8	18.8	--	18.6	18.8	100.0%	98.9%	2/4/16	12/16/17	1,2
	nc	nc	nc	nc	nc	nc	+0.6%	nc	nc	
	18.8	18.8	--	18.6	18.8	100.0%	99.5%	2/4/16	12/16/17	
FHA02	60.2	60.2	--	54.8	66.4	100.0%	90.2%	8/15/17	2/24/19	1,2
	nc	(-21.4)	+21.4	+0.4	nc	nc	nc	nc	nc	
	60.2	38.8	21.4	55.2	66.4	100.0%	90.2%	8/15/17	2/24/19	
FHL01	24.4	24.4	--	24.4	24.4	100.0%	100.0%	4/9/15	6/7/18	1,2
	nc	(-3.6)	+3.6	nc	nc	nc	+5.7%	nc	nc	
	24.4	20.8	3.6	24.4	24.4	100.0%	105.7%	4/9/15	6/7/18	
FHL02	96.6	96.6	--	93.7	96.6	100.0%	95.7%	11/25/16	8/19/20	1,2
	nc	(-48.4)	+48.4	+1.3	nc	nc	+1.0%	nc	nc	
	96.6	48.2	48.4	95.0	96.6	100.0%	96.7%	11/25/16	8/19/20	

Notes: For each contract: line 1 = prior value; line 2 = period change – nc = no change; and, line 3 = current value.

1 Current approved FA agreements within work stages are amended on an "as needed" basis, which are not fully scoped.

2 Contract Awards for Force Account work are made on an as needed basis. Actual Cumulative % Complete based on Total Budget Value, not Approved Contract.

FHA01 – Harold Stage 1 Amtrak: Construction Progress: Amtrak did not perform any significant Stage 1 construction during February 2018. The PMOC is not concerned about this because the remaining Stage 1 work will only take one day and is presently scheduled after the LIRR 2018 Signal cutover in May 2018.

FHA02 – Harold Stage 2 Amtrak: Construction Progress: Amtrak did not perform any significant Stage 2 electric traction work during February 2018, although it did resume sporadic signal work on the New Haven Tracks east of Harold Interlocking in support of the LIRR Signal cutover scheduled for May 2018. Although the PMOC remains concerned about the signal work because it is a critical predecessor activity to the LIRR May 2018 Signal cutover, it is noted that the PMT recognizes the situation and is currently developing a work-around plan with Amtrak.

FQA65 – Loop Interlocking Amtrak: The PMOC notes that FQA65 is a Regional Investment project that will provide independent utility not required for LIRR service into GCT, although it can impact the FFGA Harold scope of work by placing additional demands for scarce Amtrak force account resources.

Construction Progress: Amtrak did not perform any significant FQA65 construction during February 2018. The PMOC is not concerned about this because it is not a critical component of the “ESA First” construction schedule and, as such, will not be required for several years.

FHL01 – Harold Stage 1 LIRR: Construction Progress: During February 2018, LIRR 3rd Rail personnel continued installation of 3rd rail traction power cables between main line tracks and the new G02 Substation.

FHL02 – Harold Stage 2 LIRR: Construction Progress: During February 2018, LIRR signal personnel continued to perform FRA signal tests and other pre-cutover activities in preparation for the cutovers of the new “H1”, “H2”, “H5”, “H6”, and Location 30 Central Instrument Locations (CILs) scheduled for May 2018. During the last weekend in February, signal personnel successfully completed a major “H5” and “H6” cutover pre-test sequence. LIRR 3rd Rail personnel installed 3rd rail on the new ML4 Track, which is scheduled to be placed in service just prior to the CIL cutovers in May 2018.

d. Quality Assurance and Quality Control

The PMOC reports Quality Assurance/Control issues in its quarterly comprehensive reports. MTACC did not report any significant issues regarding Quality Assurance or Quality Control in its ESA Quarterly Progress Report 4Q2017.

2.0 SCHEDULE DATA

Status and Schedule Contingency

The schedule information in this report is based on the ESA Integrated Project Schedule (IPS) 101, having a data date of January 1, 2018, and IPS Progress Report. The January 1, 2018 IPS forecasts for the Target Revenue Service Date (RSD) and the Late RSD remain unchanged: April 15, 2021, and, December 13, 2022, respectively.

(b)(4)

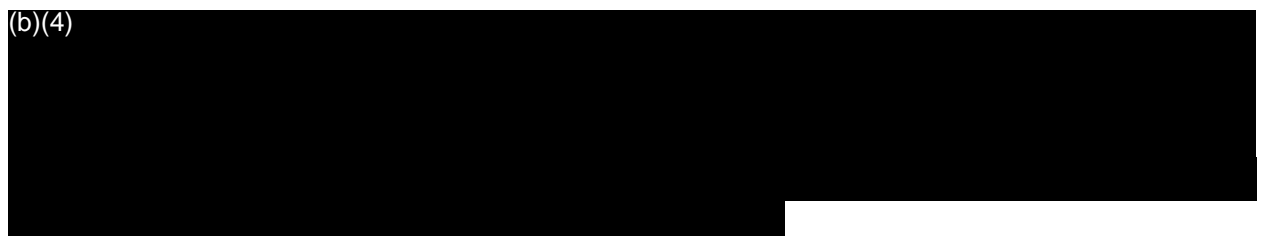
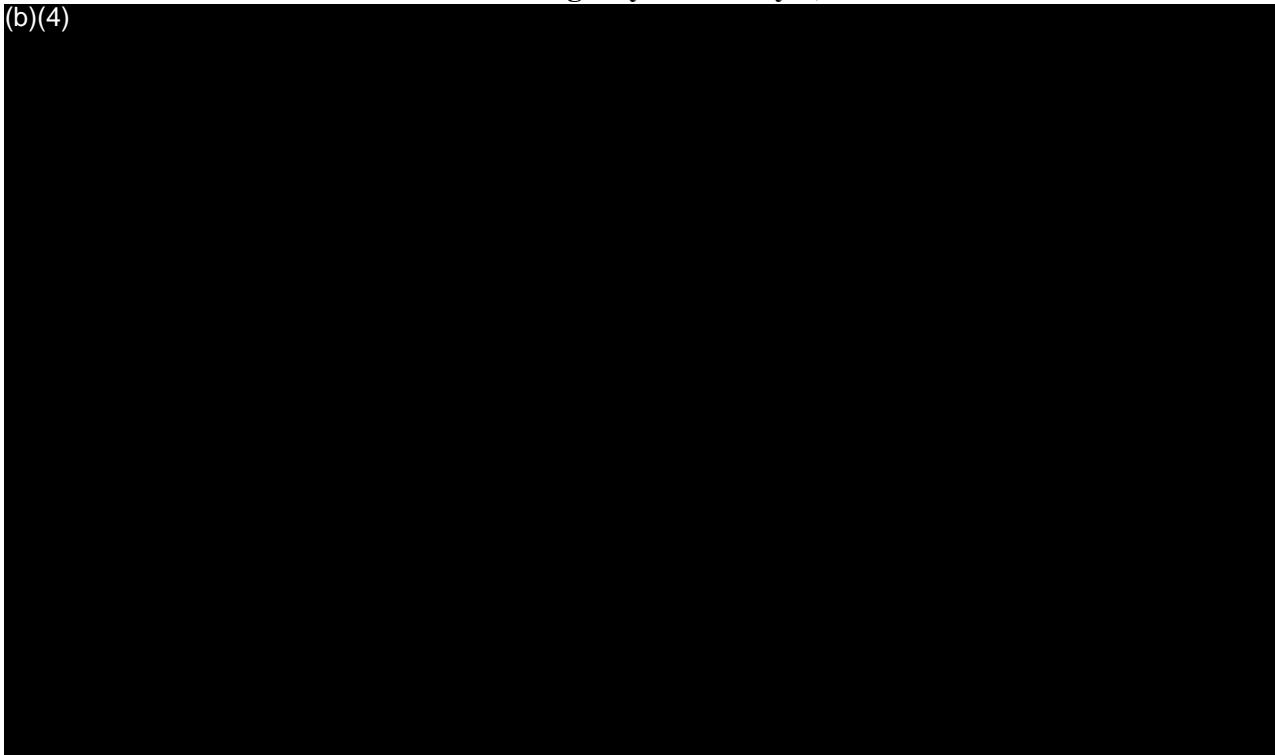


