PMOC COMPREHENSIVE MONTHLY REPORT

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

Report Period March 1 to March 31, 2016

PMOC Contract No. DTFT6014D00017

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

Urban Engineers of New York, D.P.C., 2 Penn Plaza, Suite 1103, New York, New York 10121
PMOC Lead: E. Williamson, 212-736-9100; ejwilliamson@urbanengineers.com
Length of time on project: Eight years on project for Urban Engineers

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THIRD PARTY DISCLAIMER

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REPORT FORMAT AND FOCUS

This report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT6014D00017, Task Order No. 002. Its purpose is to provide information and data to assist the FTA as it continually monitors the Grantee's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the Grantee continues to be ready to receive federal funds for further project development.

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

All Grantee cost and schedule data included in this report is based on the status date of February 1, 2016.

MONITORING REPORT

EXECUTIVE SUMMARY

1. PROJECT DESCRIPTION

The East River tunnels in Manhattan are at capacity. The ESA project is anticipated to improve LIRR tunnel capacity constraints and enable the growth of the overall system. The project comprises a 3.5 mile commuter rail extension of the Long Island Rail Road (LIRR) service from Sunnyside, Queens, to Grand Central Terminal (GCT), Manhattan, utilizing the existing 63rd St. Tunnel under the East River and new tunnels in Manhattan and Queens, including new power and ventilation facilities. The project includes a new eight track terminal constructed below the existing GCT and a new surface rail yard in Queens for daytime train storage. Ridership forecast is 162,000 daily riders (27,300 new riders) in 2020. The project will provide increased capacity for the commuter rail lines of the LIRR and direct access between suburban Long Island and Queens and a new passenger terminal in Grand Central Terminal (GCT) in east Midtown Manhattan, in addition to the LIRR's current Manhattan connection at Penn Station.

2. CHANGES DURING 1st Quarter 2016

a. Engineering/Design Progress

As of February 1, 2016, MTACC reported that the overall Engineering effort is 99.0% complete, based on Earned Value for Design Deliverables. Its Cost Report shows 92.0% of the overall EIS & Engineering category as invoiced and 92.0% of the budgeted section titled "Design" as having been invoiced.

b. New Contract Procurements

Seven technical/schedule proposals for Contract CM007, GCT Station Caverns and Track, were submitted on September 15, 2015. Seven cost proposals were submitted on October 27, 2015. During November 2015, five proposers of the seven were qualified for continued negotiation. Revised costs and schedules from the three remaining qualified proposers, representing the first round of the Best and Final Offers, were submitted on December 30, 2015. Final presentations by the proposers for the CM007 contract were completed in January 2016. MTACC was able to complete the initial negotiations with the apparent low bidder and the contract was approved by the MTA Board on January 27, 2016. Award is pending completion of negotiations on the Best and Final Offer (BAFO) schedule and acceptance of the final contract price and schedule. Delay to ESA program critical path is now expected to be over three months. Contract VQ033, Mid-Day Storage Yard CILs, was advertised on August 14, 2015, and bids were received on October 30, 2015. The contract was awarded on January 15, 2016, with a Notice to Proceed date of January 19, 2016.

c. Construction Progress

The Project Management Team (PMT) reported in its January 2016 Monthly Progress Report that total construction progress reached 60.9% complete; the Cost Report also shows 61.9% of construction as having been invoiced.

d. Continuing and Unresolved Issues

The PMOC is becoming increasingly concerned about both the delay in the award and Notice to Proceed for Contract CM007, GCT Station Caverns and Track, and the outcome of the protracted negotiations with the apparent low bidder that is now entering its fourth month. This delay has already adversely impacted the ESA program critical path by at least 3 months. Final agreements reached through the negotiations may not support the contract price and period of performance approved by the MTA Board in January 2016.

The current potential shortfall in funding availability continues to be a major issue that could have a significant impact on the program schedule, particularly with regard to the award of Contract CM007 (GCT Station Caverns and Track), which is on the program critical path; exercising options on Contract CS179 (Systems Package 1) and other contracts; and continued funding of force account construction and support work. Although MTACC has been working closely with MTA to arrange for adequate funding to meet schedule requirements for award of contracts, this effort relies on arrangements, both internal and external to the ESA project, involving multiple, temporary funding shifts and transfers. This approach is not sustainable in

the longer timeframe and is subject to change as new and unexpected financial challenges arise. This issue is discussed further in Section 6.0, Risk Management, of this report.

The PMOC is concerned that the MTACC burn rate of Unallocated Contingency continues to trend poorly and, as a result, there may not be sufficient contingency funding available to award all of the remaining construction contracts. This issue is discussed further in Section 5.0, Project Cost, of this report.

With regard to the "ESA First" Harold Re-sequencing Plan developed in December 2014 and implemented in 2015, the PMOC notes that Amtrak has not been able to provide even the reduced level of force account resources that had been planned in support of the ESA schedule. Additionally, the projected force account costs are trending noticeably higher than planned and the force account contingency budget line item is nearly depleted. ESA continues to work on a comprehensive study to identify and evaluate the reasons for this continuing problem and to make recommendations with regard to a revised basis for planning and scheduling the remaining work in the Harold Interlocking and a revised cost forecast. The study had been expected to be completed in January 2016 but remains incomplete as of March 31, 2016.

The PMOC has continuing concerns regarding the impact to the ESA Harold work due to the Amtrak program to harden ERT Lines 3 and 4 in preparation for extended outages for ERT Lines 1 and 2 to complete Hurricane Sandy damage related reconstruction work, earlier scheduled to commence in 2018, but now planned for 2019. Amtrak has not provided any specific details about the ERT Lines 3 and 4 hardening work, but there is concern that significant Amtrak force account resources will be needed to support the hardening work that could further reduce the Amtrak resources available to support the ESA Harold Re-Sequencing Plan that is currently under review. There is also concern that track outages required for the hardening work may conflict with ESA needs to support the planned Harold work. Delays in completing the Harold Re-Sequencing Plan may result in essential ESA work being pushed back into the timeframe for Amtrak's extended outages for ERT Lines 1 and 2. The PMOC notes, however, that in early November 2015, ESA advised that Amtrak is leaning toward closing ERT Line 2 first in 2019. Although this represents a delay from the earlier 2018 forecast time frame, the selection of Line 2 to close first does support the current ESA Harold schedule. No additional details, updates or commitments regarding these issues were available as of March 31, 2016.

e. New Cost and Schedule Issues

ESA indicates that Allocated Contingency has been reduced this period by $32.2 million, from $294.2 million at the end of the 4Q2015 to $262 million at February 1, 2016. Unallocated Contingency (or Project wide Reserve as it is also referred to) remained the same for the period at $385.9 million. The current forecast for Project wide Reserve at project completion is $275.2 million. The PMOC is concerned that the Reserve will be insufficient due to the current burn rate, since it is expected that the results of the ongoing Harold Schedule Status update and the ongoing Force Account Forecast Update will reveal further schedule delays and resultant cost increases. ESA indicates that the cost forecast includes updated cost estimates related to CM007. The current unawarded status of the contract, however, places these numbers in question. In addition, potential funding delay impacts are not reflected in the forecast. The forecast must, therefore, be considered as optimistic.

ESA reported the IPS was changed from an Early Revenue Service Date (RSD) of March 25, 2020 to August 19, 2020. In IPS #78, ESA reported that Program Schedules changes were affected by the issuance of Addendum #30 for CM007 Caverns Fit-Out contract procurement

which extended Milestone #7 of the Integrated Systems Testing by almost five months (from March 25, 2020 to August 19, 2020). The PMT was not able to issue the NTP for CM007 in mid-March as previously planned. This award is presently forcast for early to mid-April 2016. The PMOC notes, however, that this delay will further reduce the schedule contingency of the Program.

3. PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

a. Grantee Technical Capacity and Capability

Since 4Q2015, the PMOC had been reporting on its concern regarding inadequate support of the program level risk management process due to the lack of continuity of supervision created by turnovers and vacancy of the ESA Risk Manager position in 2015. This concern is now resolved based on the PMOC's observation that the new ESA Risk Manager, who started on the project in January 2016, has demonstrated his ability to accomplish full restoration of the risk management process.

MTACC made a change in the ESA project organization related to how the package level construction management process is managed at the executive level.

A more detailed discussion of the Sponsor's Technical Capacity and Capability can be found in Sections 1.1a and 1.1b below.

b. Real Estate Acquisition

MTACC did not report any significant real estate changes in its February 2016 Monthly Report. Details are provided in Section 2.6 of this report.

c. Engineering/Design

Progress for remaining design work continues to lag design milestone targets. The GEC and PMT continue to consistently miss target dates for completing the remaining design activities on the project due to continuing scope transfers between contract packages. Design completion of the Contract CQ033, Mid-Day Storage Yard, package continues to be delayed due to uresolved coordination issues with LIRR, as well as late approval of track design variances required from LIRR. The need to accommodate Positive Train Control capability has also caused some delays. Details are provided in Section 2.1 of this report.

d. Procurement

For the CM007 package, during November 2015, five proposers of the seven were qualified for continued negotiation. Addendum #30 was issued to three of these remaining qualified proposers who submitted revised costs and schedules, representing the first round of Best and Final Offers, on December 30, 2015. The PMOC notes that ESA has requested the proposers to modify their schedules based on an increase of contract time from 40 to 42 months and to accommodate late site access caused by the Contract CM006 Milestone #2 delay. MTACC was able to complete the initial negotiations with the apparent low bidder and the contract was approved by the MTA Board on January 27, 2016. Award is pending completion of negotiations on the Best and Final Offer (BAFO) schedule and acceptance of the final contract price and schedule. Delay to ESA program critical path is now expected to be over three months. The PMOC believes that there maybe a risk that the final agreements reached through negotiations may not support the contract price and period of performance approved by the MTA Board in January 2016.

Contract VQ033, Mid-Day Storage Yard CILs, is a separate procurement package that will provide the eight Central Instrument Location huts (CILs) for Contract CQ033. VQ033 was advertised on August 17, 2015, and bids were received on October 30, 2015. The contract was awarded on January 15, 2016, with a Notice to Proceed date of January 19, 2016.

e. Railroad Force Account (Support and Construction)

During March 2016, LIRR Force Account Signal personnel continued to identify, organize, pull, and terminate signal cables at the "H6" CIL and its signal cases; installed conduit and signals at recently installed Signal Bridge #16; continued to make circuit revisions at the "H1" and "H3" CILs; placed the "H2" CIL in its location; continued breakdown testing at signal cases "H1A", "H1B", and "H1C"; and continued conduit installation at the #6167 crossover and the "H2" CIL. LIRR High Tension personnel continued to install conduits and pull high tension cables between signal power separation towers T36 and T40. LIRR Light and Power personnel continued to install and terminate cables between the signal power separation towers and the transformers at the "H1" and "H6" CILs. Amtrak C&S personnel installed signal cable at the "F2E" signal hut, conduit at the "F2J" signal hut, and continued to install signal trough along Loop 2 between Loop and future "T" Interlockings. Amtrak Electric Traction personnel continued to relocate catenary and signal feeder wires at the B-912, B-913, B-914, B-924MOD, and B-924WA catenary poles and continued to make catenary revisions for the future installation of catenary wires over the #747 crossover in "F" Interlocking. Amtrak Communications personnel installed communications cables between "R" and "T" Interlockings.

f. Third-Party Construction

Manhattan:

During 1Q2016, the CM005 contractor (Manhattan South Structures) continued to install pneumatically applied concrete (PAC) for the upper level walls GCT 1 & 2 East Wye. In the GCT 1 & 2 West Wye the contractor continued wall, stair and duct bench construction. Duct bench construction was completed in the connector tunnels. The contractor also completed PAC construction in the connector tunnels and TT1 at 38th St. The contractor completed south end wall construction in both East and West GCT Caverns. At the 37th St. upper vent facility air plenum concrete wall construction and site work continued. Punchlist activity and grouting also continued site wide. The contractor has planned to complete all work in early April 2016.

The CM006 contractor (Manhattan North Structures) continued to install waterproofing at various locations: the 55th St. Vent Facility, 50th St. Air Plenum, GCT 3 East and West Wyes, Cross Passage 4, Access Tunnel #5, and Tunnels 302, 303, EB4, WB1, and WB3. The contractor continued PAC construction at various locations: 50th St. Air Plenum, GCT 3 West Wye, GCT 4 and GCT 5 East and West Wyes, Cross Flue, Cross Passages 7 and 8, and Tunnels WB1 and WB3. At WB1 the contractor installed permanent reinforcing ribs at two areas of incompetent rock. Concrete construction of slabs, walls, and arches continued at various locations: 53th St. Sump Chamber and Tunnels 302, 303, EB4 and WB1. Duct bench construction continued at GCT 4 East and West Wyes and at Tunnels EB2 and WB1. The contractor completed construction at the GCT Eastbound Cavern Back of House (BOH) and continued construction of the upper level walls at the Westbound Cavern BOH. The contractor continued work at the 63rd St. Tunnels and Structures including lead abatement, concrete repairs, and ductbank work. The contractor will continue construction operations with two shifts into June 2016 after reducing from three shifts earlier in the year. The construction schedule remains under review for milestone adjustments as needed to align with contract CM007.

Queens:

During 1Q2016, the CQ032 contractor (Plaza Substation and Queens Structures) continued exterior masonry, overhead mechanical, electrical, and plumbing (MEP) installations, and interior finishes work at the Yard Services Building. At the Plaza Vent Structure, the contractor also continued interior finishes and exterior cladding & louver installation. The contractor continued Plaza site work. Removal of the BMT subway underpinning system at Northern Boulevard started in January 2016. The contractor also completed duct bench construction in the Bellmouth. Fire standpipe installation and testing continued in Tunnel A. Excavation work started on the west side of 23rd St. Facility for the two remaining ventilation shafts per re-design to address underground obstructions.

Harold Interlocking:

Contract CH053 (Harold Interlocking, Part 1 and G.O.2 Substation): The MTACC declared "Substantial Completion" for the CH053 contract on February 29, 2016. Nonetheless, the contractor continued to make modifications to miscellaneous catenary poles, prepare trackbed for the Westbound Bypass, construct access roads, install catch basins and communications duct banks, and make punchlist repairs throughout its job sites during March 2016.

Contract CH057 Harold Structures Part 3: The CH057 contractor began construction of the Tunnel D Approach Structure in March 2016 with installation of secant and soldier piles for support of excavation (SOE) at the East Portal of the tunnel under 39th St. overhead bridge. The contractor also began installation of soldier piles for SOE at the 48th St. bridge in preparation to remove the old LIRR Main Line #2 (ML 2) bridge structure and abutments.

Contract CH057A (Westbound Bypass): During March 2016, the CH057A contractor continued preparations to launch the "jacked box" shield to excavate the Westbound Bypass Tunnel under Lines 2 and 4 in Harold Interlocking. The contractor began excavation of the East Approach Structure toward the launch block between secant piles it installed previously. In its effort to de-water the West Approach Structure of the tunnel, the contractor has largely been able to abate the water profile problem that it previously encountered, although not totally. There is still an area of approximately 15' in length near the west portal in which the underlying water table is too high. ESA has accepted the contractor's solution to begin excavation at the west end of the structure and mitigate the problem when it approaches the west portal with a temporary sump pump. Additionally, the contractor continued to install guy anchors on the steel signal separation poles at Woodside and install Signal Bridge #16 during March 2016.

Systems:

Contract CS179 – Systems Facilities Package No. 1: During March 2016, the CS179 contractor continued various elements of work (conduit installations, concrete work, temporary power installations, etc.) at the 2nd Ave.; B10; Roosevelt; Vernon; Tunnel Tracks B/C and D; Yard Lead Tunnel; 29th St.; Queens Plaza; 39th St. and 63rd St. facilities. The two (2) Stop Work Orders (SWOs) for work in the control rooms at the Vernon and B10 facilities are still in effect. As previously reported, these SWOs were issued because of the design conflict between the room sizes and equipment layouts in the control rooms. The GEC is still working on solutions to this issue and no date was given for the rescinding of the SWOs. Work at the 23rd Street facility remains on hold as a result of an issue with water infiltration through the concrete floor. Discussions with the CQ032 contractor regarding this issue continue.

Contract CS084 Traction Power System Package 4: In March 2016, the MTACC reported that the contract modification for the L3 electrical service work was executed, allowing the contractor to progress the installation work. The only other construction work progressing on this contract is the surveying of the various work locations. The contractor is reporting that contract Milestone Nos. 1 and 2 are delayed due to its inability to get approval of the C05 and C08 substation designs.

g. Vehicles

Details of the vehicle procurement (non-federally funded portion) are provided in Section 2.5 of this report.

h. Commissioning and Start-Up

The last Quarterly Operational Readiness briefing was held on December 17, 2015, and the 1Q2016 briefing was postponed, due to scheduling conflicts, until April 2016. As a result, there are no significant updates to those already reported in the PMOC's December 2015 report. However, the PMOC continues to note that definitive dates for the completion of safety certifications need to be identified. PMOC concerns are provided in Section 2.4 in this report.

i. Project Schedule

Table 1 provides a summary of critical milestone dates including PMOC and Grantee forecasts:

Table 1: Summary of Critical Dates

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.

j. Project Cost

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

Table 2: Project Budget/Cost Table (February 1, 2016)

	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%	$6,668.9	59.47%
Financing Cost	$1,036	14.00%	$617	$1,036.0	9.24%	$617.6	59.61%
Total Project Cost	$6,350	86.00%	$4,107	$10,178.0	90.76%	$6,051.3	59.45%
Federal Share	$2,683	36.30%	$1,148	$2,699.0	24.07%	$2,023.9	74.99%
5309 New Starts Share	$2,632	35.60%	$1,098	$2,436.6	21.73%	$1,761.8	72.31%
Non New Starts Grants	$51	0.70%	$50	$67.0	0.60%	$66.7	99.55%
ARRA	0	0.00%	0	$195.4	1.74%	$195.4	100.00%
Local Share	$3,667	49.60%	$2,959	$7,479.0	66.69%	$4,027.4	53.85%

k. Project Risk

The PMOC had previously expressed its concern that the risk management area has not been adequately supervised since the re-assignment of the long serving Risk Manager in late 2Q2015. The new Risk Manager, who started work on the project in January 2016, held a program-wide risk meeting with the PMOC on March 14, 2106, the first such meeting since January 2015. The PMOC believes that the risk management process on ESA will be restored to its proper functioning as a key input to the PMT's decision making process. Details are provided in Section 6.0 of this report.

MONTHLY UPDATE

The information contained in the body of this report is in accordance with Oversight Procedure #25, to "inform the FTA of the most critical project occurrences, issues, and next steps, as well as professional opinions and recommendations." Where a section is included with no text, there are no new "critical project occurrences [or] issues" to report this month.

ELPEP COMPLIANCE SUMMARY

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

- **Technical Capacity and Capability (TCC):** The FTA requested MTACC to update its TCC Plan in response to the FTA/PMOC comments that were generated in November 2013 as a result of significant changes in key ESA upper management level positions. 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. MTACC submitted a revised TCC Plan in response to FTA/PMOC comments on June 12, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and recommended a meeting with MTACC to resolve remaining issues. The FTA subsequently provided MTACC with the evaluation. MTACC responded with a reply on September 24, 2015.

- **Continuing ELPEP Compliance:** The following ELPEP components continue to need improvement or are deficient: Design Development; Change Control Committee (CCC) Process and Results; Stakeholder Management; Issues Management; Procurement; and Risk-Informed Decision Making. The PMOC notes progress in two components – management decision making and timeliness of decision making. The PMOC had been particularly concerned about the effectiveness of the risk management process since June 2015 due to the staffing change at that time and the lack of continuity of leadership because the ESA Risk Manager position was vacant from October 2015 through early January 2016. The PMOC does note, however, that the new ESA Risk Manager has been actively working to status and update the risk management process since January 2016 and held a long overdue program level risk meeting with the PMOC on March 14, 2016. The PMOC anticipates seeing continuing improvements in the risk management process.
- **Project Management Plan:** MTACC submitted PMP Rev. 10 to the FTA and PMOC on July 18, 2014. This revision incorporates changes stemming from FTA/PMOC comments on PMP Rev. 9.0, provided in December 2013, as well as changes that resulted from the MTACC's Candidate Revision process. Based on working meetings, dialogue, and additional clarifying review comments from the PMOC, the MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The PMOC completed its review and evaluation of MTACC's revisions and responses and submitted its findings to FTA-RII in 4Q2014. MTACC subsequently submitted a revised Rev. 10 on March 13, 2015, that included updated information on the Change Control Committee. Several working meetings involving ESA chapter authors and the corresponding PMOC reviewers have been held since June 2015 to resolve the remaining outstanding FTA/PMOC evaluation comments. These meetings continued through December 2015. MTACC and the PMOC are working to schedule the few remaining meetings required to complete this process.

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 of the PMP. The PMOC believes that this continues to be a serious deficiency and needs to be resolved as soon as possible. [Ref: ESA-114-Sep13] The PMOC does note, however, progress in certain areas. The PMOC's major areas of concern include:

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

meetings has been held to discuss the MTACC drawdown curves and the FTA/PMOC proposed cost and schedule contingency minimums. On September 17, 2015, the PMOC presented the recommended cost contingency minimums with justification. A series of meetings was held to discuss the MTACC drawdown curves and the FTA/PMOC proposed cost and schedule contingency minimums, the latest occurring on January 15, 2016. At that time, MTACC accepted the FTA/PMOC recommended minimum ELPEP cost and schedule contingency hold points, dollar and calendar day values, and curves for the remainder of the program. Therefore, the PMOC considers this deficiency to now be resolved.

- **Schedule Management Plan (SMP)**: The ESA project remains non-compliant with requirements for Integrated Project Schedule (IPS) Updating, Forecasting, and Schedule Contingency Management against a current baseline schedule. Given that the new budget and schedule have been put in place, the PMOC expected that MTACC would start to meet the requirements set forth in its SMP in the above-referenced areas. The revised SMP was submitted on 4Q2015, and the PMOC is working to complete its review.
- **Cost Management Plan (CMP)**: The ESA project remains non-compliant with requirements for Project Level EAC Forecasting, Project Level EAC Forecast Validation, and MTACC Cost Contingency Management and Secondary Mitigation. Given that the new budget and schedule were presented to the MTA CPOC in June 2014, these requirements should have been met by now, but MTACC has made very little progress in this area. 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. MTACC submitted a revised CMP in response to FTA/PMOC comments on June 30, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and met with MTACC on November 16, 2015. MTACC is working on additional agreed upon revisions and is evaluating the PMOC's recommendations in six areas. MTACC provided an initial draft of the revised CMP on December 15, 2015, and the PMOC is nearing completion of its review.

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 basic recommendations were presented at several meetings with MTACC, the last on September 17, 2015. On October 14, 2015, the PMOC provided the FTA and MTACC with an expanded basis for the PMOC's recommended minimum schedule contingencies to Revenue Service Date (RSD). MTACC responded on October 27, 2015, with no exceptions taken to the PMOC proposed minimum schedule contingency values. MTACC did, however, have comments on certain bases of the PMOC's position. On December 7, 2015, the PMOC provided MTACC with additional details of the PMOC's evaluation of the MTACC proposed values for the ELPEP minimum cost contingency hold points along with an expanded basis for the PMOC's position regarding those values. At a meeting on January 15, 2016, MTACC and the ESA PMT accepted the FTA/PMOC proposed ELPEP minimum cost contingency hold point values. Therefore, the issues regarding the ELPEP minimum cost and schedule contingencies have been resolved.

The ELPEP 1Q2016 Quarterly Review Meeting was held on March 3, 2016. Summarizing the significant discussion:

- PMOC will work with MTA-ESA to resolve the issues with all of the remaining comments on the ESA Project Management Plan.
- Final FTA approval is needed for the MTACC Technical Capacity and Capability (TCC) Plan. The PMOC will work with the FTA to complete this action.
- MTACC provided an initial draft of the revised CMP on December 15, 2015, and the PMOC is targeting completion of its review by the end of March 2016.
- The PMOC is targeting the end of March 2016 to complete its review of the 4Q2015 update of the MTACC ESA/SAS Schedule Management Plan.
- The PMOC noted that completion of its CMP and SMP reviews has been delayed because of the transition, earlier this year, to newly assigned staff in the cost and schedule areas.
- MTA noted that no new ESA candidate revisions have been recommended in the 4Q2015/1Q2016 time period.
- The MTA-ESA Project Controls Manager noted challenges maintaining the Integrated Project Schedule. All identified problem areas are in the process of being resolved.
- The results of the ongoing Harold schedule study are expected to be completed very soon. Once the MTACC president has reviewed and approved the proposed revisions, ESA will present the revised scheduled to the entire project staff, FTA and the PMOC. This had been anticipated to occur during the week of March 14, 2106.
- The ESA Program Risk Register is being updated by the new ESA Risk Manager.
- MTA-ESA will include the agreed-upon minimum ELPEP schedule contingency hold points and values in the 1Q2016 report to the FTA. ESA will add the actual schedule contingency curve on the chart.
- MTACC requested a draft version of the revised ELPEP document. The PMOC will work with the FTA to expedite completion of the draft update.

The next ELPEP Quarterly Review Meeting with MTACC, FTA-RII, SAS and ESA projects and the PMOC will be held on June 16, 2016.

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

a) Organization

The previous Risk Manager who started in July 2015 resigned in October 2015. The PMOC had previously expressed concern that the risk management area has not been adequately supervised since the re-assignment of the long serving Risk Manager in late 2Q2015. ESA identified the new Risk Manager in December 2015 and he started work on the project in January 2016. The program-wide risk meeting with the PMOC was held on March 14, 2106, the first such meeting since January 2015. Based on the ESA Risk Manager's good performance through 1Q2016, the PMOC believes that the risk management process on ESA will be restored to its proper functioning as a key input to the PMT's decision making process.

During 1Q2016, the Executive Construction Manager left the PMT after serving almost 9 years on the ESA project. The project organization was revised and this position is no longer included. Construction work is now managed by individual managers for Manhattan, Queens, Harold Interlocking and Systems. The PMOC will monitor this organizational restructuring and note any change in the Sponsor's ability to maintain the required level of Management Capacity and Capability.

b) Staffing

Please refer to Section 1.1a, Techinical Capacity and Capability, Organization, above, for discussion about the replacement for the ESA Risk Manager.

1.2 Project Management Plan

a) History of Performance

MTACC re-baselined the ESA Project in May 2012. This re-baseline resulted in a risk adjusted budget of $8.24B (not including rolling stock reserve and finance cost) and a projected RSD in August 2019. During 2013 and 2014, ESA undertook an extensive re-planning effort to revise the Program budget and schedule as a result of the CM012R bid overrun and continuing delays in several other major procurements (e.g., CS179; CM014B). This is the third re-planning effort undertaken by ESA since the FFGA in 2006 (the first re-planning effort took place in 2009). The current re-planned budget ($10.177B) and schedule (RSD in December 2022) were presented to the MTA CPOC in June 2014 and approved. The PMOC notes that ESA has been dealing with schedule performance set-backs primarily in the following areas: funding issues delaying award of contracts and systems contract options; poor performance by the CM006 contractor; and continued delays in the Harold Interlocking work caused by continued lack of adequate railroad force account support.

b) PMP

MTACC submitted PMP Rev. 10 to the FTA and PMOC on July 18, 2014. This revision incorporates changes stemming from FTA/PMOC comments on PMP Rev. 9.0 provided in December 2013 as well as changes that resulted from MTACC's Candidate Revision process. Based on working meetings, dialogue, and additional clarifying review comments from the PMOC, MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The PMOC reviewed Rev. 10 and provided its comments to the FTA in 4Q2014. A subsequent update to the Rev. 10 document was submitted on March 13, 2105, reflecting only revisions to the ESA Change Control Committee. The PMOC continues to coordinate with MTACC arranging working meetings with ESA chapter authors and the corresponding PMOC reviewers to resolve the remaining outstanding FTA/PMOC evaluation comments. Several working meetings have been held since June 2015 and continued through December 2015. Additionally, there is a renewed focus on resolution of the remaining comments for the Cost Management Plan and Schedule Management Plan.

1.3 Project Controls

a) Schedule

MTACC presented its new baseline schedule to the MTA CPOC in June 2014 with an RSD of December 2022. This date includes 22 months of Program level contingency. The PMT developed a draft schedule contingency drawdown plan as required by the ELPEP agreement and submitted it in December 2014. The ESA schedule contingency drawdown plan and the

FTA/PMOC minimum required schedule contingency levels were discussed at several meetings since March 2015, with the latest being on September 17, 2015, and follow-up activities continued through 4Q2015. In October 2015, MTACC agreed to the minimum schedule contingency hold point values proposed by FTA/PMOC.

b) Cost

MTACC presented its Re-Plan baseline budget of $10.177 billion (excluding Rolling Stock Reserve) to the MTA CPOC in June 2014. The PMT developed a draft cost contingency drawdown plan as required by the ELPEP agreement and submitted it in December 2014. The ESA cost contingency drawdown plan and the FTA/PMOC minimum required cost contingency levels were discussed at several meetings since March 2015 with the latest being on September 17, 2015, and follow-up activities continued through 4Q2015. On December 7, 2015, the PMOC provided MTACC with the PMOC's evaluation of the MTACC proposed values for the ELPEP minimum cost contingency hold points along with the basis for the PMOC's position regarding those values. On January 15, 2016, MTACC agreed to the minimum cost contingency hold point values proposed by FTA/PMOC. The ELPEP FTA Hold Point 1A, defined as 60% Construction and 90% bid shows a minimum contingency of $440 million. Currently, the project is at 60.9% Construction and 83% bid (without considering CM007 status) with a contingency of $648 million.

1.4 Federal Requirements

a) FFGA

As a result of MTACC's re-baselining of the ESA Project budget and schedule on three separate occasions (2009, 2012, and 2014) since the FFGA was signed in 2006, an FFGA amendment is currently in process and is expected to be completed during 2Q2016. As mentioned above, MTACC presented a new project budget of $10.177 billion (excluding the Rolling Stock Reserve and finance costs), and a new schedule with an RSD of December 2022 to the MTA CPOC in June 2014. The proposed FFGA has a budget of $10.922 billion ($10.459 billion before Rolling Stock Reserve and finance costs) and an RSD of December 2023 based on the PMOC analysis that includes considerations of historical ESA performance and future risks.

b) Federal Regulations

As an FTA full funding grant recipient, MTA is required to meet the requirments of the Buy America Act. The PMOC makes note of current and new issues regarding this requirement in this section and includes additional details in the corresponding contract status in Section 2.3 and Appendix G.

Contract CS179, Systems Package 1: Multiple issues affecting proposed equipment.

Track Turnouts:

As the PMOC noted in its 3Q2015 (September 2015) Monthly Report, MTACC has approximately 17 turnouts on hand for which it received FRA and FTA "Buy America" waivers in 2015 to use. These turnouts will comprise MTACC's track program for 2016 and 2017. However there are approximately 41 turnouts for the years after 2017 (for which MTACC has none on hand), which must be procured in compliance with "Buy America" requirements. Consequently, on behalf of LIRR and Amtrak, MTACC's GEC completed suggested turnout design revisions for both railroads in mid-November 2015. After it reviewed these revisions, MTACC submitted them to Amtrak in December 2015 and to LIRR in January 2016. Amtrak

approved the design revisions in January 2016. As of March 31, 2016, ESA had not received LIRR's approval, however. Based on progress to date, the PMOC estimates that an order for the remaining 41 turnouts will not be placed until 2Q2016. Since turnouts are long lead items that could take up to 18 months from order to delivery, the PMOC further estimates that "compliant" turnouts will not begin to arrive until 4Q2017, at the earliest. Based on the PMOC's experience, there are additional factors which could influence when a fabricator can deliver turnouts such as what time of year an order is placed, how many other railroad orders a vender has in hand, etc. The PMOC believes that MTACC must monitor this situation closely in order to avoid delays beyond 4Q2017.

1.5 Safety and Security

a) Safety Certification Process

Documents supplied by ESA at the 4Q2015 Operational Readiness Briefing indicated that safety certification for four design Contracts (CM007, CM015, CS079, and CS284 (Former CS086)) and four active construction Contracts (CM004, CM013, CM013A, and CM014B) remained to be accomplished. In its February 2016 Monthly report, MTACC indicates that the safety certification process for Contract CM013A is complete and approved by the LIRR System Safety Committee. An update on the scheduling of these System Safety Certification activities will be presented at the 1Q2016 Operational Readiness Briefing that will be held in April 2016.

The PMOC remains concerned that the Safety and Security Committee appears to not be meeting on a regular basis in accordance with the ESA Safety and Security Management Plan (SSMP). This lack of regular meetings could hamper the effectiveness of the Committee in coordinating activities related to the Safety Certification.

b) Project Construction Safety Performance

Through February 2016, project safety statistics for lost time accident and OSHA recordable injuries on active construction contracts are trending below the Nureau of labor Statistics (BLS) national average with a CY2016 project wide ratio of 0.66* vs. 1.80 (2015 BLS Average) lost time accidents (LTA) per 200,000 work hours (national average). The ESA recordable CY2016 injury rate through February 2016 was 2.63 vs 3.2 (2015 BLS Average).

* The Grantee uses a 12 month rolling average for their OSHA statistics.

c) Security

The ESA PMT did not report any significant security issues in its February 2016 Monthly Progress Report.

1.6 Project Quality

ESA Quality Staff: The ESA Quality Manager has assessed his requirement needs against all existing and future contracts. He has determined that he needs one additional person.

GEC Quality: The GEC Quality Manager has been approved by the ESA Quality Manager who will perform an audit of the GEC in May or June 2016.

Conditional Assessment Inspections: Every six months, the ESA Quality Manager performs Conditional Assessment Inspections. Based on experience gained in performing conditional assessment inspections during the past year, the process used is being reviewed. It is expected that the procedure will be revised in May or June 2016.

CM013: A closeout audit on this contract was held on January 12, 2016, to determine whether any quality issues will prevent this contract from closing. There are three (3) open nonconformance reports (NCRs), including one for pipes fabricated in China, that were installed and are now inaccessible. Closure of this NCR awaits resolution between MTACC Legal and the FTA. In addition to the three NCRs that are open, there are thirty (30) open submittals that the Contractor must submit for closure, four (4) contract modifications that must be closed, and Record As-Built drawings that must be resolved with the General Engineering Consultant (GEC). Based on the closeout audit, As-Built drawings are being given a further review and any issues found will be identified and resolved before this contract can be closed.

CM014B: Some issues have been identified with as-built drawings and the ESA Quality Manager will be meeting with the contractor to resolve them.

CM005: The ESA Quality Manager will be performing a walkthrough with LIRR in April 2016.