Table 2.1 shows dates, remaining durations and contingencies for the Target, Late, and FFGA Revenue Service Dates. The schedule contingency percentages for each remaining duration have increased during the update period due to the normal decrease in remaining duration each month (percentage increases as the denominator diminishes).

Table 2.1: Schedule Contingency – January 1, 2018 ESA IPS 101

(b)(4)



Program Primary Critical Path – Harold Interlocking

The ESA January 1, 2018 IPS shows that the Program primary critical path still runs through work in Harold Interlocking, as noted above; however, there were changes in the activities that comprise the initial portion of the path. Previously, the work that took place between the start of Access Restraint #1 and its release with CIL final decommissioning was controlled by force account packages FHA03 and FHL04. The current IPS schedule has been augmented with activities for CH057D, which now have precedence in controlling the critical path during this period: July through November 2018. Table 2.2 shows the contracts and work that comprises the Harold work path along with the IPS forecast start and finish dates.

Table 2.2: Critical Path – January 1, 2018 IPS

Contract / Scope	Duration	Start	Finish
FHL02: CIL Testing and Cutovers	139 CDs	1-Jan-18	20-May-18
CH057D: Prep / FHA03 Remove NEC NH1 Catenary	53 CDs	21-May-18	13-Jul-18
CH057D: Track and switch work - AR #1	113 CDs	14-Jul-18	4-Nov-18
FHL02: CIL Decommissioning	28 CDs	5-Nov-18	3-Dec-18
CH058A: B/C Approach Structure	658 CDs	3-Dec-18	21-Sep-20
FHL04: Harold Stage 4	85 CDs	22-Sep-20	16-Dec-20
LIRR Staff Training and LIRR Final 3-Month Period	119 CDs	17-Dec-20	15-Apr-21
Target Revenue Service Date			15-Apr-21
ESA Program Schedule Contingency	605 CDs	16-Apr-21	13-Dec-22
Late Revenue Service Date			13-Dec-22

Discussion of Progress along the Critical Path

The January 1, 2018 IPS shows that there were no significant changes to the primary critical path through Harold Interlocking and held its completion date during the update period. The work on

Harold CIL pre-cutover testing, which will control the Program Critical Path until May 2018, has suffered some delays. The pre-cutover testing activity for the H5, H6, and Location 30 CILs lost approximately three weeks and the pre-cutover testing activity for H1, H2, and Location 30 CILs lost approximately 2 days during the month of December 2017. The overall impact on the work path was minimal since the cutover pre-testing activity for H1, H2, and Location 30 CILs is the one driving the path.

The PMT has augmented the IPS this month with placeholder activities for CH057D (due to be awarded in February 2018 but was not), which took over this segment of the critical path. The updated CH057D fragnet pushes out the FHL02 CIL decommissioning activity by one week, although the time lost on the path is to be recovered during the construction of CQ058A (also represented in the IPS by placeholder activities since it is yet to be awarded).

Maintaining the schedule after the CIL cutovers will hinge on completing procurement and issuing NTP for CH057D and then getting a contractor schedule that complies with the current IPS plan. This is also true for CH058A with is planned to start June 2018.

90-Day Look-Ahead of Program Critical Activities/Milestones

Table 2.3 shows the Program critical dates in the January 1, 2018 IPS forecast to occur within the next 90 days. Completion of the pre-cutover testing – scheduled to be completed by February 21, 2018 – is a risk since a portion of this work is planned for the weekends of February 24-25, March 3-4, and March 10-11. Although these dates extend beyond their planned finish dates they are within the float activity (CSR1280). The PMT reports that it has 10 weeks of float in the schedule for this work.

Table 2.3: Program Critical Dates 90 Day Look-Ahead – January 1, 2018 IPS

Activity	Name	Start	Finish	Float
FHL02...				
CSR1240	H5/H6/30 South Pre-Cutover Testing	3-Jul-17	22-Jan-18	0
CSR1270	H1/H2/30 North Pre-Cutover Testing	7-Jul-17	23-Feb-18	0
CSR1280	Days Lost/Weekend Work /Cutover Float	26-Feb-18	4-May-18	0
66330	Cutover (2GHI): H5, H6, Loc 30 CIL + 6156, 6176, 6167 + ML4 Cut & Throw	5-May-18	6-May-18	0
CSR1170	Pre-testing for H1, H2, 2J	7-May-18	18-May-18	0
07260	Cutover 2J: H1, H2, Loc 30 CIL	19-May-18	20-May-18	0

Sub Program Longest Path – Manhattan/Systems

The January 1, 2018 IPS Report shows that activities comprising the Manhattan/Systems longest path remained unchanged during the update period and it currently has 16 CDs of float. The critical path runs through CM007 construction of smoke plenums, platforms, and conduit installation in the caverns; then through CS179 equipment installation, wire pulling and testing in the caverns; and finishes with completion of CS179 Integrated Systems testing on November 30, 2020. A full month of progress was lost on the first activity on the path – smoke plenum fabrication. The entirety of this loss is forecast to delay subsequent work along the path through installation of precast elements up to the installation of electrical conduit. The sequence of electrical installations has been adjusted to recover the lost month by December 7, 2018; with the remainder of the path maintaining the same activities and dates that were previously forecast.