1.7 Stakeholder Management

a) Railroads

The MTACC PMT continues to meet with internal stakeholders MTA, MTA-IEC, the LIRR, and external stakeholders the Federal Railroad Administration (FRA) and the PMOC each month to gain FRA's approval to extend ESA project High Speed Rail (HSR) Grant funding beyond September 30, 2017. The Grant requires that all HSR funds be expended by that date, but MTACC's "ESA First" Harold Interlocking schedule re-baseline will push Amtrak ESA HSR Force Account projects well beyond that date. Additionally, the sequence in which Amtrak decides to do its own work to reconstruct its East River (ERT) Line 1 and Line 2 tunnels that were damaged by Superstorm Sandy could have a profound impact on the "ESA First" schedule. Amtrak has been advised of MTACC's concern and indicated in November 2015 that Amtrak is leaning toward closing ERT Line 2 first in 2019. Although this represents a delay from the earlier 2018 forecast time frame, the selection of Line 2 to close first does support the current ESA Harold Schedule. Both parties must continue to work together to develop an ERT Line 1 and Line 2 outage schedule that will have the least negative impact on ESA. At present, Amtrak's work is not planned to begin until 2019, so there should be sufficient time to develop such a schedule.

b) Others

Although there are other stakeholder issues that ESA must address, at present there is no evidence that any might have a significant negative impact on the project schedule or cost.

1.8 Local Funding

a) MTA/New York State (Capital Plan)

The MTA funding request for the 2015-2019 Capital Program was submitted to the NYS Capital Program Review Board (CPRB). ESA will need to obtain funding from this program to award all the options in the CS179 contract and to award the CM007, CQ033, and CH058 contracts. The $10.178 billion (not including the $463 million Rolling Stock Reserve) budget, presented to the Capital Program Oversight Committee (CPOC) in June 2014, will make the need for additional funding even greater. Until new funding is provided, the project has a funding shortfall of approximately $2.6 billion, and is part of the un-funded MTA Budget. In late October 2015, the MTA presented a $29 billion program to its Board for the 2015 – 2019 funding cycle. Although an agreement has been reached with the Governor, the Capital Plan

funding had not been appropriated to the ESA project as of January 31, 2016. Two of the three CS179 options that were due to be exercised in early November 2015 were executed, and Option 2 was split, with the $7.2 million portion (Option 2A) exercised and a $70.2 million portions (Option 2B) deferred until April 2016. In early January 2016, ESA was given an interim funding allocation of approximately $941M in 2015 – 2019 funds, of which $748 million was for the award of CM007. Funding will also cover the award of VQ033, forecasted overruns on Active 3rd Party contracts (excluding CH057A), CS179 Options expiring by June 2016, OCIP, cash flow needs through June 2016 for Force Account, Management, and Utilities, and additional real estate and utility relocation issues. Contract deferrals were also required in order to balance to available funding (new awards including Mid-Day Storage, Tunnel A, 250 Hz Track, Cab Simulator, Harold Stage 4, portion of CS179 Option 2B, etc.).

b) Other Sources

The total FTA funding commitment, as of March 2016, remained at $2.699 billion, as indicated in Table 2 in the Executive Summary.

1.9 Project Risk Monitoring and Mitigation

a) Risk Management Plan (RMP)

The MTACC RMP, Rev. 2, dated July 2012, is a sub-plan within the ESA Project Management Plan (PMP). The RMP, Rev. 2, was updated and incorporated FTA/PMOC review comments to bring it into compliance with the ELPEP principles and requirements. The FTA formally notified MTACC of its conditional acceptance of the RMP by letter dated March 4, 2013. MTACC plans to update the RMP, if needed, after completion of its current updates of both the Cost Management Plan and the Schedule Management Plan.

b) Monitoring

The PMOC had previously reported that it was concerned about inadequate support of the program level risk management process due to the lack of continuity of supervision created by turnovers and vacancy of the ESA Risk Manager position in 2015. This concern has now been resolved based on the PMOC's observation that the new ESA Risk Manager, who started on the project in January 2016, has demonstrated his ability to accomplish the restoration of the risk management process. The PMOC also notes that the program level risk meetings with the PMOC have resumed with the March 14, 2016 meeting, the first since January 2015.

c) Mitigation

Current risk mitigations are discussed in Section 6.3 below.

2.0 PROJECT SCOPE

For the 48th St. Station Entrance, the MTA Board approved the design agreement with the building owner. The building owner will provide the designs for the relocation of the existing interior utilities and will complete some limited structural design. Contract package CM015 will be revised and finalized based on the agreements reached during negotiations between the building owners and MTACC. MTACC is continuing discussions with the building owner to focus on finalizing the required easements and construction agreements. The GEC 100% design submittal is currently forecast for May 19, 2016.

On Contract Package CQ033 (Mid-Day Storage Yard), resolution is still required between MTACC and LIRR for final determination on the scope of the LIRR Force Account (FA) work regarding the Arch Street Yard Tie-in. Design work progresses on the provision for Amtrak

access by means of the SUB4 to Line 2 connection. The design package still requires design variance approvals regarding LIRR track standards and clearances in order to provide sufficient yard capacity to store the planned 24-12 car train-sets. MTACC is currently projecting a May 3, 2016, advertise date for this contract.

2.1 Engineering/Design and Construction Phase Services

As of the end of January 2016, MTACC reported that the overall Engineering effort was 99.0% complete, based on Earned Value for Design Deliverables, compared with a planned status of 100%. Its Cost Report shows 92.0% of the overall EIS & Engineering category as invoiced and 92.0% of the budgeted section titled "Design" (including Design Settlement) as having been invoiced.

Status:

Final resolution has been reached on the west end of the Mid-Day Storage Yard (CQ033) regarding what work is to be performed by Amtrak (track and signals) to tie into the ERT (East River Tunnels) and what work will be performed by the CQ033 contractor. Regarding the Arch Street Yard tie-in, resolution is still required between MTACC and LIRR for final determination on the scope of LIRR Force Account (FA) work. A potential new issue may arise regarding the design variances required for the track clearances in the Mid-Day Storage Yard. The GEC has noted that there are a large number of variances being requested, but is confident that the necessary approvals will be obtained. There have been two design variance meetings held in January 2016, but a more recent design variance meeting was cancelled in March 2016 and needs to be rescheduled. LIRR action is required. The advertise date for CQ033 is currently forecast for May 3, 2016**.**

Design work on the new, stand-alone CH061A package (completion of Queens Tunnel "A") continued. The 100% review submission has been accepted and the drawings were sealed on February 22, 2016. Contract advertisement had originally been scheduled for December 14, 2015, and then revised to March 1, 2016 , but this is being delayed pending final MTA approval. The CCC approved the budget adjustments to provide funding and ESA is currently awaiting final MTA approval based on NYS-CPRB sign-off on the Intent to Advertise.

Contract CH058 work scope is being divided and repackaged into two separate contracts: CH058A will contain the Tunnel B/C Approach Structure and CH058B will contain the East Bound Re-route. Current forecast dates for CH058A include: advertise April 12, 2017; bids due June 9, 2017; NTP August 1, 2017. Design work for this package is currently on hold pending completion of a GEC Proposed Change Order. Additionally, the final design for CH058B package is awaiting the completion of a rail traffic simulation study for Harold Interlocking, and the final decision on building the Temporary Eastbound LIRR Passenger (TELP) track. The study had been expected to be completed in January 2016 but has not yet been completed as of March 31, 2016.

The CS179 contractor continues to work on the design development of the various contract required systems. As noted in previous reports, the reduction of the backlog of submittal and RFI reviews continues to be an area of focus for the CS179 project team. In March 2016, the ESA CS179 CM noted again that the GEC has the equivalent of 29 full-time personnel focusing on this area and that the CS179 PMT will continue to work with the GEC to reduce the backlog even further. During 1Q2016, the contractor submitted Secondary Design documents on several systems in preparation for Secondary Design Reviews (SDRs). Preliminary Design packages for

the CCTV and Security Management System are scheduled for submission and review in April 2016.

Contract CS284 (GEC Contract CS086), Tunnel Signal Installation, is a stand-alone package. The MOU with LIRR for inclusion of Positive Train Control (PTC) in this contract is currently in development and progress is advancing. In its February 2016 Monthly report, MTACC reports that the proposed Change Order to the GEC for the addition of PTC was being issued and that the GEC is meeting with the LIRR to confirm the PTC-related scope. Contract advertisement is now anticipated during late 2Q to early 3Q2016.

For Contract VS086, Systems Package 3 – Signal Equipment Procurement, the GEC design was completed but revisions continue to incorporate the requirements of Positive Train Control (PTC).

Observation:

The GEC and PMT continue to consistently miss many of the target dates for remaining design activities on the project. Some of the delays are caused by the requirement to add Positive Train Control to the associated systems design and equipment. The PMOC remains concerned about the turn-around time to review of the Contract CS179 Preliminary Design Packages but notes the continuing progress made in reducing the backlog of design reviews.

Concerns and Recommendations:

The PMT design management team needs to focus on achieving intermediate milestones in a timely fashion and work closely with the GEC to help make this happen. The continual shifting of scope among various packages has made finalizing design documents and drawings extremely difficult. The PMOC had previously recommended that the PMT develop a design milestone tracking process for the remaining design work on the project, similar to what was done for the Harold catenary design work in 2012, in order to more effectively manage the design effort.

2.2 Procurement

As of end of January 2016, the Cost Report showed total procurement activity on the project as 72.1% complete, with $7.342 billion in contracts awarded out of the $10.177 billion current reported budget.

Status:

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 was extended four times from May 2, 2015, to September 15, 2015, when seven technical/schedule proposals were submitted. The cost proposal due date was pushed back several times from October 6, 2015, to October 27, 2015, when seven cost proposals were submitted. The PMT technical ranking recommendation letter was finalized, approved, and issued on October 30, 2015. During November 2015, five proposers of the seven were qualified for continued negotiation. Addendum #30 was issued to three remaining proposers and revised costs and schedules, representing the first round of Best and Final Offers, were submitted on December 30, 2015. The PMOC notes that ESA has requested the proposers to modify their schedules based on an increase of contract time from 40 to 42 months and schedule changes to accommodate delayed site access caused by the Contract CM006 Milestone #2 delay. Final presentations by the proposers for the CM007 contract were completed in January 2016. MTACC was able to complete the initial negotiations with the

apparent low bidder and the contract was approved by the MTA Board on January 27, 2016. Award is pending completion of negotiations on the Best and Final Offer (BAFO) schedule and acceptance of the final contract price and schedule. As of March 31, 2016, this contract has not been awarded and the delay to ESA program critical path is now expected to be over three months.

Contract VQ033, Mid-Day Storage Yard CILs, is a separate procurement package that will provide the eight Central Instrument Location huts (CILs) for Contract CQ033. VQ033 was advertised on August 17, 2015, and bids were received on October 30, 2015. The contract was awarded on January 15, 2016, with a Notice to Proceed date of January 19, 2016.

Concerns and Recommendations:

The lack of stability in the contracting strategy and Contract Packaging Plan (CPP) remains a concern. The scope shifts among different packages during 2015 have made it difficult to fully understand the impact of these changes to the overall ESA Project. The current CPP update (revision 10.2) was submitted on November 13, 2015. The PMOC continues to recommend that the ESA PMT should make an effort to adhere to the current version of the CPP and minimize shifting scope for the remainder of the project.

The PMOC had previously expressed its concern that the Contract CM007 proposal due date has been delayed a total of 4.5 months and that this significantly reduced the time for negotiations on this very large contract that is currently on the program schedule critical path. MTACC was not able to award this contract as planned before December 31, 2015, and the program critical path is now being delayed. As of March 31, 2016, this contract has not been awarded. [Ref: ESA-121-Sep 15]

2.3 Construction

The PMT reported in its January 2016 Monthly Progress Report that the total construction progress reached 60.9% complete vs. 62.9% planned.

Manhattan Contracts

CM005 – Manhattan South Structures

Status: As of January 31, 2016, the MTACC Forecast at Completion for CM005 increased slightly to $242,693,233. The MTACC forecast for Substantial Completion (SC) slipped by almost two months from February 8, 2016 to March 31, 2016. ESA reports that the slip beyond the contract SC date is due to remaining work volume and contractor's production rate. Actual construction progress for January 2016 was 1.4% versus 1.6% planned. Cumulative progress through January 31, 2016, was 96.3% actual versus 97.0% planned.

		1	2	3	4	5	6
		Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost		$200.6M (Award)	$237.2M	+36.6M +18.2%	$242.7M	+42.1M +21.0%	+5.5M +2.7%
Scheduled SC Date		02/06/16	02/06/16		03/31/16		
Duration (NTP-SC)		29 mos.	29 mos.	0 mo. 0.0%	31 mos.	2 mos. 6.9%	2 mos. 6.9%
Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
97.0%	96.3%	31.4%	2.6%	10.0%	1.7%	3.7%/mo.	1.8%/mo.

From January 2016 ESA Monthly Report

Construction Progress: During March 2016, the contractor completed arch pneumatically applied concrete (PAC) for the upper level walls GCT 1&2 East Wye. The contractor continued wall, beam, stair and duct bench concrete construction GCT 1&2 West Wye. At the south end of the Westbound Cavern, the contractor has completed lining all four connection tunnels to the GCT 1&2 West Wye. The contractor also continued to apply PAC on the archway of Access Tunnel #1. Masonry wall construction continued at the upper level TT1 at 38th St. At the 37th St. Plenum, the contractor continued interior walls and slab concrete construction. The contractor continued contact grouting, FUKO grouting, and remedial grouting site wide. The contractor continued punchlist activity site wide. The contractor planned to complete all work including punch list activity by the end of March 2016, except for the last GCT 1 & 2 West Wye south stairs concrete pour and the upper 37th St. Plenum interior concrete slab pour, both to be done in April 2016.

Observations/Analysis: As of March 31, 2016, the contractor continued construction in the Upper level of TT1 (38th St. Vent) and the GCT 1&2 West Wye crash wall. The PMOC also notes that ESA and the contractor continue to work well together.

Concerns and Recommendations: The PMOC has no concerns for Contract CM005.

CM006 – Manhattan North Structures

Status: As of January 31, 2016, MTACC increased its Forecast at Completion for CM006 to $360,582,618. The MTACC forecast for Substantial Completion slipped four months to June 1, 2017. Actual construction progress for January 2016 was 3.4% versus 4.5% planned. Cumulative progress through January 31, 2016, was 56.5% actual versus 80.5% planned. ESA reports that as part of CM007 contract negotiations, a CM006 contract modification will be formalized to delete Milestone #2 and extend Milestone #3 and Substantial Completion, to align the milestones with CM007 contract access requirements.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$294.2M (Award)	$324.6M	+30.4M +10.3%	$360.6M	+66.4M +22.6%	+36.0M +11.1%
Scheduled SC Date	11/30/16	11/30/16		6/01/17		
Duration (NTP-SC)	32 mos.	32 mos.	0 mo. 0.0%	38 mos.	6 mos. 18.8%	6 mos. 18.8%
Percent Complete	**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan / **Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
80.5% / 56.5%	41.7%	3.5%/mo.	23.0%	3.8%	4.4%/mo.	2.7%/mo.

From January 2016 ESA Monthly Report

Construction Progress: Construction Progress: During March 2016, the CM006 contractor continued lead abatement, concrete repairs, cable vault, and duct bank work at the 63rd St. Tunnels and Structures. The contractor continued arch construction with pneumatically applied concrete (PAC) at Cross Passages 7 and 8, and continued PAC construction at the 50th St. Air Plenum and walls in Tunnels 302 and 303. The contractor continued duct bench construction at Tunnel WB1 between 55th St. and the GCT 5 West Wye Cavern. The contractor continued the lining of Tunnel WB1, installing permanent reinforcing ribs at two areas of incompetent rock. Contact grouting continued at Tunnel EB2. In the tunnels between 50th St. Vent Facility and the north end of the Eastbound Cavern, the contractor continued to place rebar for the ventilation connection slab. During March 2016, the contractor continued Westbound Cavern BOH upper

level wall construction at the north end of cavern. The contractor will continue two shifts for the 63rd St. Tunnels and Structures work until complete in June 2016, and then the project will continue single shift.

Observations/Analysis: As reported before, the contractor is not meeting the recovery schedule milestones. In March 2016, ESA reported that an "agreed to" schedule, which remains under review, had been achieved with the contractor to align with CM007 contract requirements. The CM006 contractor's rate of construction progress continued to lag the planned progress rate. The PMOC has observed, however, that ESA and the contractor continued to work well together.

Concerns and Recommendations: ESA must complete review of an apparent "agreed to" contractor CPM schedule submittal, which changed milestone and substantial completion dates.