Sub Program Longest Path – Queens

The January 1, 2018 IPS Report shows that the activities comprising the Queens longest path remained unchanged during the update period and it currently has 8 CDs of float. The path reflects the incorporation of time to perform catenary work, which is being transferred from CH061A to CQ033, and runs through construction and integrated testing of the Mid-Day Storage Yard. Approximately two weeks of progress was lost on the first activity on the path – Amtrak signal trough resolution and catenary pole construction. The lost time was recovered by reducing the planned duration for Amtrak catenary wire transfers and the balance of the path maintained previously forecast dates.

Upcoming Contract Procurements

Table 2.4 shows the status of current and upcoming contract procurements, as reported in the January 1, 2018 IPS.

Table 2.4: Procurement Schedule

Contract Description	Advertise Date	Bid Date	NTP	Project Length	Substantial Completion
CS086: Tunnel Systems Package 2 – Tunnel Signals	8/10/17A	10/31/17A	2/5/18*	33 mos.	11/5/20
CH057D: Harold Trackwork	11/30/17A	2/7/18	2/27/18*	15 mos.	5/23/19
CH058A: B/C Tunnel	2/20/18*	4/17/18	6/18/18	27 mos.	9/21/20

Note: * The PMOC has not received corroboration that these planned dates were achieved.

The procurement process for CS086, Systems Package 2 Signal Installation, is shown as reported in the January 1, 2018 IPS report. The planned NTP date of February 5, 2018, was not achieved. The next opportunity for this award to be presented to the MTA board will be at the March 2018 board meeting.

The MTA announced the result of the bid opening for CH057D, Harold Trackwork, on February 20, 2018. Four bids were received ranging in value from \$25.8 million to \$62.7 million. The NPT has not been issued as of this writing.

The planned advertisement date for CH058A, B/C Tunnel, slipped to February 20, 2018, from January 16, 2018, and the remaining procurement and contract dates remained the same.

PMOC Concerns

The following summarizes the PMOC’s concerns about the IPS:

1. The PMOC is concerned about the transparency of the rationale behind the revisions made to the Program’s critical paths. For example, a portion of the Harold Interlocking work path was taken over by new activities for CH057D, with some existing activity IDs and durations changed, and related logic changes.
2. The PMOC is concerned that, with three years remaining to the Target RSD, the float on the three most critical paths is insufficient. This concern is compounded due to critical procurements that are needed but have historically shown slippage.
3. The PMOC is concerned about the effect of the delays from lags in reviews, resolution of RFIs, design issues, coordination issues between contracts, and the change order process.

4. The PMOC remains concerned with the lack of progress on CS084. The PMOC supports the PMT working with CS084 to obtain an equipment fabrication schedule as soon as possible to improve the delivery dates and develop schedule contingency for installation. Delays on this contract may consume the 16 CDs of program float.
5. Loss of 120 CDs of float, from 128 to 8 CDs, along the Queens Sub Program Critical Path.

3.0 COST DATA

Funding

The ESA PMT is analyzing program costs, the result of which it anticipates presenting at the CPOC March 2018 committee meeting. If the analysis determines that additional funding is needed, the PMT will consider its options, which include a supplement in the 2015–2019 Capital Plan, to provide funds for anticipated cost increases. The PMOC notes that an ESA amendment to the 2015-19 Capital Plan is again being considered and that this represents a shift from the previous approach that would have required ESA to wait for the 2020-24 Capital Plan for access to additional funding. Until a funding plan is approved, if necessary, the PMT would use project contingencies to fund additional costs, including: railroad force account cost overruns; continuing OCIP coverage; Owner Initiated Changes to CM014B; as well extensions to the PM/CM, CCM, and GEC service contracts. Currently, the PMT forecasts that sufficient contingencies are available to cover planned contract awards and identified cost overruns through the fourth quarter of 2018.

Budget/Cost

The 4Q2017 MPR shows that the total project progress was 75.5% complete compared with planned progress of 79.3% of the \$10.178 billion Current Baseline Budget (CBB). The report also shows that construction progress reached 75.6% complete of the CBB compared with planned progress of 80.4%, based on invoiced construction costs. (Details of the project budget and expenditures are shown in report Appendix B and report section 1.0-c.)

During December 2017, various budget adjustments were performed, which included the reallocation of funds to establish an ESA budget of \$25 million for CH057D (due to be awarded in the near future) for third party and force account construction. Additional offsetting adjustments included reductions of approximately (b)(4), \$16.3 million from Harold LIRR Force Accounts, and \$4.6 million from Harold third party contracts. Full details are provided in Appendix B, Table 7. The PMOC remains concerned that there will be ongoing demands on the program budgets until the PMT completes the ESA cost assessment and makes related budget adjustments, if required.

The PMT cost review will include upcoming Systems and Harold procurements (CS086, CH057D, and CH058A), as well as anticipated cost increases. As previously reported, a 2016 Study by the PMT found that \$111.4 million in additional Amtrak and LIRR Force Account (F/A) costs would be needed to complete the ESA FFGA scope (Revenue Service) and \$245 million in additional F/A costs will be needed to complete the full Harold 14-4M alignment, including the Regional Investment scope. Also previously reported was a need for an additional \$191 million to fund the OCIP insurance program.

Contingency

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The PMOC remains concerned that there will be ongoing demands on the program's contingencies until the PMT completes the ESA cost assessment and makes related budget adjustments, if required. In 3Q2017, the PMOC completed an order-of-magnitude analysis using information about anticipated future costs and found that the program could likely maintain the minimum ELPEP contingency at the conclusion of the project; however, the PMOC does not yet see a clear way for the project to maintain the necessary ELPEP contingency levels on the way to reaching that goal.

Table 3.1: ESA Cost Contingency

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Change Orders/Budget Adjustments

The 4Q2017 MPR shows that eight construction Change Orders were executed during December 2017 (or after) with magnitudes greater than \$100,000.