CM014A – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that, through January 31, 2015, the project Forecast at completion $58,222,843, slightly reduced from the previous $58,414,993. MTACC reports in their January 2016 Monthly Report that the forecast date for Substantial Completion is February 1, 2016. However, in their Quarterly Monthly Report ending December 31, 2015, it is reported the forecast substantial completion date as February 29, 2016. Regardless, the Project Office has advised the PMOC that substantial completion will be based on completion of energization of all 6 feeds. The PMOC projects this to be complete in March 2016. MTACC reports there was zero actual construction progress for January 2016 with no progress planned. Cumulative progress through January 2016, remained 93.4% versus 100.0% planned. The MTACC reported planned versus actual percent complete has been inconsistent throughout 2015, with no explanations given in the respective MTACC reports.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$43.50M (Award)	$58.86M	+15.36M +35.31%	$58.22M	+14.72M +33.83%	-0.64M -1.08%
Scheduled SC Date	4/25/13	12/6/15		1/31/16		
Duration (NTP-SC)	18 mos.	49 mos.	+31 mos. +172.22%	+51 mos.	+33 mos. +183.33%	+2 mos. +4.08%

Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
100%	93.4%	N/A	N/A	N/A	N/A	N/A	N/A

From January 2016 MTA Monthly Report

Construction Progress: During March 2016 the temporary switchgear to provide power for construction was turned over to the CM014B contractor. It also allows the CM014B contractor to turn the current temporary power source back over to Metro North. Training of CM014B electricians (5-Star) for turnover of the temporary switchgear and substation was completed and ConEd has approved the personnel. MTACC has advised that substantial completion will be declared when all 6 permanent power feeds are energized. Through March 2016, 5 of the total 6 feeds have been energized. During this period progress in completing outstanding work items, outside of substation energization, continued to be slow. Electrical testing continued. All 6 feeders must be energized to complete the SCADA and FM-200 (Fire Suppression) system.

Observations/Analysis: The completion of energization of the substation and the outstanding work items continues to be delayed.

Concerns and Recommendations: The PMOC is concerned that the continued presence of the CM014A contractor at the site gives CM014B an excuse for delay claims.

CM014B – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that, through January 31, 2016, the Forecast at completion forecast decreased slightly to $461,057,357 from the previous $461,967,500. The Substantial Completion date remains August 18, 2018. Actual construction progress for January 2016 was 1.5% versus 1.7% planned. Cumulative progress through January 2016 was 12.2% actual versus 8.9% planned.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$404.62M (Award)	$425.42M	+20.80M	$461.06M	+56.44M +13.94%	+35.64M +8.37%
Scheduled SC Date	8/18/18	8/18/18		8/18/18		
Duration (NTP-SC)	42 mos.	42 mos.	0 mo.	42 mos.	0 mo.	0 mo.

Percent Complete		**Actual – 12 mos.***		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
8.9%	12.2%	NA*	NA*	10.4%	1.7%	2.80%	2.80%

From January 2016 MTA Monthly Report

*CM014B NTP was issued in Feb 2015; therefore, it has not had 12 months of construction yet.

Preliminary Schedule – The extended preliminary schedule continues to extend through March 2016, and is used as the schedule for managing the work.

Baseline Schedule – The final submission was received on February 16, 2016 and returned PAN (Proceed as Noted) on March 17, 2016. Reportedly, there are a significant number of comments.

Milestone #1 (Complete Terminal Management Center, Communication Room C-2 & Communication Closet C-5) – In its January 2016 monthly report MTACC indicated that the milestone date of March 5, 2016, had slipped to May 16, 2016. At the March 17, 2016, Progress Meeting, the Project Office advised that the milestone has now slipped to June 1, 2016.

Milestone #2 (June 4, 2016) – Room 222 Communications; Installation of ductwork, grilles, diffusers, and exhaust fan was completed. Began erection of CMU walls. Room 308 ICC;

Began installation of refrigeration, condensate lines, and 2 AC units. The CCM has advised that this milestone is also anticipated to be delayed.

Construction Progress: Work Trains are loaded/unloaded at B/N Yard. Surveying continues throughout and will continue for the duration of the project.

Concourse (Madison Yard) – Through March 31, 2016, installation of underslab utilities was approximately 70% complete. The contractor continues with waterproofing, rebar, forming and placement of cast-in-place manholes and ejector pits. Continued placing PAC (Pneumatically Applied Concrete) headers at the top of the CMU, UA walls in Zone #2 along Track #115. Continued drywall installation in the TMC Room. Placement of CLSM (Controlled Low Strength Material) backfill continues from south to north. Final concrete slab invert placement and grounding grid installation continues at the north end of the concourse for the new BP-20 Substation.

Demolition (Hog Houses & MTA Building) - Demolition remains delayed by MTACC. Relocation of personnel will be to the new trailer park on E. 52nd St., which is not completed. This work is being performed by the CM005 contractor. The MTA CCU has advised that demolition permits must be issued for this work.

Wellways – Installation of work platforms is complete in Wellway #1 and continuing in Wellway #2. Conduit installation is underway and sprinkler piping will begin the week of March 20, 2016, in Wellway #1.

Biltmore Connection – This work is temporarily on hold while structural steel shop drawings for structural steel and Construction Work Plans (CWP) are approved.

Dining Concourse Connection – Waiting for shop drawing approval for structural steel to frame the new escalator opening and stairs to the Concourse.

Elevator T-01 - Abatement and demolition of the existing elevator continues at night at the Burma Road Level and in the shaft.

48th St. Entrance – Lead abatement is required to the existing steel. Continuing with mechanical excavation and hanging utilities below the street decking. Began excavating for the escalator pit footing plenum. Constructing SOE (Support of Excavation) Wall at the ConEd vault. The contractor reports that the rock excavation is advancing smoothly and there is a chance that they may not have to use blasting to complete the work.

44th St. Vent Building - Began installation of the remainder of the permanent steel stair.

50th St. Vent Building – Block wall work has begun at the 2nd Basement Level. Conduit installation continued at the Concourse and 1st Basement Level. Continued installation of sprinkler piping. A change order has been developed for CM014B to perform the Elevator #9 shaft alignment corrective work that was previously installed by the CM013 contract. Continued replacement of temporary wiring with permanent LSZH wiring/cables (Low smoke Zero Halogen).

Observations/Analysis: The PMOC observes that the contractor is having issues with completing the finishes in the wellway arches. This is impacting the schedule for delivery of the escalator components, which may delay removal of the tracks for the work trains.

Concerns and Recommendations: MTACC needs to expedite approval of the contract Baseline Schedule. As of the date of this report, the delays to the milestones have not affected the projected date of substantial completion.

Queens Third-Party Contracts

CQ032 Contract – Plaza Substation and Queens Structures

Status: As of January 31, 2016, the Forecast at Completion for CQ032 increased to $261,737,072. MTACC Forecast for Substantial Completion changed to July 6, 2016, from August 23, 2016. ESA reports that contract modification alternatives are being assessed to mitigate schedule impacts due to the vent shaft issue at the 23rd St. Facility. Actual construction progress for January 2016 was 1.0% versus 0.9% planned. Cumulative progress through January 31, 2016, was 95.0% actual versus 95.3% planned.

		1	2	3	4	5	6
		Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost		$147.4M (Award)	$236.2M	+88.8M +60.2%	$261.7M	+114.3M +77.5%	+25.5M +10.8%
Scheduled SC Date		8/14/14	7/6/16		7/6/16		
Duration (NTP-SC)		36 mos.	59 mos.	+23 mo.	59 mos.	+23 mos. +63.9%	0 mos. 0.0%
Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
95.3%	95.0%	15.8%	1.3%/mo	9.1%	1.5%	1.0%/mo.	1.0%/mo.

From January 2016 ESA Monthly Report

Construction Progress: During the month of March 2016, the CQ032 contractor continued exterior brickface, architectural finishes, overhead MEP, and roof work at the Yard Services Building (YSB). The contractor continued architectural finishes at the Plaza Vent Structure (PVS), and continued Plaza siteworks. Removal of the BMT underpinning system south side of Northern Blvd. was completed, and north side removal is pending DOT approval. The contractor continued installation and testing of fire standpipe in Tunnel A. The contractor continued excavation work for obstructions at the SW vent shaft of 23rd St. Facility and will commence excavation for the NW vent shaft.

Observations/Analysis: ESA reports schedule impact to the Substantial Completion date caused by the 23rd St. Facility vent shaft issue. As of March 31, 2016, the contractor had still not been able to correct the water infiltration issue at 23rd St.

Concerns and Recommendations: The PMOC is concerned that the water infiltration issues at 23rd St.will have negative impact on the Substantial Completion date.

Harold Interlocking Contracts

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

Status: MTACC's Forecast at Completion for CH053 increased slightly during January 2016 to $290,360,701 as the contract neared Substantial Completion. The MTACC's previous forecast of February 29, 2016, for Substantial Completion was realized as MTACC declared Substantial Completion on that date. Actual reported construction progress for January 2016 was 0.1% versus 0.0% planned (the project was supposed to be complete by now). Cumulative progress through January 31, 2016, was 96.0% actual versus 100.0% planned (MTACC offered no explanation of this discrepancy in its January 2016 Monthly Report, but the PMOC notes that MTACC reports construction progress on accumulated project cost rather than actual construction).

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$137.30M (Award)	$296.7M	+$159.4M +116.1%	$290.4M	+$153.1M +111.5%	-$6.3M -2.1%
Scheduled SC Date	5/5/10	2/18/15		2/29/16A		
Duration (NTP-SC)	28 mos.	85 mos.	57 mos. +203.6%	97 mos.	+67 mos. +239.3%	+12 mos. +14.1%

Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
100.0%	96.0%	1.3%	0.1%	0.0%	0.0%	NA	Achieved SC 2/29/16

From January 2016 ESA Monthly Report

Construction Progress: MTACC declared "Substantial Completion" for CH053 on February 29, 2016. During March 2016, the contractor continued to make miscellaneous modifications to catenary structures in Harold Interlocking, prepare trackbed for the Westbound Bypass track between 48th and 43rd Sts., construct access roads, install catch basins and communications duct banks, and make punchlist repairs throughout its job sites.

Observations and Analysis: There are still several hundred feet of Westbound Bypass trackbed to construct, as well as, numerous catenary modifications and other punchlist repairs to make before MTACC and the contractor can achieve Final Completion.

Concerns and Recommendations: The PMOC no longer has concerns about the CH053 contract, but it does recommend that MTACC and the contractor continue to aggressively pursue all remaining construction and repairs necessary to achieve "Final Completion".

CH057 Contract – Harold Structures Part 3

Status: MTACC's Forecast at Completion for CH057 remained at $87,870,844 during January 2016. The Substantial Completion date remained at June 19, 2017, for the base contract (this contract has several options which could extend the eventual Substantial Completion date). Actual construction progress for January 2016 was 0.0% versus 0.7% planned. Cumulative progress through January 31, 2016, was 2.0% actual versus 1.4% planned.

		1	2	3	4	5	6
		Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost		$53.4M (Award)	$53.4M	$0.0M 0.0%	$87.9M	+$34.5M +64.6%	+$34.5M +64.6%
Scheduled SC Date		7/5/17	7/5/17		6/19/17		
Duration (NTP-SC)		19 mos.	19 mos.	0 mos. 0.0%	18 mos.	-1 mo. -5.0%	-1 mo. -5.0%
Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
1.4%	2.0%	N/A	N/A	N/A	N/A	5.3%/mo.	6.5%/mo.

From January 2016 ESA Monthly Report

Construction Progress: The CH057 contractor began installation of secant and soldier piles in the East Approach Structure of Tunnel D for support of excavation (SOE) under 39th St. overhead bridge and began installation of soldier piles behind the abutments at the 48th St. bridge for SOE during March 2016.

Observations and Analysis: The contractor began its field construction in March 2016 and, to date, has not encountered any conditions that may have a negative impact on its schedule.

Concerns and Recommendations: The PMOC has no concerns about or recommendations for the CH057 contract at this time.

Contract CH057A – Part 3 Westbound Bypass

Status: MTACC's Forecast at Completion for CH057A decreased slightly during January 2016 to $148,224,988. MTACC extended its forecast for Substantial Completion by 5 days to April 24, 2017. Actual construction progress for January 2016 was 0.6% versus 7.2% planned. Cumulative progress through January 31, 2016, was 30.3% actual versus 94.8% planned.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$103.3M (Award)	$109.2M	+$5.9M	$148.2M	+$44.9M +43.5%	+$39.0M +35.7%
Scheduled SC Date	1/31/16	1/31/16		4/24/17		
Duration (NTP-SC)	26 mos.	26 mos.	0 mo.	41 mos.	+15 mos. +57.7%	+15 mos. +57.7%

Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
94.8%	30.3%	2.5%	0.2%	14.4%	2.4%	NA	5.0%

From January 2016 ESA Monthly Report

Construction Progress: During March 2016, the CH057A contractor concentrated its construction efforts on excavation of the East Approach Structure to the launch block for the "jacked box" tunnel shield and on de-watering the West Approach Structure. While the excavation of the East Approach proceeded as planned, the contractor has not been able to entirely achieve the design profile of de-watering in the West Approach Structure. There is still a small area (approximately 10-15') in which the contractor has not achieved the design profile. Since this is such a small area compared to the remainder of the work, the contractor has decided to begin excavation of the West Approach and mitigate this location (which will be near the end of its excavation) when excavation encounters it.

Observations and Analysis: The PMOC believes that the contractor has decided upon an appropriate approach to its excavation and mitigation of the lone water table issue for the West Approach Structure. This will allow the contractor to begin excavation in April 2016 without further delay.

Concerns and Recommendations: Nonetheless, the PMOC remains concerned that excavation of the Westbound Bypass Tunnel continues to be delayed. At present, the PMOC estimates that excavation is now approximately 7 to 8 months behind its original schedule. Although the contractor has begun excavation of the East Approach Structure and is ready to begin excavation

of the West Approach Structure in April 2016, the contractor must continue to address its construction schedule aggressively to avoid falling further behind schedule. The PMOC recommends that the ESA PMT and the contractor remain vigilant to develop ways to progress construction and improve upon the schedule, if possible.

Systems Contracts

VH051 (Part 1) – Harold and Point Central Instrument Locations (CILs) and Harold Tower Supervisory Control Ssytem (VH051 Part 2)

Status: VH051 Part 1 and 2 are procurement packages for LIRR Communications and Signal (C&S) system equipment and apparatus for the Harold and Point Interlocking Central Instrument Locations (CILs) (Part 1) and Harold Tower Supervisory Control System (Part 2), respectively. Purchase of all materials has already been made and delivery of remaining CILs will be a "just in time" for "ESA First" scheduled installation. Factory Acceptance Testing will be done prior to scheduled delivery of each CIL. The Harold Tower Supervisory Control System (Part 2) is in service. To date, both the "H4" and "H3" CILs in Harold Interlocking have been placed in service. "H5", "H6", and Location 30 CILs are presently scheduled for cutover in 2017 and "H1" and "H2" CILs are scheduled for 2018.

CS179 - Systems Package 1-Base Contract

Status: As of the end of February 2016, MTACC's Budget and forecast for CS179 remained at $606,938,540. In its February 2016 Monthly Report, MTACC shows a progress curve for the CS179 contract that presents actual contract progress as 19.5% versus a planned 21.6%; numbers that are based on actual versus projected costs, not physical construction efforts. As presented, these progress numbers imply that the contract is moving further behind schedule from previous reports. In the Milestones chart of its February Monthly Progress Report for this CS179 contract, MTACC continues to show the November 2019 forecasted substantial completion (SC) date, although the PMOC is aware that MTACC and the contractor have negotiated a revised substantial completion date of Januray 20, 2020. This revised SC date represents a 56 day delay and, as noted in the discussion, is dependent upon the work progress and schedule of Contract CM007; a contract that, while approved for award in January 2016 by the MTA Board, has yet to be awarded and to have a Notice to Proceed issued. Further, CS179 contract Milestone #1, the completion of work in a portion of the Vernon substation facility, was already 291 days behind schedule and will be further delayed until the water infiltration issue at this facility is successfully resolved. The delay in the completion of this Milestone #1 is also causing a schedule impact to the CS084 contract. Several CS179 contract options, or parts thereof, have been exercised to date as a result of the appropriate funding becoming available. As noted in an earlier PMOC report, the Options exercised in November 2015 are Option Nos. 2A, 6, and 7. The other portion of the original Option No. 2, now designated "No. 2B - Manhattan Work", must still be exercised, contingent upon funding availability. Contract Option No.3 – "GCT Concourse" has been split into two parts; Option No.3A – GCT Concourse 1 and Option No. 3B – GCT Concourse 2. Both these options are also awaiting funding availability before they are exercised. As the systems designs have progressed, several potential Buy/Ship America compliance issues with contract material and systems equipment have been identified. These potential issues include CCTV and video display panel equipment, Heating Ventilation and Air Conditioning (HVAC) units, variable frequency drives for motors, door hardware for pressurized doors, and DC transfer switches. All of these potential Buy/Ship America compliance issues are

currently under review by MTA to determine if the items are non-compliant and if waiver requests are required.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$333.6M (Award)	$413.7M	+$80.1M +24.0%	$606.9M	+$273.3M +81.9%	+$193.2M +31.8%
Scheduled SC Date	11/25/19	11/25/19		11/25/19		
Duration (NTP-SC)	68 mos.	68 mos.	0 mo.	68 mos.	0	0
Percent Complete	**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan / **Actual**	**Total***	**Avg./mo.***	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
21.6% / 19.5%	NA	NA	10.9%	1.8%	1.5%/mo.	1.8%/mo.

* MTACC did not produce a CS179 progress curve for its March 2016 Monthly Report

Design Progress: The CS179 contractor continues to work on the design development of the various contract required systems. As of the end of March 2016, there are still two of the required Preliminary Design Review (PDRs) that need to be held. Several Second Design Reviews (SDRs) packages were submitted and meetings to discuss the designs are held as needed. Once each SDR package is approved or commented on, the contractor will progress that system design to the Final Design (FD) stage. As noted in previous reports, the reduction of the backlog of submittal and RFI reviews continues to be an area of focus for the CS179 project team. The ESA CS179 CM notes that the GEC has the equivalent of 29 full-time personnel focusing on this area and that the CS179 PMT will continue to work with the GEC to reduce the backlog even further

Construction Progress: During March 2016, the CS179 contractor continued various elements of work (conduit installations, concrete work, temporary power installations, etc.) at the 2nd Ave.; B10; Roosevelt; Vernon; Tunnel Tracks B/C and D; Yard Lead Tunnel; 29th St.; Queens Plaza; 39th St. and 63rd St. facilities. The two Stop Work Orders (SWOs) for work in the control rooms at the Vernon and B10 facilities are still in effect. As previously reported, these SWOs were issued because of the design conflict between the room sizes and equipment layouts in the control rooms. The GEC is still working on solutions to this issue and no date was given for the rescinding of the SWOs. Work at the 23rd Street facility remains on hold as a result of an issue with water infiltration through the concrete floor and discussions with the CQ032 contractor regarding this issue continue. CS179 contract work in Tunnel Track A and the slab demolition in the Vernon substation pump room has started. At the most recent CS179 contract Progress

meeting, the ESA CM indicated that a contract modification to revise the completion date of contract Milestone #1 (the Traction Power Room at the Vernon Facility), a milestone that the contract's schedule shows as being delayed, will be issued shortly. An analysis of the contractor's monthly schedule updates will be needed to ascertain if the milestones are delayed by any amount and what impact they might present to the completion of the contract. The PMOC continues to request that the contractor's monthly schedule updates, and the MTACC's comments on the updates, be provided to the PMOC.

Concerns and Recommendations: The PMOC remains concerned regarding the timely delivery and discussion of the contractor's monthly schedule updates. These schedule updates are currently not available for discussion at the monthly progress meetings, nor are they, or the MTACC's comments about them, made available to the PMOC for review and evaluation.

CS084 - Traction Power System Package #4

Status: MTACC's Forecast at Completion for the CS084 contract remained at $79,717,772 during February 2016. Its forecast for Substantial Completion remained at December 2, 2019. Actual construction progress for February 2016 was 1.9% versus 1.6% planned. Cumulative progress through February 29, 2016, was 6.1% actual versus 10.5% planned; numbers that are based on actual versus projected costs, not physical construction efforts. An analysis of the status of the work activities shown on the approved baseline schedule is necessary to determine the status of the progress of physical work on this contract. Following the March 2016 Monthly Progress meeting, the PMOC attended a special schedule meeting called by the CS084 CM to discuss the contractor's latest schedule update – no major issues were identified. The PMOC has requested copies of the CS084 approved baseline schedule and the monthly schedule updates in Primavera format for review and evaluation.

		1	2	3	4	5	6
		Original Baseline	**Current Approved Baseline**	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost		$71.2M (Award)	$71.2M	+$0.0 0.0%	$79.7M	+$8.5M +11.9%	+$8.5M +11.9%
Scheduled SC Date		12/3/19	12/2/19		12/2/19		
Duration (NTP-SC)		61 mos.	61 mos.	0	61 mos.	0	0
Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total***	**Avg./mo.***	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
10.5%	6.1%	NA	NA	1.9%	0.3%/mo.	1.6%/mo.	2.2%/mo.

* MTACC did not produce a CS179 progress curve for its March 2016 Monthly Report

Design Progress: The contractor continued with the transmission of contractual submittals and its design development of the substations. The contractor asserts that the inability to receive approval of the C05 facility switchgear and the general C08 substation designs are impacting its ability to meet its own design, fabrication, and installation schedules. The ESA PMT indicates that these design reviews will be given a priority. There continue to be other design issues that have the potential to impact, or have already impacted, various contract Milestone completion dates. The CS084 PMT indicated that resolution of these design issues and the preparation of revised designs, as may be necessary, has been elevated to priority status to preclude contract schedule slippage.

Construction Progress: In March 2016, the MTACC reported that the contract modification for the L3 electrical service work was executed, allowing the contractor to progress the installation

work. The only other construction work progressing on this contract is the surveying of the various work locations. The contractor is reporting that contract Milestone #s 1 and 2 are delayed due to its inability to get approval of the C05 and C08 substation designs. Several construction conflicts and water infiltration issues in the existing facilities have been noted and are under review by the ESA CM and the contractor to identify potential resolutions. The identification and implementation of permanent resolutions to the water infiltration issue in the various existing facilities has the potential to seriously impact the overall contract completion schedule.

Concerns and Recommendations: The PMOC encourages the ESA PMT to quickly resolve any outstanding design comments on the C05 and C08 substation designs so that those designs can be approved and used for equipment fabrication and the follow on design bases for the remaining substations. The water infiltration issues in the various facilities is, in the opinion of the PMOC, a serious problem that needs to have an acceptable mitigation methodology identified and successfully implemented so as to preclude any serious schedule impact on the CS084 and CS179 contracts. The ESA PMT needs to prioritize the steps to permanently mitigate this problem.

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

Harold Stage I Amtrak FA (FHA01)

Status: MTACC's Forecast at Completion for FHA01 remained at $18,824,861 during January 2016. MTACC extended its forecast for Substantial Completion by one month to September 15, 2019. Actual construction progress for January 2016 was 0.0% versus 0.3% planned. Cumulative progress through January 31, 2016, was 98.8% actual versus 99.7% planned.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline***	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$9.5M (Award)	$18.8M	+9.3M +97.9%	$18.8M	+9.3M +98.0%	$0.0 0.0%
Scheduled SC Date	9/30/10	2/4/16		9/15/19**		
Duration (NTP-SC)	39 mos.	103 mos.	64 mos. +164.1%	147 mos.	+91 mos. +233.3%	+44 mos. +42.7%

Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
99.7%	98.8%	1.0%	0.1%	1.0%	0.2%	N/A- Past Due	0.03%/mo.

From January 2016 ESA Monthly Report

*The term "baseline" is a misnomer with Force Account work. In Amtrak's case, the "original baseline" has increased to account for scope changes as detailed in the Project Initiations (PIs) that have been executed for Stage 1. It is presented in the table to be consistent with the contract tables contained elsewhere in this report.

**Substantial Completion dates for all Amtrak Force Account Work packages extended as a result of the MTACC's "ESA First" Schedule re-baseline.

Construction Progress: Amtrak Force Account personnel did not perform any significant Stage 1 construction during March 2016.

Observations and Analysis: As a result of the adoption of the "ESA First" construction schedule, MTACC has de-emphasized its previous program of construction by "stages". Consequently, the remaining former Stage 1 construction elements are not presently ESA PMT priorities.

Concerns and Recommendations: Because the "ESA First" schedule re-baseline extended much of the remaining Amtrak Force Account construction, the PMOC presently has no concerns that Amtrak has the technical capacity and capability to perform the work by the revised Substantial Completion date. As a result, the PMOC has no recommendations at this time.

Harold Early Stage 2 Amtrak FA (FHA02)

Status: MTACC's Forecast at Completion for FHA02 remained at $60,150,231 during January 2016. The MTACC forecast for Substantial Completion was shortened by two months to December 6, 2020. Actual construction progress for January 2016 was 0.0% versus 0.0% planned. Cumulative progress through January 31, 2016, was 100.0% actual versus 97.8% planned (MTACC did not offer an explanation for this discrepancy in its January 2016 Monthly Report, but the PMOC notes that it reports construction progress based on accumulated project cost rather than actual construction).

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline***	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$9.70M (Award)	$45.4M	+35.7M +368.0%	$60.2M	+50.5M +520.6%	$14.8M +32.6%
Scheduled SC Date	9/30/13	8/15/17		12/6/20**		
Duration (NTP-SC)	58 mos.	106 mos.	48 mos. +82.8%	146 mos.	+88 mos. +151.7%	+40 mos. +37.7%
Percent Complete	**Actual – 12 mos.**		**Actual- 6 mos.**		**Avg. Reqd. Progress**	
Plan / **Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
97.8% / 100.0%	7.2%	0.6%	4.9%	0.8%	1.7%	0.04%

From January 2016 ESA Monthly Report

* The term "baseline" is a misnomer with Force Account work. In Amtrak's case, the "original baseline" has increased to account for the scope changes as detailed in the Project Initiations (PIs) that have been executed for Stage 2. It is presented in the above table to be consistent with the contract tables contained elsewhere in this report.

**Substantial Completion dates for all Amtrak Force Account Work packages extended as a result of the MTACC's "ESA First" Schedule re-baseline.

Construction Progress: During March 2016, Amtrak Electric Traction personnel continued to make catenary modifications at the B-912, B-913, B-914, B-924 MOD, and B-924WA catenary poles and continued to make catenary revisions for the future installation of catenary wires over the #747 crossover in "F" Interlocking. Communications personnel installed communications cable between "R" and "T" Interlockings.

Observations/Analysis: Substantial Completion for FHA02 has been extended as a result of MTACC's adoption of the "ESA First" Schedule. The PMOC believes that Amtrak will be able to perform all remaining FHA02 work by the new Substantial Completion date.

Concerns and Recommendations: The PMOC has no concerns about or recommendations for FHA02 construction at this time.

Loop Interlocking CIL Amtrak FQA65

Status: MTACC's Forecast at Completion for FQA65 remained at $33,287,863 during January 2016. The MTACC forecast for Substantial Completion remained at December 12, 2022. Actual construction progress for January 2016 was 1.4% versus 0.6% planned. Cumulative progress through January 31, 2016, was 16.9% actual versus 57.4% planned.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline***	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$9.1M (Award)	$21.0M	+11.9M	$33.3M	+24.2M +265.9%	$12.3M +58.6%
Scheduled SC Date	8/12/18	8/12/18		12/12/22**		
Duration (NTP-SC)	55 mos.	55 mos.	No Change	107 mos.	+52 mos. +94.5%	+52 mos. +94.5%

Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
57.4%	16.9%	8.5%	0.7%	3.8%	0.6%	1.8%	1.1%/mo.

From January 2016 ESA Monthly Report

* The term "baseline" is a misnomer with Force Account work. In Amtrak's case, the "original baseline" has increased to account for the scope changes as detailed in the Project Initiations (PIs) that have been executed for Stage 2. It is presented in the above table to be consistent with the contract tables contained elsewhere in this report.

**Substantial Completion dates for all Amtrak Force Account Work packages extended as a result of the MTACC's "ESA First" Schedule re-baseline.

Construction Progress: During March 2016, Amtrak C&S personnel installed signal cable at the "F2E" signal hut, conduit at the "F2J" signal hut, and continued to install signal trough along Loop 2 between Loop and future "T" Interlockings.

Observations/Analysis: Substantial Completion for FQA65 has been extended as a result of MTACC's adoption of the "ESA First" Schedule. The PMOC believes that Amtrak will be able to perform all remaining FQA65 construction by the new Substantial Completion date.

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

Harold Stage 1 LIRR FA (FHL01)

Status: MTACC's Forecast at Completion for FHL01 remained at $24,379,363 during January 2016. The MTACC forecast for Substantial Completion remained at September 19, 2016. Actual construction progress for January 2016 was 0.0% versus 0.0% planned. Cumulative progress through January 31, 2016, was 86.8% actual versus 100.0% planned.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline***	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$28.8M	$24.4M	-$4.4M -15.3%	$24.4M	-$4.4M -15.3%	$0.0 0.0%
Scheduled SC Date	9/30/10	4/9/15		9/19/16		
Duration (NTP-SC)	39 mos.	94 mos.	+55 mos. +141.0%	111 mos.	+72 mos. +184.6%	+17 mos. +18.1%

Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
100.0%	86.8%	0.9%	0.1%	0.9%	0.2%	0.1%	2.2%

From January 2016 ESA Monthly Report

* The term "baseline" is a misnomer with Force Account work. In the LIRR's case, the "original baseline" has decreased to account for the scope changes as detailed in the Memoranda of Understandings (MOUs) that have been executed for Stage 1. It is presented in the above table to be consistent with the contract tables contained elsewhere in this report.

Construction Progress: LIRR Force Account personnel did not perform any significant Stage 1 construction during March 2016.

Observations and Analysis: Recent ESA PMT priorities have been on Stage 2 and Stage 3 work. Significant remaining LIRR Stage 1 construction includes completion and commissioning of the new signal power separation system and the new G02 Substation.

Concerns and Recommendations: The PMOC remains concerned that, because of MTACC's present emphasis on Stage 2 and Stage 3 construction, Stage 1 work will be left undone until the end of the project. The PMOC believes that work not done when scheduled will tend to accumulate and eventually delay the project's RSD further than it already is. The PMOC recommends that the ESA PMT monitor incomplete or unstarted tasks, develop a master list of critical ones, and develop a plan to address them well before the RSD date approaches.

Harold Early Stage 2 LIRR FA (FHL02)

Status: MTACC's Forecast at Completion for FHL02 remained at $92,932,559 during January 2016. MTACC extended its forecast for Substantial Completion by one month to June 19, 2019. Actual construction progress for January 2016 was 0.8% versus 1.2% planned. Cumulative progress through January 31, 2016, was 83.2% actual versus 88.9% planned.

	1	2	3	4	5	6
	Original Baseline	**Current Approved Baseline***	**Change to Original (2-1)**	**EAC/ Forecast**	**Change to Original (4-1)**	**Change to Current (4-2)**
Contract Cost	$7.40M	$68.0M	+$60.6M +818.9%	$92.9M	+85.5M +1155.8%	$24.9M 36.6%
Scheduled SC Date	11/30/15	11/25/16		6/19/19		
Duration (NTP-SC)	75 mos.	87 mos.	+12 mos. +16.0%	118 mos.	+43 mos. +57.3%	+31 mos. +35.6%

Percent Complete		**Actual – 12 mos.**		**Actual - 6 mos.**		**Avg. Reqd. Progress**	
Plan	**Actual**	**Total**	**Avg./mo.**	**Total**	**Avg./mo.**	**Contract SC**	**Forecast SC**
88.9%	83.2%	18.2%	1.5%	5.8%	1.0%	1.3%/mo.	0.4%/mo.

From January 2016 ESA Monthly Report.

*The term "baseline" is a misnomer with Force Account work. In LIRR's case, the "original baseline" has increased to account for the scope changes in the MOUs that have been executed for Stage 2. It is presented in the above table to be consistent with the contractor tables contained elsewhere in this report.

Construction Progress: During March 2016, LIRR Signal personnel continued to identify, organize, pull, and terminate signal cables at the "H6" CIL and its signal cases; install conduits and signals at the recently installed Signal Bridge #16; continued to make circuit revisions at the "H1" and "H3" CILs; placed the "H2" CIL; continued breakdown testing at signal cases "H1A", "H1B", and "H1C"; and continued conduit installation at the #6167 crossover and the "H2" CIL. LIRR High Tension personnel continued to install conduits and pull high tension cables between towers T36 and T40. LIRR Light and Power personnel continued to install and terminate cables between the transformers and the CILs at "H1" and "H6".

Observations and Analysis: The PMOC does not consider the 2016 LIRR ESA construction program to be very aggressive with only 3 turnout installations and cutovers of the new G02 Substation and the Signal Power Separation systems (both of which have been under construction for several years) scheduled. Additionally, the last major cutover of "H5", "H6", and Location 30 (one cutover) has been delayed from 2016 to 2017. Although LIRR Signal personnel continue to construct the revised signal system on a daily basis, LIRR needs to pursue

its Track and Electric Traction work more aggressively if it doesn't want construction to "pile up" near the end of the project.

Concerns and Recommendations: The PMOC remains concerned that LIRR Stage 2 work may not be completed on schedule and will continue to accumulate along with leftover Stage 1 and future Stage 3 work if the LIRR does not pursue its portion of the ESA construction more aggressively. The PMOC recommends that LIRR develop more aggressive Track and Electric Traction programs in future years and that it develop a master list of incomplete or unstarted tasks to ensure that all critical items needed for RSD are properly addressed.

2.4 Operational Readiness

The last Quarterly Operational Readiness (OR) meeting was held on December 17, 2015. The 1Q2016 Quarterly briefing was originally scheduled for March 2016; but, due to scheduling conflicts, was postponed and will now occur in April 2016. The MTACC indicates in its February 2016 Monthly Report that the various OR Task Working Groups (TWGs) continue to meet to develop documentation and plans to operate ESA when it is ready for revenue service. Information in the report also notes that interim maintenance on assets provided in the CQ031 and CM004 contracts, using the new Asset Management Database, is complete. Other updates related to Operation Readinees will be presented in the April 2016 briefing.

Observation: The PMOC noted that definitive dates for the completion of safety certifications need to be identified.

Concerns and Recommendations: As noted in its December 2015 report, the PMOC remains concerned about the lack of the availability of completion dates for the safety certification processes for the various design and construction contracts. The PMOC will continue to follow up on this concern once ESA provides the certification process scheduling documentation.

2.5 Vehicles

Status:

As of March 31, 2016, no updated status of MTA's vehicle procurement efforts was provided.

Observations and Analysis:

Based on earlier updates, the ESA PMT and the railroads continue to progress the procurement of the M-9/M-9a vehicles, although slightly behind schedule.

Concerns and Recommendations:

Although procurement of the vehicles is slightly behind schedule, the PMOC has no significant concerns about or recommendations for the ESA vehicle procurement at this time.

2.6 Property Acquisition and Real Estate

Status/Observations:

During February 2016, MTA Real Estate continued to negotiate agreements with the owners of 335 Madison Avenue, 415 Madison Avenue, and 280 Park Avenue to progress ESA construction at those locations. Additionally, MTA Real Estate drafted a Memorandum of Understanding that would facilitate various MTA agencies to work together to construct the ESA access to the Biltmore Room in existing Grand Central Terminal.

Observations and Analysis: MTA Real Estate continues to perform its real estate responsibilities in an entirely effective manner.