Table 3.2: Change Order Log (magnitude > \$100,000)

Contract	Description / Mod No.	Amount
CH057A	Deletion of remaining scope of work and contract close out (mod. 32)	33,007,011
CM007	Deletion of restraining rail (mod. 26)	(706,884)
CM007	Value engineering change proposal smoke plenum (mod. 28)	(792,526)
CM014B	Elevator EL-13 pit elevation (mod. 105)	598,633
CQ032	Remove installed support excavation at 23 rd Street vent facility (mod. 88)	210,869
CQ033	B-928W and B-924WA material installation (mod. 8)	139,500
GEC	ESA MTA corporate IT network infra-structure (mod. 144)	390,809
GEC	CQ032 to CS179 scope transfers (mod. 149)	448,149

PMOC Concerns

1. ESA PMT has not included the costs of the items noted above (i.e. force account; OCIP; CM014B; professional services) in the project forecasts. MTACC is working to update the Project forecast and anticipates completing the effort in the first quarter of 2018.

2. The PMOC believes that additional funding may be required for the ESA project. Remaining ESA program contingencies will be used as additional costs are realized and accrue to the project. The MTA has deferred action on addressing potential funding shortfalls until it completes the ESA cost assessment, if required. A funding constraint could be a major risk.
3. Ongoing and possible future delays may result in increasing costs for the following contracts:
 - CS179 – the late completion of systems designs and resulting schedule compression needed to hold start of Integrated Systems Testing.
 - CS084 – the late completion of final design has delayed fabrication of some traction power equipment.
 - VS086 and CS086 – incorporation of Positive Train Control into the ESA signal system and technology issues.
4. Construction expenditures (i.e. invoiced costs, preliminary/pencil-copy DCBs) continue to lag significantly behind the planned/scheduled expenditures. This may be a negative indication about the ESA project’s ability to achieve the target date for revenue operations.

4.0 RISK MANAGEMENT

The PMOC focuses here on discussion of the most critical risks.

Harold Interlocking Risk Review

During 2Q2017, the ESA Risk Manager, working with the consultant risk assessment facilitator, conducted a comprehensive risk review of the remaining work in Harold Interlocking required to be complete to provide LIRR service into the new LIRR rail station at Grand Central Terminal. The risk workshop to evaluate the risks and quantify the probability of occurrence and cost and schedule impacts was held over a three-day period and included the primary stakeholders and the PMOC. MTACC continues to finalize the summary of the risk review results.

Harold Interlocking – ESA Risk

Harold Re-Sequencing Plan (“ESA First”) Risk

During 2016, 2017, and through February 2018, MTACC continued to adjust the “ESA First” Harold Re-sequencing to accommodate railroad force account constraints. As a result, the impacts caused by insufficient Amtrak support were reduced during this period, but not totally eliminated. This situation continues to be a challenge for MTACC.

Amtrak Preparation for Extended East River Tunnel Outages Risk

The PMOC has continuing concerns regarding the impact to the ESA Harold work due to the Amtrak program to harden East River Tunnel (ERT) Lines 3 and 4 in preparation for extended outages for ERT Lines 1 and 2 to complete Hurricane Sandy damage-related reconstruction work, originally planned for 2019, and now apparently planned for 2025. Amtrak has provided no details regarding how this change might affect the remaining predecessor hardening work for ERT Lines 1 and 4. Reliability issues might require Amtrak to make emergency repairs at any time between now and 2025.

LIRR Positive Train Control (PTC) Risk

There are two potentially significant impacts of PTC implementation: first, design changes to active contracts CS179 and VS086 and pending contract CS086; second, potential delay to the remaining ESA Harold work after the planned May 2018 LIRR CIL cutovers, should FRA not grant LIRR’s waiver request to postpone the December 31, 2018, deadline for PTC operation.

LIRR was not able to complete the PTC design in 4Q2017, as earlier projected, and design completion is now expected in 1Q2108. If FRA does not grant LIRR’s waiver request, LIRR may be required to significantly reduce its support for the ESA work in Harold in order to install, test, and activate PTC by the end of 2018. As of February 28, 2018, FRA has not formally responded to LIRR’s waiver request to postpone the PTC deadline.

Capital Funding Risk

The PMOC is concerned about potentially significant impacts to the program budget coming from anticipated additional costs and the possible resulting impact on the schedule to achieve the target Revenue Service Date. The veracity of this concern may become manifest once the PMT completes and presents its cost review in March 2018. Additional funding, if necessary, would likely be proposed for the current or next MTA Capital Plan. This funding risk is exacerbated by the lack of receptiveness that the MTA board has shown to requests for additional funds for other MTA programs. The specific impacts will not be known until ESA completes the re-evaluation.

ESA Vehicle Risk

The PMOC remains concerned about the schedule slippage of the LIRR federal vehicle procurement program for the M9-A vehicles because it has the potential to significantly impact delivery of the vehicles, and, hence, the MTACC’s Revenue Service Date. The PMOC notes, however, that the MTA issued the “Qualifications” portion of its two part vehicle RFP in November 2017. If LIRR solicits the second “Technical/Cost” portion on schedule, sufficient vehicles could be delivered on time to meet the vehicle requirements for the amended FFGA Revenue Operations Date of December 2023.

Manhattan/Systems Performance Risk

The primary PMOC concern is that this near critical schedule path currently has only 16 CDs of float and the forecast completion for the contract on this path – CS179 – extends to November 2020, approximately 33 months hence. The PMOC believes that it is likely that Manhattan/Systems schedule path could become critical in the near future.

5.0 ELPEP COMPLIANCE SUMMARY

The current status of each of the remaining main Enterprise Level Project Execution Plan (ELPEP) components is summarized as follows:

- **Technical Capacity and Capability:** MTACC previously indicated that it will review the Technical Capacity and Capability (TCC) Plan and propose revisions, if required, to reflect the current status of the Program. MTACC submitted an updated TCC Plan in September 2017 and the PMOC continues its review of the plans.
- **Continuing ELPEP Compliance:** The ESA project should continue to make additional improvements in the following areas: Management Decision; Design Development; Change Control Committee (CCC) Process and Results; Stakeholder Management; Procurement; and Risk-Informed Decision Making. The PMOC has noted progress in two previously identified areas – Issues Management and Timely Decision Making, particularly when responding to new issues arising with the railroads’ Force Account resource availability, track outages, and other issues regarding the remaining work in the Harold Interlocking.
- **Project Management Plan:** MTACC is using the current version of the PMP, Rev. 10, that the FTA accepted earlier this year.

- **Cost/Schedule Contingency:** MTACC has reached agreement with the FTA and the PMOC on the ELPEP minimum cost and schedule contingency hold points, levels, and drawdowns. MTACC continues to report the cost and schedule contingency levels against the ELPEP minimums in its quarterly reports to the FTA.

The PMOC notes that, with completion of the most recent Schedule Management Plan and Cost Management Plan updates as well as the FFGA amendment, the ESA project is better able to generally remain compliant with ELPEP.