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

2.7 Community Relations

Status:

During February 2016, MTA Community Relations continued its community outreach program in Manhattan, Queens, and Sunnyside to notify residents and businesses of upcoming ESA construction activities, especially nighttime construction in Sunnyside.

Observations and Analysis: The MTACC Community Relations Staff continues to perform its outreach campaign in an entirely effective manner.

Concerns and Recommendations:

The PMOC has no concerns about ESA community relations at this time and recommends that the ESA Community Relations staff continue to perform its duties in the same manner as it has in the past.

3.0 PROJECT MANAGEMENT PLAN AND SUB PLANS

Status:

MTACC submitted PMP Rev. 10 to the FTA and PMOC on July 18, 2014. This revision incorporates changes stemming from FTA/PMOC comments on PMP Rev. 9.0 provided in December 2013, as well as changes that resulted from the MTACC's Candidate Revision process. Based on working meetings, dialogue, and additional clarifying review comments from the PMOC, MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The PMOC completed its review and evaluation of MTACC's revisions and responses and submitted its findings to FTA-RII in 4Q2014. MTACC subsequently submitted a revised Rev. 10 on March 13, 2015, that included updated information on the Change Control Committee. The PMOC coordinated with 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. Several working meetings have been completed starting from May 2015 through December 2015.

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

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

3.1 PMP Sub-Plans

Status:

The status of the key PMP sub-plans is discussed in the ELPEP Compliance Section of this report. MTACC issued updates to its TCC and Cost Management Plans in June 2015. The PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments on both the TCC and the CMP and recommended meeting with MTACC to resolve remaining issues. The FTA subsequently provided MTACC with the TCC and CMP evaluations for their review and action. MTACC responded with a reply for the TCC on September 24, 2015.

MTACC submitted its revised Cost Management Plan (ESA and SAS) on April 13, 2015. The PMOC returned comments to the FTA on May 8, 2015. The MTACC submitted a revised CMP in response to FTA/PMOC comments on June 30, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and met with MTACC on November 16, 2015. MTACC is working on additional agreed revisions and is evaluating the PMOC's recommendations in six areas. MTACC issued an interim revision update in December 2015. The PMOC is working with MTACC to resolve all remaining comments.

MTACC issued its revised Schedule Management Plan (SMP), which now includes both the ESA and SAS projects, on October 26, 2015. The PMOC is working to complete its review comments.

Observations:

MTACC has revised its TCC Plan, Cost Management Plan, and its Schedule Management Plan. The PMOC anticipates updates to the Risk Management Plan.

Concerns and Recommendations:

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

3.2 Project Procedures

Status: Revisions to the CMP and SMP may require updates to the referenced Project Procedures. The PMOC will evaluate the need for any required updates to the Project Procedures in conjunction with the effort to close out all remaining comments on the CMP and SMP.

Observations: None

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

4.0 PROJECT SCHEDULE

4.1 Integrated Project Schedule

Status: This report is based on the submitted ESA IPS #78, data date February 1, 2016, and its variance report. The IPS reflects a change from an early Revenue Service Date (RSD) of March 25, 2020 to August 19, 2020 (a variance loss of 147 Calendar Days of IST Contingency), a target RSD of February 12, 2021, inclusive of 177 (reduced from previous 324 calendar days reported for IPS #76) calendar days of IST contingency, and a late RSD of December 13, 2022, inclusive of 177 days of IST contingency plus 669 days of program-level contingency. Overall, the IPS now has 846 calendar days, a reduction of 147 calendar days, from 993 calendar days of contingency since the July 1, 2014, baseline. This amount of contingency is equivalent to 34% of the remaining 2,507 IPS duration. See variance table below for additional information:

ESA IPS #76		Cal. Days	Check Calc. End Date
Data Date:	12/1/2015	1576	3/25/2020
Early RSD	3/25/2020	1576	
(Check Cal. End Date) - (Early RSD Date)=		0	Variance
IST Contingency		Cal. Days	Calc. End Date
Early RSD	3/25/2020	324	2/12/2021
Target RSD	2/12/2021	324	
Remaining IPS Cal. Days (Early RSD+Target RSD)		1900	
Remaining IPS Contingency %		17.05%	
Program-Level Contingency		Cal. Days	Calc. End Date
Target RSD	2/12/2021	669	12/13/2022
Late RSD	12/13/2022	669	
Total Contingency Cal. Days (Target + Late RSD)=		993	
Total IPS Duration in Cal. Days (Early RSD + TC)		2569	
Contingency % of IPS Duration		38.65%	

ESA IPS #78		Cal. Days	Check Calc. End Date
Data Date:	2/1/2016	1514	3/25/2020
Early RSD	8/19/2020	1661	
[redacted]			Variance
IST Contingency		Cal. Days	Calc. End Date
Early RSD	8/19/2020	177	2/12/2021
Target RSD	2/12/2021	177	
Remaining IPS Cal. Days (Early RSD+Target RSD)		1838	
Remaining IPS Contingency %		9.63%	
Program-Level Contingency			Calc. End Date
Target RSD	2/12/2021	669	12/13/2022
Late RSD	12/13/2022	669	
Total Contingency Cal. Days (Target + Late RSD)=		846	
Total IPS Duration in Cal. Days (Early RSD + TC)		2507	
Contingency % of IPS Duration		33.75%	

[redacted]

ESA's critical path goes through the following contracts and tasks, and it is slightly different from the baseline IPS of July 2014 (see discussion under Section 4.2):

- Procurement of CM007;
- Design/fabrication/delivery of the first CM007 precast elements;
- CM007 structural element construction at the Mezzanine level in the Cavern GCT;
- CM007 overhead smoke plenum construction in the Cavern GCT;
- CM007 platform element construction at the Lower Level Cavern GCT;
- CM007 electrical in the Upper Level in the GCT Cavern;
- CM007 ready for Substantial Completion, punchlist work and demobilization;
- CM007 MS#7 Integrated System Testing Complete (pushed out by CM007 Addendum #30);
- Various ESA/LIRR turnover and contingency activities; and,
- LIRR Revenue Service Date (RSD).

The PMT has indicated that, because Addendum #30 for the CM007 Caverns Fit-Out contract procurement was issued. Milestone #7 for the completion of Integrated System Testing has been

extended by approximately four (4) months. The PMOC has calculated that to be an approximate 5 month extension. The PMT is stating that the Early Revenue Service milestone date has been pushed from an RSD of March 2020 to August 2020. The PMT stated that Contingency is being reduced to offset the new Early RSD in order to eliminate the impact to the Target Revenue Service Date (February 21, 2021) or the Late Revenue Service Date (December 13, 2022). The PMOC has prepared the above table that shows a reduction of approximately five (5) months of IST Contingency duration drawdown for changes to the Early RSD.

Observations and Analysis:

It is noted that the ESA 2012 Schedule Re-Baseline was in place for only two years before the next re-baseline was established in 2014. This is indicative of the need for an updated Basis of Schedule that would address the issues that caused the failure of the 2012 baseline.

The PMOC is concerned about the basis of ESA's schedule and the fact that the IPS baseline has not been preserved since July 2014:

1. ESA has reported that Early Revenue Service Date of March 25, 2020, has been pushed to August 19, 2020, as a result of the introduction of CM007 Addendum #30. The current IPS #78 covering to the end of January 2016 shows this change for the Early RSD. The PMT reported contracts under Tudor Perini (CM006, CQ032, and CS179) were also impacted by the Addendum #30. The PMT is stating in the IPS report that CS179 contract changes are still on-going and are forecasted to be complete by the next update.

2. The PMT has stated in IPS #78 that contingency is being used to eliminate the impact to the Target Revenue Service Date (February 21, 2021) or the Late Revenue Service Date (December 13, 2022). However, the ESA January 2016 Monthly Progress Report Executive Summary of Schedule does not appear to incorporate all contingency drawdowns for IPS #78 by approximate 860 (calculated by PMT) – 846 (calculated by PMOC) = 14 Calendar Days. It appears that the difference is due to the change in the Early RSD being reported by the PMT as being August 4, 2020, in the January's Progress Report vs. the IPS Report with an Early RSD of August 19, 2020.

3. The ESA IPS does not have a WBS and it is not clear how the PMT traces productivity from the Contract Packaging Plan to Package-Specific Estimates and the IPS. An example of this issue is that the PMT does not have total Work-Hours in its estimate for Contract CM007 (valued at $775 million), nor does it include Work-Hours in its IPS or package-specific schedule. The PMOC's estimate for Contract CM007 Work-Hours is at least 4 million Work-Hours based on the performance of Contracts CM005, CM006, and SAS Contract C-26007 (C4B). The PMOC has estimated a 53 month schedule for Contract CM007 with an additional three months for contingency. The PMT's baseline estimate however, was a 40 month schedule but in this month's variance report, the PMT indicates a 43 month schedule.

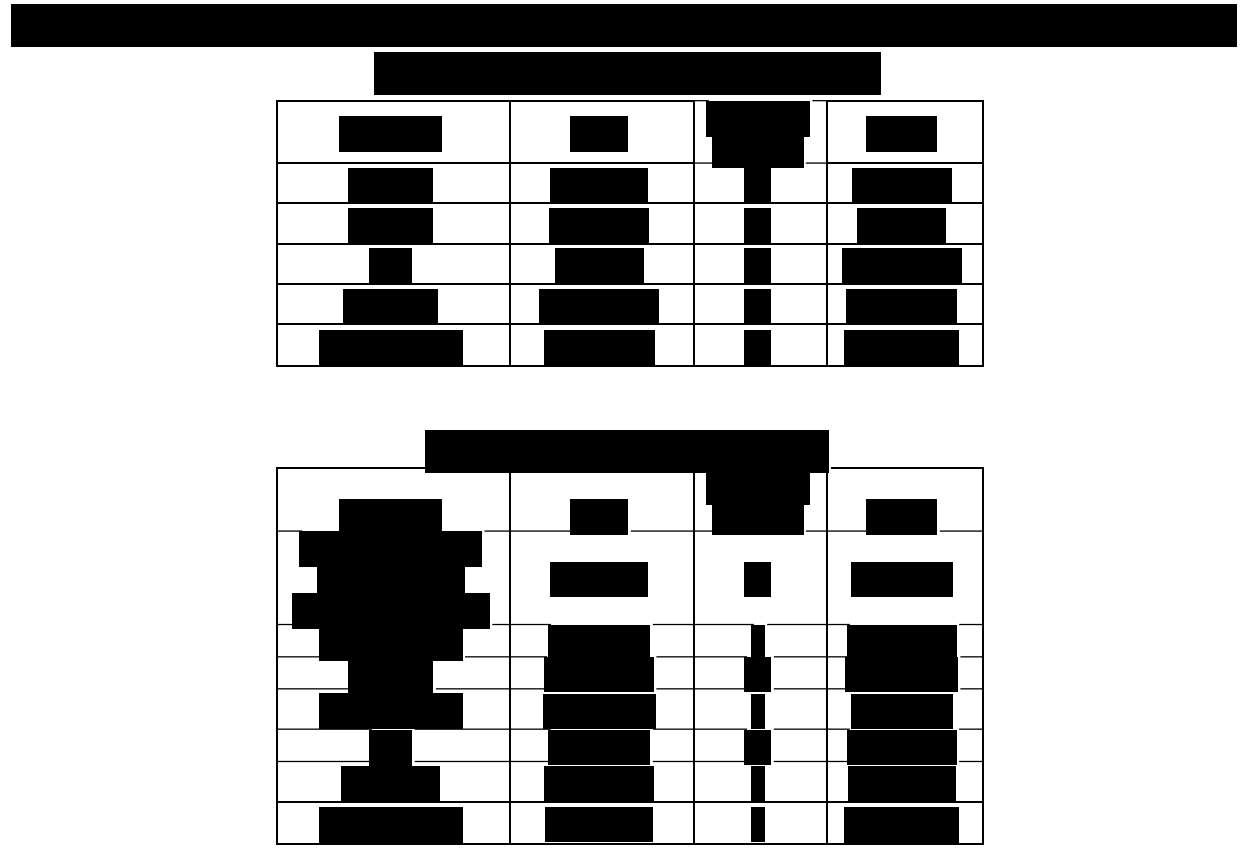
4. The ESA Basis of Schedule stated that the ESA critical path goes through Procurement of CM007 followed by Design/Fabrication/Delivery of the first CM007 precast elements. The critical path then goes through structural element construction at the Mezzanine level in the GCT Cavern, then through overhead smoke plenum construction in the GCT Cavern. Continuing through the critical path is construction of electrical elements in the upper level of the East GCT Cavern to Substantial Completion, punchlist work and demobilization of CM007. Following Demobilization is current completion of Milestone #10 Integrated Systems Testing Completion in the GCT caverns to finish with CS179 System Package 1 – Facilities System Substantial Completion. Currently finishing with Milestone #10 is CS179 Milestone #13 Substantial Completion. The critical path

then ends with Start-Up, Testing, & Commissioning ESA IST Contingencies to LIRR, Stakeholders, and ESA Program Schedule and Stakeholder Program Contingency followed by LIRR Planning and Training to Late Revenue Service Milestone date of December 13, 2022. The PMT reported that negotiated Access Restraints with Tutor Perini releases Contract CM006 Manhattan North Structures out of the Critical Path and aligns it with CM007. The PMOC's schedule had considered that NTP for Contract CM007 depends upon the three conditions shown below. Simply creating a start milestone for the NTP in the IPS does not address the complexities of either access or funding issues.

It should also be noted that the PMOC has assumed three conditions should be satisfied so Contract CM007 can start its work, which could explain the difference between the PMOC and ESA dates for NTP of this package. These three conditions are:

- CM005 finishes on time; the PMT has noted that the remaining work volume and slow productivity has caused the contractual finish date to slip from February 2016 to March 2016;
- CM006 Milestone #2 to be finished before April 2016. The Contractual date of this milestone is February 2016; however, the PMT reported that as part of CM007 negotiations, an agreement has to be made with the contractor to delete Milestones #s 1, 2, 2A, 5, and 6, and extend Milestone #s 3 and 4. This agreement is expected to be completed in March 2016. Current IPS #78 dates being forecasted for Milestone #3, Substantial Completion, is February 28, 2017 and Milestone #4, Final Completion, is May 30, 2017. However, the PMT is reporting in the IPS report that Milestone #3 has a Substantial Completion date of June 1, 2017 and a Final Completion Date of June 1, 2017. The PMT is reporting that an agreement will be formalized and expected to be completed in March 2016; and,
- There won't be a funding constraint for the award of this package.

Currently, conditions above do not appear to be satisfied. Previously the MTA had advised that an interim funding solution would need to be developed that allowed MTA to award the CM007 contract in January 2016. In fact, CM007 has an NTP date of March 1, 2016, a push from January 2016. The NTP has slipped a couple of times and continues to slip. The PMOC expects that the NTP for CM007 may continue to slip as no formal agreement has been finalized.



4.2 180-Day Look-Ahead of Important Activities

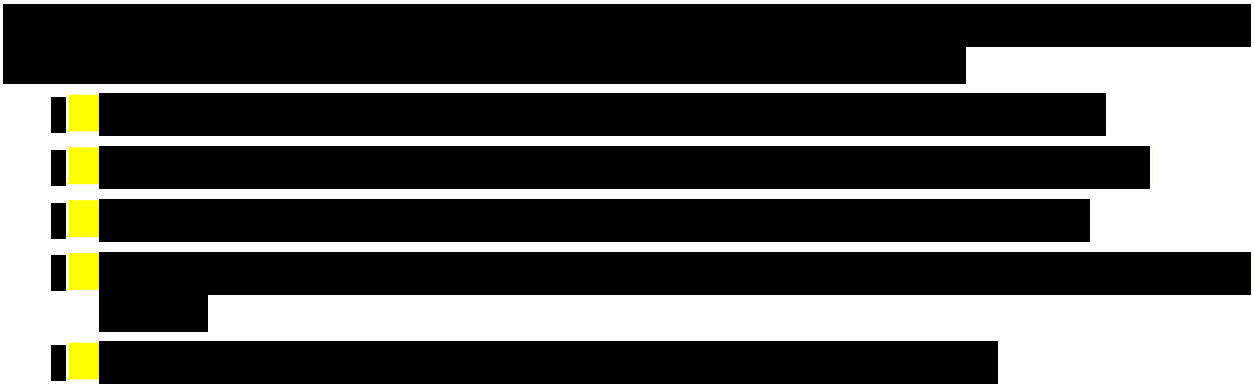
Table F-2 in Appendix F shows package-specific 90-day Look-Ahead (this table reflects milestones and significant activities that could occur in the next 180 days). Table 4.3 below is a list of upcoming contracts in the next two quarters as reported by the PMT. FTA's first hold point, is scheduled to take place in 3Q2016.

TABLE 4.3 – 1Q and 2Q2016 Upcoming Contracts

Contract Description	Advertise Date	Bid Date	NTP	Project Period	Substantial Completion
CM007 GCT Caverns	12/19/2014 (A)	Technical Bid: 9/15/2015 (A)	3/1/2016	46 Months	12/18/2019
		Cost Bid: 10/27/2015 (A)			
CQ033 Mid-Day Storage Yard	5/2/2016	8/5/2016	10/9/2016	40 Months	1/9/2020
CH061A Tunnel A	3/10/2016	4/12/2016	5/31/2016	16 Months	9/29/2017

4.3 Critical Path Activities

The ESA Critical path has changed since its re-baseline of July 2014. The Table 4.4 below shows the changes:



The PMOC is also concerned about the status of CQ033, and strongly believes that Harold has two concurrent critical paths; the above mentioned path and a separate path that goes through CQ033. The PMT had previously stated that "changes/Adjustments to the Harold portion of the IPS during the next few months, major changes/adjustments will be made to the activities in the IPS. These will include many of the High Speed Rail contracts as well as risk mitigation tasks associated with the major risks above. Meetings will be conducted with the LIRR, Ansaldo, and PMT Project Controls regarding activities leading to Central Instrument Location (CIL) cutovers for H5/H6/L30 and H1/H2. Once these activities and corresponding logic are finalized, they will be finalized in the IPS."