- **Schedule Management Plan:** The ESA project should continue to make additional improvements to the Schedule Management Plan (SMP) in the following areas: Integrated Project Schedule (IPS) Updating, Forecasting, and Schedule Contingency Management against a current baseline schedule. MTACC is using the current version of the SMP, Rev. 2, dated September 2016, which the FTA accepted.
- **Cost Management Plan:** The ESA project should continue to make additional improvements to the Cost Management Plan (CMP) in the following areas: Project Level EAC Forecasting, Project Level EAC Forecast Validation, and MTACC Cost Contingency Management and Secondary Mitigation. MTACC is using the current version of the CMP, Rev. 2, dated October 2016, which the FTA accepted.

The PMOC anticipates the possibility that the PMT will update one or all of the Project, Cost and/or Schedule Management Plans to document changes called for by the incorporation of the MTACC President’s 6-point management plan for reducing potential programmatic risks.

Revisions to the ELPEP Document: As part of the process of updating the ELPEP document, the PMOC completed an independent evaluation of the minimum required future cost and schedule contingencies. During 1Q2016, MTACC and the ESA PMT accepted the FTA/PMOC recommended ELPEP cost and schedule contingency hold points, values, and curves for the remainder of the program. MTACC submitted an updated ELPEP with suggested revisions in September 2017 and the PMOC continues its review of the proposed revisions.

6.0 SAFETY AND SECURITY

Based on safety information supplied by MTA, the PMOC calculated ESA Injury Ratios for CY2018 through January 31, 2018, were 0.0 for Lost Time Injuries (LTI) and 0.0 for Recordable Injuries (RI). Both were below 2017 Bureau of Labor Statistics (BLS) Safety Guidelines of 1.7 for LTI and 2.8 for RI. Additionally, the ESA PMT did not report any significant security issues during January 2018.

7.0 ISSUES AND RECOMMENDATIONS

Design: The PMT design management team needs to focus on the timely achievement of intermediate milestones and working closely with the GEC to facilitate finalization of the scopes of work for remaining procurement and construction packages. Shifting scope between packages has made finalizing design documents and drawings very challenging and time consuming.

Also, the PMOC has observed the following:

- Approvals from the railroads, both LIRR and Amtrak, and other outside stakeholders, are requiring considerably more time than planned; and,
- LIRR is making changes that alter the design basis and result in time-consuming and costly re-design work by the GEC.

The ESA PMT needs to continue to monitor and better coordinate the interface of design reviews and equipment approvals between the GEC and LIRR for the CS084, CS179, and VS086 contracts. These shortcomings indicate possible technical capacity and capability issues in the particular design support areas. The PMOC acknowledges the efforts by senior management to resolve these issues and recognizes that some short-term improvements were achieved, but notes that more sustained effort is needed.

Procurement: The lack of stability in the contracting strategy and Contract Packaging Plan (CPP) remains a concern. Scope shifting among different packages delays completion and finalization of the required design packages and resulted in significant delays to the procurement schedules during 2016 and 2017. The PMOC continues to recommend that the ESA PMT make an effort to adhere to the current version of the CPP, rev. 11.0, and minimize shifting scope for the remainder of the project.

Water Infiltration Concerns Regarding Contracts CS179, CS084, and CQ032: The PMOC remains concerned about the numerous water infiltration issues in the electrical and electronic equipment rooms either constructed by, or provided for, these contracts. The PMOC notes that, to date, many of the water remediation efforts that have been employed have not been successful and this has caused delays to follow-on construction.

Contract CS179: The PMOC recommends that the ESA PMT continue making improvements regarding the PMOC's following concerns for CS179:

- Timely delivery and discussion about the contractors' monthly schedule submissions;
- Timely preparation and submission of documentation for two potential Buy/Ship America issues;
- ESA PMT responses to contractor NOCs and issuance of CPRs; and,
- Timely design review and approvals to contractor's design submittals.

Contract CS084: MTACC should prioritize the delivery of requested design information, the approval of substation designs, and the execution of contract modifications to preclude any further impact to substation design and fabrication. Additionally, the PMOC remains concerned about the issue related to the installation of traction power feeder cables between the C08 substation and the track, the live load (dynamic) testing of the C08 Substation, the integrated testing of all CS084 substations, management of coordination issues related to work area access issues with other contractors, and the resolution of access issues for the delivery of substation equipment at the C01/C02 substations. Also, no additional surveys have been conducted to verify availability of required conduit/manhole system for each TPSS.

Contract VS086: The PMOC remains concerned that there is no accurate and comprehensive schedule in place that would allow MTACC to effectively manage this contract and encourages MTACC to quickly complete discussions regarding the development of such a schedule that addresses all the issues currently identified on this contract. The PMOC is concerned that design decisions that have the potential to negatively impact the contract schedule are not being made in a timely manner. The PMOC encourages the MTACC management team on this contract to work with the LIRR and the GEC to provide timely answers and comments to design questions and submittals.

Project Funding: The project is at risk due to anticipated additional costs noted elsewhere in this report – that are not yet in the project forecast and for which considerations of additional funding have been deferred while the PMT updates the project cost forecasts. The PMOC is concerned about potential impacts on the program budget and schedule, as well as the Revenue Service Date.

The specific cost, budget, and schedule impacts will not be known until ESA completes its re-evaluation, anticipated in March 2018.

Project Budget: The PMOC remains concerned about the adequacy of remaining cost contingency to address major risks detailed in the Risk Management discussion below and potential other additional costs noted elsewhere in this report. (b)(4)

Project Schedule: The PMOC remains concerned about the ability of the program to make planned progress on the three most critical paths. Although key dates in late 2017 were achieved for CIL cutover pre-testing on the Harold path, the path also includes work by two contracts that are not yet procured – a process that has historically been problematic. The second and third critical paths – both two weeks or less behind the Harold path – have each realized significant lost time in 2017 and are dependent on timely procurement, award, and execution of future contracts.

Risk Management: The segmentation of construction packages has created multiple inter-contract interfaces and milestones. In the PMOC's opinion, managing inter-contract handoffs and interfaces will continue to be very challenging and represents significant MTACC-retained risks. The PMOC does recognize the PMT's efforts to mitigate some of the potential cost exposure by negotiating adjustments to schedule constraints across the four ESA contracts currently held by the same contractor (CM006, CM007, CS179, and CQ032). However, the PMOC believes that any meaningful schedule recovery, especially for CM007, CS179, and CS084, will be difficult at best.