Manhattan's key critical contracts and near critical contracts include CM007 – GCT Caverns, and Harold 3rd party and Force Account contracts as well as the CS179 Systems contract.

- CM007 contract was awarded but negotiations are not finalized. ESA is anticipating an NTP sometime in mid-March 2016. The ESA report stated that Addendum #30 and BAFO proposals incorporated changes to the CM007 access restraints and Milestone #7 (completion of IST testing) that affected the Early Revenue Service date in the Integrated Program Schedule. ESA reported the changes impacted Contracts CM006, CQ032, and CS179. The PMT has informed that the CS179 changes are still being negotiated and expected them to be completed by the next update. Part of the negotiations with the contractor as reported by the PMT are Milestone deletions for #1, #2, #2A, #5 and #6 and extended Milestone #3 and #4. The changes are to be formalized in a contractual agreement by March 2016 .
- Contract CS179 is a very complicated contract with 7 options and 63 milestones dates involving interface with 13 ongoing and future MTA ESA contracts. In addition, CS179 is also required to interface with multiple outside agencies and is required to coordinate its work with work installed by LIRR, MNR, NYCT, and Amtrak Force Account personnel.

ESA provided in the IPS several Milestone Date Tables and below is a sample of CS179 Systems Package 1 – Facilities Systems

Table 4.5 below shows the contractor's variance schedule thus far:

TABLE 4.5 - CS179 Contractor Milestone Dates

Milestone	Description	Contract Date	Last Month	Current Month	*Delta (CD)
MS #1	Complete All Work in TPSS C05 at Vernon Blvd Ventilation Facility	8/18/2015	5/4/2016	6/4/2016	-291
MS #2	Complete All Work in Yard Lead Tunnel Sta 1231+00 to West End of Plaza Interlocking	4/19/2016	4/19/2016	4/19/2016	0
MS#3	Complete All Work Plaza Rooms (CIR, Signal Reactor, Interlocking 1D, TPSS C06 & C07)	9/6/2016	9/5/2016	9/5/2016	0
MS #4A	Complete All Work in Traction Power S/S C04 on Level P1 in 2nd Ave. Vent Facility	5/4/2016	3/1/2017	3/28/2017	-328
MS #4B	Complete Relocation of Temporary Power Equipment in 2nd Ave. Ventilation Facility	5/4/2016	3/1/2016	3/1/2016	-261
MS #5	Complete All Work in GCT-6 CIR to Room Ready Condition	8/17/2016	8/16/2016	8/16/2016	-24
MS #6	B10Complete All Work in Bulk Power Substation for Energization of 13.2 kV Cables	12/31/2016	12/31/2016	12/31/2016	0
MS #7	Complete All Work in GCT-5 CIR to Room Ready Condition	12/20/2016	12/20/2016	12/28/2016	0
MS #8	Complete All Work in GCT-4 CIR to Room Ready Condition	3/5/2017	3/4/2017	3/5/2017	0
MS #9	Complete All Work in Traction Power Substations C01 and C02 - Tail Tracks	6/8/2017	6/8/2017	6/8/2017	0
MS #10	Complete All Work in GCT-3 CIR to Room Ready Condition	9/6/2017	9/6/2017	9/6/2017	0
MS #11	Complete All Work in Traction Power Substations C03 at 55th Street Vent Facility	12/25/2017	12/25/2017	12/25/2017	0

MS #12A	Complete All Work in the TMC, TOC, BCS, and FON to Commence IST	9/1/2018	9/1/2018	9/1/2018	0
MS #12B-1	Complete Integrated Testing of all equipment installed under Contract CM007	7/23/2019	7/23/2019	7/23/2019	0
MS #12B-2	Complete Integrated Testing of all equipment installed under Contract CM014A	7/23/2019	7/23/2019	7/23/2019	0
MS #12B-3	Complete Integrated Testing of all equipment installed under Contract CM014B	7/24/2019	7/23/2019	7/23/2019	-1
MS #13	Substantial Completion	11/25/2019	11/25/2019	4/21/2020**	-148

Note: * - Delta is the difference between Contract Date and Current Month.
** - Pushes out to reflect CS179 revised substantial completion date resulting from CM007 Addendum 30 negotiations.

5.0 PROJECT COST

Note: All references to expenditures in this report are with respect to the current cost baseline that was agreed upon at the MTA CPOC meeting in June 2014.

5.1 Budget/Cost

On June 23, 2014, MTACC presented a budget for the ESA project of $10,178M (excluding the $463M Rolling Stock Reserve and financing cost) to the MTA CPOC. Table 5.1 below shows the changes in the SCC budget breakdown between the FFGA Baseline budget and the 2014 re-planned budget.

Observations: It is expected that the results of the ongoing Harold Schedule Status update and the ongoing Force Account Forecast Update will reveal further schedule issues and resultant cost impacts. The costs related to the ongoing CM007 negotiations, as well as potential funding delay impacts are also not reflected in the budget forecast. The forecast must therefore be considered as optimistic. In addition, ESA has scheduled an in-depth risk assessment in April for Contract CQ033 whose outcome may affect future forecasts.

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

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

Standard Cost Category (SCC) No.	FFGA SCC baseline (YOE $) M	Jun 2014 Re-Plan (YOE $)	Nov 2015 SSC (YOE $) M	Dec 2015 SSC (YOE $) M	Jan 2016 SSC (YOE $) M	Jan 2016 % of Re-Plan	Nov '15 to Jan '16 Change $M	CBB Variance from FFGA %
10	1,989	3,405	3,422	3,422	3,419	100.41%	-3	71.90%
20	1,169	2,238	2,338	2,338	2,338	104.47%	0	100.0%
30	356	474	474	474	472	99.58%	-2	32.58%
40	205	611	593	593	593	97.05%	0	189.27%
50	619	606	565	566	566	93.40%	1	-8.56%
60	165	220	219	218	217	98.64%	-2	31.52%
70	957	210	210	210	210	100.00%	0	-78.06%
80	1,184	1,975	1,975	1,976	1977	100.10%	2	66.98%
90	169	439	382	385	386	87.93%	4	128.40%
Subtotal	**6,813**	**10,178**	**10,178**	**10,178**	**10.178**	**100.00%**	**0**	**49.39%**
100	1,036	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***	**11,214***	**100.00%**	**0**	**42.87%**

*This total amount does not include Regional Investment amount of $758,260,953.
Note: Sum of rounded values for current month is less than actual summed value.

Reasons for Changes to SCC Codes:

10: $818,195 reduction due to the CQ039 closeout and BMT transfer to CQ032.

60: $1,218,414 reduction due to funding the design of the 48th St. Entrance with Real Estate funds.
80: $1,218,414 increase due to funding the 48th St. Entrance with RE funds.
90: $719,978 increase due to the CQ039 closeout and the BMT transfer to CQ032.
Misc. Changes of $98,217 to SCC codes 30 & 40 due to the CQ039 closeout and BMT transfer

5.2 Project Cost Management and Control

Status:

The PMT has reported that, as of January 31, 2016, the actual total project progress was 60.9% vs. 62.2% planned progress resulting from the June 2014 re-baseline. In addition, since the ESA Cash Flow chart goes one-year farther than ESA's current target schedule, the planned performance is lower than needed to make its target dates. At the September 2015 Cost Review meeting, the ESA Project Controls Manager stated that it is ESA's projection that all of the Contingency will be used, and therefore the Cash Flow chart differs from previous ESA positions that Contingency will not be fully required. Table 5.2 shows the budget status of contracts awarded to date and invoiced amounts to date.

Table 5.2: Project Budget and Invoices As of February 1, 2016

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (Jan 2016)	Actual Awards (Jan 2016)	Paid to Date (Jan 2016)	Actual % Budget Paid
Construction	$7,379,296,706	$7,433,486,349	$5,613,109,653	$4,390,572,647	59.06%
Soft Costs Subtotal	**$2,798,474,304**	**$2,744,284,661**	**$1,697,572,197**	**$1,660,738,071**	**60.52%**
Engineering	$720,615,810	$722,491,293	$671,210,711	$659,244,961	91.25%
OCIP	$282,613,620	$282,613,620	$210,470,653	$210,150,692	74.36%
Proj Mgmt.	$972,168,644	$972,168,644	$699,529,200	$676,725,362	69.61%
Real Estate	$182,076,230	$179,080,316	$116,361,633	$114,617,056	64.00%
Rolling Stock	$202,000,000	$202,000,000	$0	$0	0.00%
Management Reserve	$439,000,000	$385,930,788	$0	$0	0.00%
Project Subtotal w/o Financing & RI	**$10,177,771,010**	**$10,177,771,010**	**$7,310,681,850**	**$6,051,310,718**	**59.46%**

Observations:

The PMT has been providing package estimates for future contract packages but sometimes has not included them in the latest Forecast at Completion amount. This was a significant problem with CM007 Estimates over the last year.

Concerns and Recommendations:

The use of a single integrated cost reporting system would strengthen the capacity for analysis and for a joint review of the cost relationships. The PMOC recommends that ESA continue to work to improve the accuracy and timeliness of its new cost reporting and control system.

5.3 Change Orders

Table 5.3 below shows the executed mods greater than $100,000 during January 2016.

Table 5.3: ESA's Change Order Log in January 2016 (>$100,000)

Contract	Mod #	Description	Executed Date	Amount
Harold Structures Part 1-CH053	149	Interference with Storm Sewer and Water Lines	1/13/16	$124,000
Manhattan Structures South – CM005	22	Additional changes to lower level Cavern walls	1/11/16	$337,917
Manhattan North Structures – CM006	19	Replenishment of Allowance Item No.5	1/15/16	$4,282,776
Plaza Substation & Queens Structures – CQ032	71	Design changes to door hardware and locking system	1/14/16	$165,943
Plaza Substation & Queens Structures – CQ032	72	Removal of BMT Underpinning System	1/27/16	$804,990

Status/Observation:

The information in Table 5.3 above is taken from the ESA Monthly Progress Report of January 2016. The PMOC believes that there are several Mods which were executed in January 2016 with values greater than $100,000 which should also appear in the table:

Mod 147 CH053 $114,000.

Mod 6 CM006 $665,000.

Additional information received by the PMOC for Mods executed in February 2016 (beyond the data date of this report) indicate that the following high value Mods were executed:

Mod 52 CH054A $281,000.

Mod 18 CH057A $291,000.

Mod 20 CM005 $2,525,000.

Mod 3 CS179 $591,000.

Mod 8 CS179 $525,000.

Concerns and Recommendations:

While the cost forecasts prior to the Re-Plan included all the possible costs for MODs, no matter their status, ESA generally excluded some of those costs in its Forecasts. As of last month, ESA is now providing Forecast values for packages which include all stages of MOD development. To improve its project forecasts, the PMOC recommends that ESA directly address the reliability of CM-estimated MODs and the large variances that occur within them.

5.4 Project Funding

a) Federal Funding

As shown in Table 5.2 above, as of January 31, 2016, the PMT has awarded a total of $7.31 billion in contract work. The Federal share of awarded contracts is $2.333 billion. The total Federal funding commitment, as of January 31, 2016, remained at $2.699 billion (See Appendix G.1 for project cash flow, and Table 2 for detailed cost distribution.)

b) Local Funding

The obligated local share was $5,065M. There has been a $617,607,000 incurred finance cost (for local share) to date.

5.5 Cost Variance Analysis

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

[redacted]

Status/Observation:

In its 2014 Re-plan Budget, ESA introduced a new category, "Additional Contingency". In it there is an added column on the Project Working Budget (PWB) report for specific funds for known issues not addressed just by Post-Award Contingency. Whereas, in a few cases it represented additional risk from the assessments, for other contracts, the precise determinations are unclear.

Concerns and Recommendations:

The PMOC is concerned that the issues related to significant changes for Harold and Force Account costs not yet in the Forecast will lead to even higher costs in that area which will continue to significantly diminish the Allocated Pre-Bid and Unallocated Contingencies to below ESA's budgeted levels.

The rate at which Contingency has been used by ESA has increased to a rate of approximately $15.8 million per month during the last quarter of 2015 to $31.4 million in the month of January 2016. Their Forecast Reserve of $276 million will be inadequate to cover this depletion trend. The PMOC believes this is not sustainable within the ESA Re-Plan Budget and it should also be clear to ESA that they will exceed their Budget.

6.0 RISK MANAGEMENT

The PMOC had previously reported that it was concerned about inadequate support of the program level risk management process due to the lack of continuity of supervision created by turnovers and vacancy of the ESA Risk Manager position in 2015. This concern has now been resolved based on the PMOC's observation that the new ESA Risk Manager, who started on the project in January 2016, has demonstrated his ability to accomplish the restoration of the risk management process. The PMOC notes also that the program level risk meetings with the PMOC have resumed with the March 14, 2016, meeting, the first since January 2015.

The PMOC has continuing concerns regarding the impact to the ESA Harold work due to the Amtrak program to harden ERT Lines 3 and 4 in preparation for extended outages for ERT Lines 1 and 2 to complete Hurricane Sandy damage related reconstruction work, earlier scheduled to commence in 2018, but now planned for 2019. Amtrak has not provided any specific details about the ERT Lines 3 and 4 hardening work, but there is concern that significant Amtrak Force Account resources will be needed to support the hardening work, which could further reduce the Amtrak resources available to support the ESA Harold Re-Sequencing Plan. There is also concern that track outages required for the hardening work may conflict with ESA needs to support the planned Harold work. Delays in completing the Harold Re-Sequencing Plan may result in essential ESA work being pushed back into the timeframe for Amtrak's extended outages for ERT Lines 1 and 2. The PMOC notes, however, that in early November 2015, ESA advised that Amtrak is leaning toward closing ERT Line 2 first in 2019. Although this represents a delay from the earlier 2018 forecast time frame, the selection of Line 2 to close first does support the current ESA Harold schedule. No further updated information on this issue have been provided by Amtrak.

With regard to the implementation of the "ESA First" Harold Re-sequencing of late 2014, the PMOC notes that Amtrak has not been able to provide even the reduced level of force account resources that has been planned in support of the schedule. Additionally, the projected force account costs are trending noticeably higher than planned and the force account contingency budget line item is nearly depleted. ESA is currently engaged in a comprehensive study to identify and evaluate the reasons for inadequate level of force account resources required to support the Harold schedule and to make recommendations to revise the schedule and to plan for the increasing force account costs. The study had been expected to be completed in January 2016, but is now expected in April 2016.

6.1 Risk Process

Status/Observations:

The PMOC observes that the new ESA Risk Manager has been actively working to re-establish the ESA risk management process as a key element for the PMT's decision making process. He has resumed the program risk meetings with the PMOC, is preparing for the upcoming CQ033 (Mid-Day Storage Yard) risk review and is revamping the program level risk register.

Concerns and Recommendations:

In the PMOC's opinion, funding availability continues to be a significant risk on the ESA project. Funding uncertainty has resulted in the PMT's delay of the CM007 contract award until early 2016 due to budget constraints and the restructuring of the CS179 contract by splitting it into a base contract with seven options, based on access restraints imposed by the CM006, CM007, and CM014B packages, which will significantly increase the interface risks. Although MTACC has been working closely with MTA to arrange for adequate funding to meet schedule requirements for award of contracts, this effort relies on arrangements, both internal and external to the ESA project, involving multiple temporary funding shifts and transfers. This approach is not sustainable in the longer timeframe and is subject to change as new and unexpected financial challenges arise.

The PMOC had previously expressed its concern that procurement delays have significantly reduced the time for negotiations on the CM007 contract that is currently on the program schedule critical path. MTACC was not able to award this contract as planned before December 31, 2015, and the program critical path has now been delayed 3 months.

The segmentation of construction packages has resulted in multiple inter-contract interfaces and milestones. The probability of successfully achieving all of them is low, in the PMOC's opinion, and leads to the possibility of a ripple effect of delays and coordination difficulties between contracts. There are very limited opportunities for the contractors to make up time lost to interface delays. Managing inter-contract handoffs and interfaces will be challenging. Some schedule and cost risks have been realized because funding was not in place to fully award the three options in the CS179 Contract Package as planned in November 2015 or to fully award the next option scheduled for January 2016. Access Restraints in the CS179 contract are correlated to the options in the Contract and the CS179 contract will also have multiple interfaces with the CM007 contract, which has not yet been awarded. Given that this work is on the project critical path, delays in awarding the options will result in the use of Program schedule contingency.

The PMOC remains concerned about the coordination risk retained by MTACC on the completion of the work in Manhattan, especially with regard to the construction and testing interface management for the systems work. When combined with the extensive scoping re-

configuration changes associated with the Harold Interlocking work, the PMOC believes that this may create significant changes to the overall project risk profile.

6.2 Risk Register

Status/Observation:

Due to the lack of continuity of leadership for the risk management process caused by the resignation of the ESA Risk Manager in October 2015, the PMT had not been able to update the risk register on a regular basis. This situation is being resolved by the new ESA Risk Manager who started work on the ESA project in January 2016.