The PMOC considers the major remaining risks for the East Side Access Program to be:

1. Program Funding – completion of the program cost review and inclusion, if necessary, in the MTA Capital Plan;
2. Recovery of lost time due to significant schedule delays on CM014B and CS084;
3. Successful execution of multiple hand-off interfaces across several contracts;
4. Contractor access and work area coordination in Manhattan;
5. Duration of integrated systems testing;
6. Continued availability of adequate Amtrak and LIRR force account resources;
7. Continued availability of required track outages in Harold Interlocking;
8. Maintaining adequate schedule performance of the remaining work in Harold Interlocking;
9. Remaining schedule path float will be used in the near future and Manhattan/Systems path will become critical; and,
10. Coordination risk retained by MTACC in Manhattan and the ESA tunnels with regard to construction and testing interface management for the systems work.

The comprehensive Harold risk review conducted in April 2017 identified a number of potentially significant risks that could delay completion of the critical work in Harold Interlocking planned for 2017-18 and cause significant delay to the Revenue Service Date. These risks include the following:

A. Major Risks included in the Risk Assessment

1. **Positive Train Control:** Implementation of Positive Train Control in Harold Interlocking to the degree necessary to achieve the December 31, 2018, FRA deadline. Risk is not well defined because scope and schedule details have not been finalized. Possible mitigation: LIRR submitted the formal waiver request to the

FRA in early October 2017 to postpone this requirement based on Harold remaining an active construction area after 2018. LIRR submitted a revision to its original waiver request in December 2017.

2. LIRR Force Account Performance: Ability of LIRR force account resources to provide both a very high level of support for third-party contractor access and protection and adequate productivity for significantly increased direct labor work involving track, 3rd rail, and signals, in accordance with the current ESA schedule.
 3. Northeast Quadrant Rail Work: Ability of MTACC-ESA, Amtrak, and LIRR to fully complete the planned work in the Northeast Quadrant in Harold Interlocking as per the current ESA schedule, on a very tight schedule involving major Amtrak and LIRR track outages.
 4. LIRR CIL Cutovers: Ability of LIRR to complete the pre-testing and final cutovers of CILs H1/H2/H5/H6/Loc 30 in accordance with the current ESA schedule plan.
 5. CH058A Preparation Work: Ability of Amtrak and LIRR force account resources to complete, in accordance with the current ESA schedule plan, all track, catenary, and third-rail work required prior to NTP for CH058A.
- B. Potential Risks with Major Schedule Impacts – Not Included in Risk Assessment
1. ESA Project funding constraints;
 2. Ongoing and future Regional Projects requiring extensive support from Amtrak; and,
 3. Amtrak program to reconstruct existing ERT Lines 1 and 2 has apparently been deferred until after the ESA program. The risk now is from the impact of unplanned emergency tunnel repairs.

The PMOC notes that, although MTACC continues to engage Amtrak to develop some specific mitigations for certain risks and continues to work on strategies for mitigating many of the other identified risks, continued shortcomings in provision of adequate force account resources have adversely impacted the current Harold schedule and have, over time, caused the remaining Harold work to become the ESA program schedule critical path. During February 2018, this became a significant problem, particularly with regard to Amtrak Electric Traction (ET) support. The PMOC recognizes that MTACC and ESA have been proactive in dealing with these issues as they arise and also recognizes ESA's efforts to re-baseline the remaining work in Harold Interlocking to reflect more realistic expectations of Amtrak support. However, the situation still requires improvement and the PMOC recommends that the PMT actively engage executive management in MTACC and MTA to assist with resolution of outstanding issues with Amtrak and LIRR.

Through February 2018, the Moynihan Station project remained as Amtrak's top priority for assignment of the local division force account resources. The PMOC believes that this situation needs to change in order for Amtrak to provide the required force account resources and track outages required to support ESA's schedule for completion of the remaining critical work in the Harold Interlocking scheduled through 2018.

APPENDIX A – ACRONYMS

AFI	Allowance for Indeterminates	IST	Integrated System Test
ARRA	American Recovery and Reinvestment Act	LIRR	Long Island Rail Road
AWO	Additional Work Order	LSZH	Low Smoke Zero Halogen
BIM	Building Information Model	MNR	Metro-North Railroad
BLS	Bureau of Labor Statistics	MOD	Contract Modification
BSA	Buy/Ship America	MPR	Monthly Progress Report
C&S	Communication and Signals	MTA	Metropolitan Transportation Authority
CBB	Current Baseline Budget	MTACC	Metropolitan Transportation Authority Capital Construction
CCC	Change Control Committee	NCR	Nonconformance Report
CCM	Consultant Construction Manager	NOC	Notice of Change
CCTV	Closed Circuit Television	NTP	Notice to Proceed
CD	Calendar Day	NYCT	New York City Transit
CIL	Central Instrument Location	OCIP	Owner Controlled Insurance Program
CIR	Central Instrument Room	PAC	Pneumatically Applied Concrete
CM	ESA Construction Manager assigned to each contract	PCO	Proposed Change Order
CMP	Cost Management Plan	PLC	Program Logic Control
CMU	Concrete Masonry Unit	PMOC	Project Management Oversight Contractor (Urban Engineers)
ConEd	Consolidate Edison Company	PMP	Project Management Plan
CPOC	Capital Program Oversight Committee	PMT	ESA Project Management Team
CPP	Contract Packaging Plan	QA	Quality Assurance
CPR	Contractor Proposal Request	QPR	Quarterly Progress Report
DC	Direct Current	RFI	Request for Information
DCB	Detail Cost Breakdown	RFP	Request for Proposal
DFF	Direct Fixation Fastener	RMP	Risk Management Plan
EAC	Estimate at Completion	ROD	Revenue Operations Date
ELPEP	Enterprise Level Project Execution Plan	ROW	Right of Way
ERT	East River Tunnel	RPR	Relocated Primary Route
ESA	East Side Access	RSD	Revenue Service Date
ET	Electric Traction	RTB	Resilient Tie Block
F/A	Force Account	SC	Substantial Completion
FAT	Factory Acceptance Testing	SCADA	Supervisory Control and Data Acquisition
FD	Final Design	SDR	Second Design Review
FFGA	Full Funding Grant Agreement	SLCS	Signal Local Control System
FIAT	Factory Integrated Acceptance Testing	SMP	Schedule Management Plan
FRA	Federal Railroad Administration	SMS	Security Management System
FTA	Federal Transit Administration	SWO	Stop Work Order
GCT	Grand Central Terminal	TCC	Technical Capacity and Capability
GEC	General Engineering Consultant	TPSS	Traction Power Substation
HVAC	Heat, Ventilation and Air Conditioning	TSR	Track and Signal Route
IPS	Integrated Project Schedule	WBY	Westbound Bypass Tunnel
		YSB	Yard Services Building

APPENDIX B – TABLES

Table 1: Summary of Critical Dates

Program Milestone	FFGA	Forecast (F) Date, Actual (A) Date		Amended FFGA Dates
		Project Sponsor*	PMOC**	
Begin Construction	Sept. 2001	Sept. 2001 (A)	Sept. 2001 (A)	Sept. 2001
Construction Complete	Dec. 2013	Dec. 2022 (F)	Sept. 2023 (F)**	Dec. 2023
Revenue Service	Dec. 2013	Dec. 2022 (F)	Sept. 2023 (F)	Dec. 2023

Notes: * Project Sponsor forecast Revenue Operations Date per presentation 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
(Cost shown in millions)

	FFGA			MTA Current Baseline Budget (CBB)			Expenditures January 1, 2018	
	Original FFGA	Amended FFGA	Pct. of FFGA	Obligated	CBB	Pct. of Total CBB	Expenditures	Pct. of CBB
Grand Total	7,386.0	12,038.0	100.00%	9,627.4	11,214.0	100.00%	8,142.7	72.61%
Financing Cost	1,036.0	1,116.0	9.27%	617.6	1,036.0	9.24%	617.6	59.61%
Total Project Cost	6,350.0	10,922.0	85.97%	9,009.8	10,178.0	90.76%	7,525.1	73.93%
Federal Share	2,683.0	2,683.0	36.33%	2,698.8	2,699.0	24.07%	2,698.0	99.96%
5309 New Starts share	2,632.0	2,632.0	35.63%	2,436.7	2,437.0	21.73%	2,435.9	99.95%
Non New Starts share	51.0	51.0	0.69%	66.7	67.0	0.60%	66.7	99.55%
ARRA	0.0	0.0	0.00%	195.4	195.0	1.74%	195.4	100.21%
Local Share	3,667.0	8,239.0	49.65%	6,311.0	7,479.0	66.69%	4,827.1	64.54%

Table 3: Project Budget and Invoices
(Cost shown in millions)

Elements	Baseline Budget June 2014	January 1, 2018			
		Current Budget	Actual Awards	Invoiced to Date	Inv. Pct. of Budget
Construction Subtotal	7,379.3	7,549.6	6,985.1	5,569.9	73.78%
Soft Costs Subtotal	2,798.5	2,628.2	2,024.8	1,955.1	74.39%
Engineering	720.6	735.9	735.4	718.6	97.64%
OCIP	282.6	307.6	307.6	307.4	99.92%
Project Mgmt.	972.2	972.2	859.9	811.5	83.47%
Real Estate	182.1	178.0	119.2	117.7	66.12%
Rolling Stock	202.0	202.0	2.7	0.0	0.00%
Program Reserve	(b)(4)				
Total w/o Financing					

Note: ESA carries the Rolling Stock Reserve as an off-line cost, not in the Budget

Table 4: Comparison of Standard Cost Categories: FFGA vs. CBB
(Cost shown in millions)

Standard Cost Category	FFGA	June 2014 Project Budget	Amended FFGA	Oct 2017 CBB	Nov 2017 CBB	Dec 2017 CBB	CBB / FFGA Variance	CBB / Amende d FFGA Variance
10 - Guideway & Track Elements	1,988.7	3,405.5	3,353.4	3,509.5	3,510.8	3,524.6	77.23%	5.11%
20 - Stations, Stops, Terminals, Intermodal	1,168.7	2,238.2	2,326.8	2,328.2	2,328.2	2,328.2	99.22%	0.06%
30 - Support Facilities (Yards, Shops, Admin)	356.3	474.2	450.8	513.0	513.1	513.1	44.03%	13.84%
40 - Site Work and Special Conditions	205.1	610.6	562.5	560.9	560.9	560.9	173.48%	-0.27%
50 - Systems	619.3	605.6	627.7	586.7	587.2	577.5	-6.75%	-7.99%
60 - ROW, Land, Existing Improvements	165.3	219.4	192.2	215.4	215.4	215.4	30.31%	12.04%
70 - Vehicles	494.0	209.9	879.5	209.9	209.9	209.9	-57.50%	-76.13%
80 - Professional Services	1,184.0	1,975.4	1,809.0	2,015.7	2,015.7	2,015.7	70.25%	11.43%
90 - Unallocated Contingency	(b)(4)							
Subtotal								
100 - Financing Cost								
Total								

Table 5: Summary by FTA Standard Cost Categories
(Costs shown in millions)

Standard Cost Category	FFGA	June 2014		January 1, 2018		
		Project Budget	Amended FFGA	Current Budget	Awarded Value	Paid to Date
10 - Guideway & Track Elements	1,988.7	3,405.5	3,353.4	3,524.6	3,285.3	2,862.8
20 - Stations, Stops, Terminals, Intermodal	1,168.7	2,238.2	2,326.8	2,328.2	2,186.6	1,565.0
30 - Support Facilities (Yards, Shops, Admin)	356.3	474.2	450.8	513.1	498.9	249.0
40 - Site Work and Special Conditions	205.1	610.6	562.5	560.9	488.2	489.3
50 - Systems	619.3	605.6	627.7	577.5	480.9	361.0
60 - ROW, Land, Existing Improvements	165.3	219.4	192.2	215.4	156.5	155.1
70 - Vehicles	494.0	209.9	879.5	209.9	10.6	5.6
80 - Professional Services	1,184.0	1,975.4	1,809.0	2,015.7	1,902.9	1,837.4
90 - Unallocated Contingency	(b)(4)					
Subtotal						
100 - Financing Cost						
Total						

Table 6: Quarterly Actual and Planned Cash Flow – June 2014 Plan
(Cost shown in millions)

Year – Quarter	Construc- tion	Engineer ing	OCIP	Project Management	Real Estate	Rolling Stock
Prior Payments >	3,660.2	646.4	155.6	580.0	112.6	--
Remaining >	3,719.1	74.2	127.0	392.1	69.4	202.0
2014 3Q	209.3	(-3.3)	4.8	16.7	--	--
4Q	168.3	(-3.3)	4.8	16.7	0.1	--
2015 1Q	134.6	(-3.2)	4.6	16.1	4.5	--
2Q	147.4	(-3.3)	4.8	16.7	4.7	--
3Q	169.7	(-3.3)	4.8	16.7	4.7	--
4Q	201.2	(-3.3)	4.8	16.7	4.7	--
2016 1Q	193.3	(-3.2)	4.7	16.3	4.6	--
2Q	180.9	(-3.3)	4.8	16.7	4.7	8.7
3Q	182.0	(-2.0)	4.8	16.7	4.7	13.1
4Q	214.2	6.7	4.8	16.0	4.7	13.1
2017 1Q	210.6	6.5	4.6	15.5	4.5	12.6
2Q	199.7	6.7	4.8	16.0	4.7	13.1
3Q	189.4 m	6.7 m	4.8 m	16.0 m	4.7 m	13.1 m
4Q	182.1 m	6.7 m	4.8 m	16.0 m	4.7 m	13.1 m
Remaining Planned >	1,318.7 m	75.7 m	65.3 m	179.7 m	18.5 m	128.4 m
Remaining Actual >	1,839.9 m	15.8 m	0.3 m	147.2 m	60.3 m	202.0 m
2018 1Q	174.2 m	6.5 m	4.6 m	15.5 m	4.5 m	12.6 m
2Q	170.5 m	6.7 m	4.8 m	16.0 m	4.7 m	13.1 m
3Q	168.5 m	6.7 m	4.8 m	16.0 m	4.7 m	14.0 m
4Q	155.2 m	6.7 m	4.8 m	16.0 m	0.1 m	14.0 m
2019 1Q	148.4 m	6.5 m	4.6 m	15.5 m	--	13.6 m
2Q	110.9 m	6.7 m	4.8 m	16.0 m	--	14.0 m
3Q	93.6 m	6.7 m	4.8 m	16.0 m	--	14.0 m
4Q	71.6 m	6.7 m	4.8 m	16.0 m	--	14.0 m
2020 1Q	20.7 m	6.6 m	4.7 m	15.6 m	--	5.0 m
2Q	11.7 m	6.7 m	4.8 m	16.0 m	--	0.9 m
3Q	7.6 m	2.3 m	4.9 m	5.4 m	--	--
4Q	2.8 m	--	5.0 m	--	--	--
2021 1Q	0.9 m	--	3.3 m	--	--	--
2Q	--	--	--	--	--	--
3Q	--	--	--	--	--	--
4Q	--	--	--	--	--	--

Note: * Remaining Actual cost is calculated by PMOC as: current budget (CBB) less amount invoiced.

Table 7: ESA Budget Adjustments

	ESA	RI	Other	Total
Construction				
3rd Party Contracts				
Harold				
CH057 - Harold Struct Part 3 East Approach	(-1.8m)	--	--	(-1.8m)
CHA57 - Harold Structures Part 3 WBBP	(-2.8m)	(-51.6m)	--	(-54.5m)
CHD57 - Harold Trackwork Part 3	+20.3m	+18.7m	--	+39.0m
3rd Party Contracts Subtotal:	+15.7m	(-9.2m)	--	+6.4m
Force Account				
Amtrak				
FA57D - Harold Trackwork Part 3 - Amtrak	+1.6m	+1.6m	--	+3.3m
Long Island Rail Road				
FHL03 - Harold Stage 3: LIRR	(-13.2m)	(-5.3m)	--	(-18.6m)
FHL04 - Harold Stage 4: LIRR	(-3.1m)	(-1.9m)	--	(-5.0m)
FL57D - Harold Trackwork Part 3 - LIRR	+3.1m	+3.1m	--	+6.2m
Force Account Subtotal:	(-11.6m)	(-4.8m)	--	(-16.3m)
Construction Total:	+4.1m	(-14.0m)	--	(-9.9m)
Project Wide				
Contingency/Reserve				
Y0100 - Management Reserve	(b)(4)			
Z0100 - Construction Contingency	(b)(4)			
Contingency/Reserve Subtotal:	(b)(4)			
Project Wide Total:	(b)(4)			
ESA Program Total:	--	--	--	--

Table 8: ESA Core Accountability Items

Project Status		Original at FFGA	Amended FFGA	Current*	ELPEP **
Cost	Cost Estimate	\$7.386 B	\$10.922 B	\$10.178 B	\$8.119 B
Contingency	Unallocated /Risk Contingency	(b)(4)			
	Total Contingency (Allocated plus Unallocated)	(b)(4)			
Schedule	RSD	Dec. 31, 2013	Dec. 31, 2023	Dec. 2022	April 30, 2018
Total Project Percent Complete		Based on Invoiced Amount	75.5% actual vs. 79.3% planned (ESA calc.)		
Project Performance Rate Since 2014 ESA Re-Plan		Based on Earned Value	79.4% (PMOC calculation of construction spending at 4Q2017 planned vs. actual since re-baselining)		
Contracts	Total contracts awarded to date		\$9.010 B	88.5% of total awards	
	Total construction contracts awarded to date		\$6.985 B	92.5% of construction awards	
Major Issue	Status		Comments		
Project Funding and Budget	The ESA PMT is conducting a comprehensive cost review for the ESA program. Although at one time the MTACC had planned to pursue an amendment to 2015-19 Capital Plan for additional funding is necessary, it will consider its options when the cost review is complete in March 2018.		ESA PMT continues to evaluate cost, budget, and schedule impacts. Results are anticipated in March 2018. (b)(4)		
Project Cost	MTACC has identified significant forecast cost overruns: <ul style="list-style-type: none"> ▪ OCIP - \$190 million ▪ Railroad Force Account - \$110 million ▪ OICs for Contract CM014B - \$65 million ▪ PM/CM, CCM, GEC Services – (TBD) Schedule delays due to funding constraints may result in additional escalation costs. Review of forecast cost overruns based on new funding constraint continued during February 2018.		ESA PMT is continuing its evaluation of the cost of PM/CM, CCM, and GEC Services to the target RSD. The current PMT funding strategy may delay the completion of current contracts, the award of remaining contracts, and the completion of railroad force account work. The resulting added cost escalation could be significant.		
Project Schedule	(b)(4)		(b)(4)		
Harold Schedule	The schedule for the remaining ESA work in Harold Interlocking has been revised several times since the June 2014 Program Schedule re-baseline; Dec. 2014 (ESA First); 2015 (Harold Re-Sequencing); and, 1Q2016 schedule adjustment resulting in the Program critical path passing through the Harold work. Primary cause for these schedule revisions is inadequate railroad force account support due to other higher priority Amtrak projects in the region.		MTACC PMT made progress in coordinating a regional inter-agency schedule to minimize conflicts among force account resources, resulting in better on-time completion of planned work. Planned LIRR signal work on Harold CILs on weekend track outages resumed in February 2018. Amtrak ET support declined significantly in February 2018.		

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

** 2010 ELPEP reflecting medium level of risk mitigation, excluding financing cost of \$1,116 million. This is currently being re-evaluated.