Concerns and Recommendations:

ESA needs to resume submission of the Risk Register updates to the FTA and PMOC on a regular basis as called for in the RMP. The ESA Risk Manager is actively working to resume this process.

The PMOC considers the major risks for the East Side 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 for both construction and third-party contractor support in Harold Interlocking [increasing risk trend noted in 4Q2015 and 1Q2016]; and
- Continued availability of required track outages in the Harold Interlocking.

6.3 Risk Mitigations

Current Risk Mitigation Efforts:

The PMOC notes that the PMT is implementing mitigation strategies for a number of identified risks. Examples include advancing procurement of the eight CILs for the Mid-Day Storage Yard and actively engaging Amtrak to develop some specific strategies to mitigate many of the identified risks, to pursue labor agreements that will provide flexibility and additional resources to allow more third-party work in Harold Interlocking. Implementation of the Harold schedule re-sequencing to support the "ESA First" approach of advancing work elements required to provide LIRR service into GCT will help mitigate some of the schedule delay risks. However, implementation of the Harold re-sequenced schedule, has not met the estabilished goals because Amtrak has not been able to provide the necessary force account support to the third-party contractors and complete their own force account construction work elements on schedule. As a result, MTACC is reviewing the 2015 Harold schedule re-sequencing plan to determine the detailed causes of the schedule slippage and to re-evaluate the cost of force account support going forward. The results of MTACC's study are now expected to be available in April 2016.

In the area of funding, MTACC has experienced schedule slippage such as the delay to award of the CM007 contract and exercising only some of the CS179 scheduled options to date. The PMOC notes that MTACC has, in reponse to this funding constraint, been able to work with

MTA to arrange for adequate funding to meet schedule requirements for award of contracts based on arrangements, both internal and external to the ESA project, involving multiple, temporary funding shifts and transfers. While this approach resolves the short-term problem, it cannot be used indefinitely.

Concerns and Recommendations:

MTACC has completed several programmatic risk assessments and multiple package level risk reviews. The PMOC believes that MTACC is capable of developing effective mitigation strategies for the risks identified, tracking and reporting on them on a regular basis as required by the RMP. MTACC needs to continue to focus on developing, updating, and implementing effective mitigation plans for both the currently identified major risks and for future potential risks.

The many external stakeholder issues with Amtrak and LIRR, however, will remain beyond MTACC's direct control and this is likely to complicate problem resolution essential to completion of the project, especially those portions related to Harold Interlocking. This concern continues to manifect itself in the new challenges to advancing construction work in the Harold Interlocking.

7.0 [redacted]

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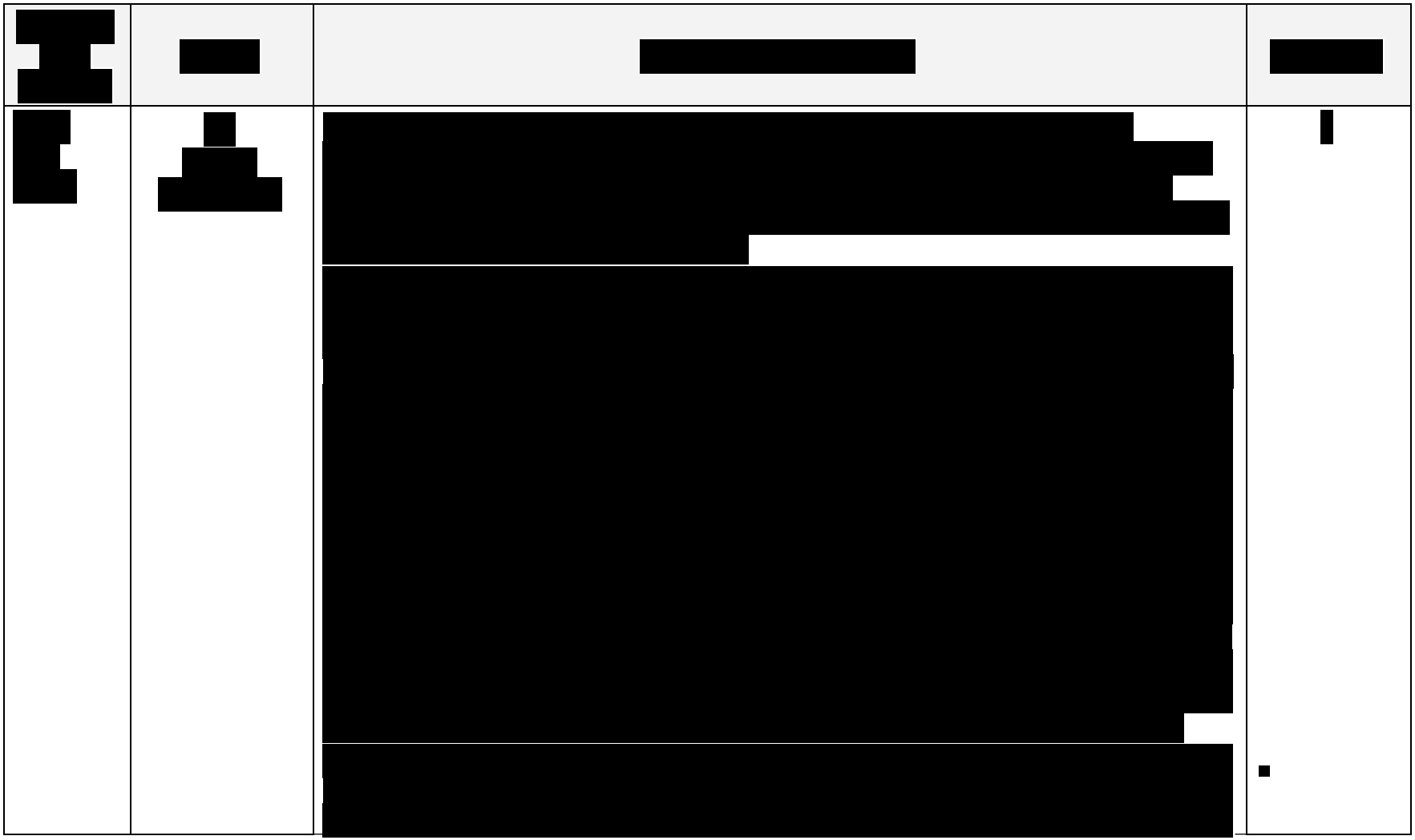

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APPENDIX A - LIST OF ACRONYMS

ARRA	American Recovery and Reinvestment Act
CBB	Current Baseline Budget
C&S	Communication and Signals
CCC	Change Control Committee
CCM	Consultant Construction Manager
CM	ESA Construction Manager assigned to each contract
CMP	Cost Management Plan
CPOC	Capital Program Oversight Committee
CR	Candidate Revision
CIL	Central Instrument Location
CPRB	Capital Program Review Board
CPP	Contract Packaging Plan
DCB	Detailed Cost Breakdown
ELPEP	Enterprise Level Project Execution Plan
ERT	East River Tunnel
ESA	East Side Access
ET	Electric Traction
FA	Force Account
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
GCT	Grand Central Terminal
GEC	General Engineering Consultant
HTSCS	Harold Tower Supervisory Control System
IEC	Independent Engineering Consultant (to MTA)
IFB	Invitation for Bid
IPS	Integrated Project Schedule
IST	Integrated System Testing
LIRR	Long Island Rail Road
LTA	Lost Time Accidents
MEP	Mechanical/Electrical/Plumbing
MNR	Metro-North Railroad
MTA	Metropolitan Transportation Authority
MTACC	Metropolitan Transportation Authority Capital Construction
N/A	Not Applicable

NTP	Notice to Proceed
NYCT	New York City Transit
NYSPTSB	New York State Public Transportation Safety Board
OR	Operational Readiness
PE	Preliminary Engineering
PEP	Project Execution Plan
PMOC	Project Management Oversight Contractor (Urban Engineers)
PMP	Project Management Plan
PMT	Project Management Team
PQM	Project Quality Manual
PWE	Project Working Estimate
QA	Quality Assurance
RAMP	Real Estate Acquisition Management Plan
RAP	Rail Activation Plan
RFP	Request for Proposal
RMP	Risk Management Plan
ROD	Revenue Operations Date
ROW	Right of Way
RSD	Revenue Service Date
SC	Substantial Completion
SCC	Standard Cost Category
SMP	Schedule Management Plan
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSPP	System Safety Program Plan
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCC	Technical Capacity and Capability
WBS	Work Breakdown Structure
WBY	Westbound Bypass Tunnel

APPENDIX B - PROJECT OVERVIEW AND MAP

Project Overview and Map – East Side Access

Scope

Description: This project is a new commuter rail extension of the Long Island Rail Road (LIRR) service from Sunnyside, Queens to Grand Central Terminal (GCT), Manhattan, utilizing the existing 63rd Street tunnel under the East River and new tunnels in Manhattan and Sunnyside yard. Ridership forecast is 162,000 daily riders (27,300 new riders).

Guideway: This two-track project is 3.5 route miles long, it is below grade in tunnels and does not include any shared use track. In Harold interlocking, it shares ROW with Amtrak and the freight line.

Stations: This project will add a new 8 track major terminal to be constructed below the existing GCT. The boarding platforms and mezzanines of the new station will be located approximately 90 feet below the existing GCT lower level. A new passenger concourse will be built on the lower level of the terminal.

Support Facilities: New facilities will include: the LIRR lower level at GCT, new passenger entrances to the existing GCT, the East Yard at GCT, the Arch Street Shop and Yard, a daytime storage and running repair/maintenance shop facility in Queens, and ventilation facilities in Manhattan and Queens.

Vehicles: The scope and budget for the ESA project include the procurement of 160 new electric rail cars to support the initial service.

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

Original Schedule

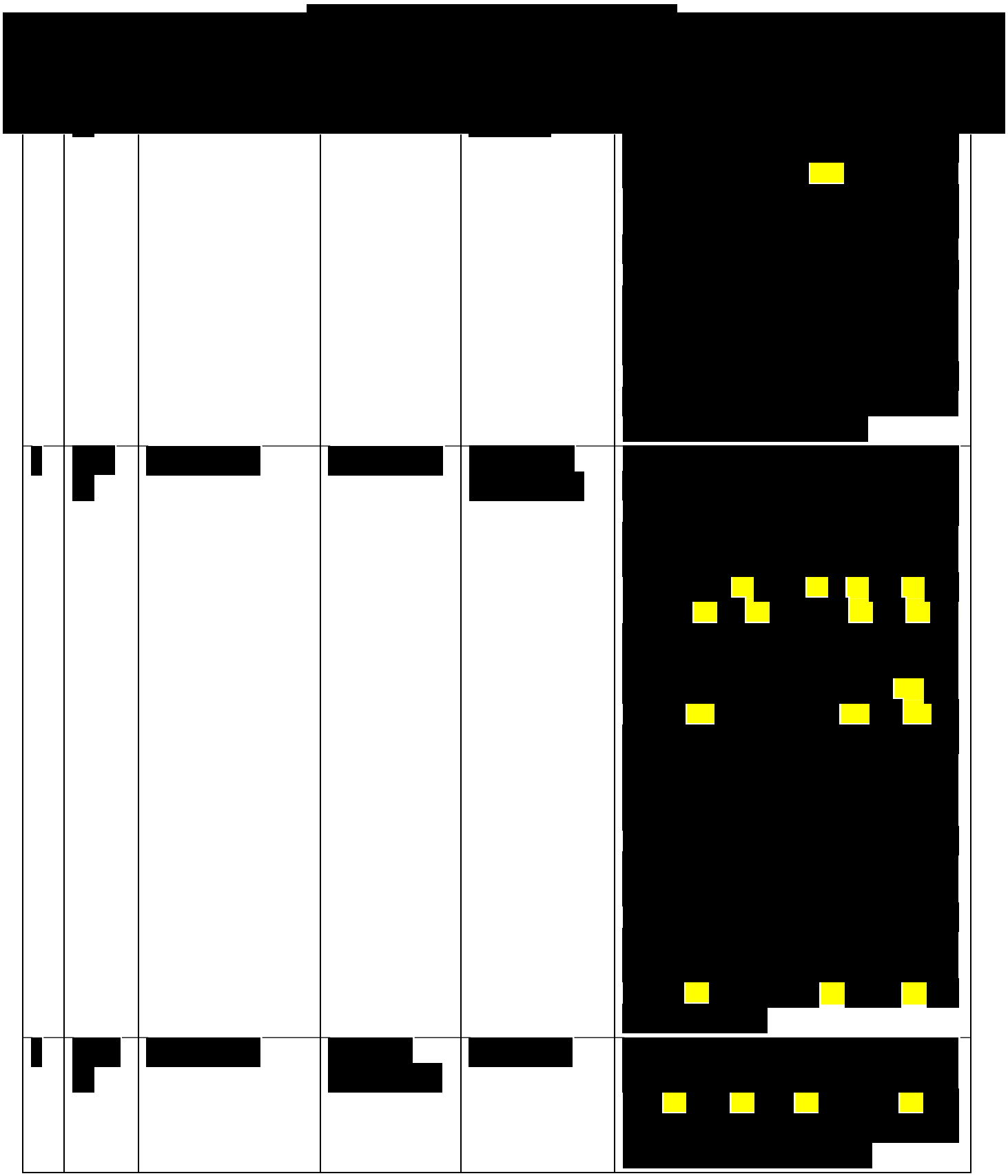
9/98	Approval Entry to PE	12/10	Estimated Rev Ops at Entry to PE
02/02	Approval Entry to FD	06/12	Estimated Rev Ops at Entry to FD
12/06	FFGA Signed	12/13	Estimated Rev Ops at FFGA
08/19	Revenue Service Date at date of this report (MTA schedule)		

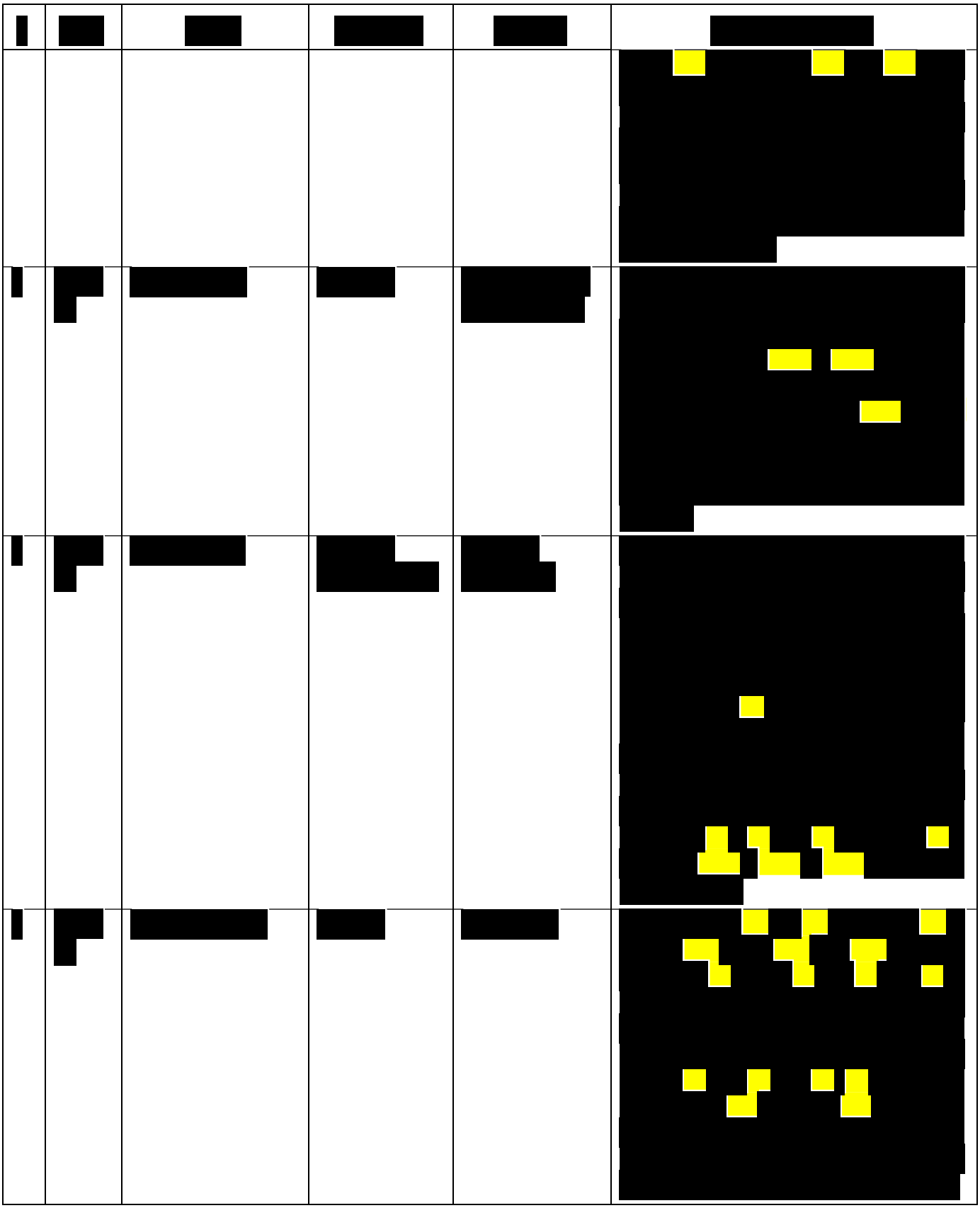
Cost ($)

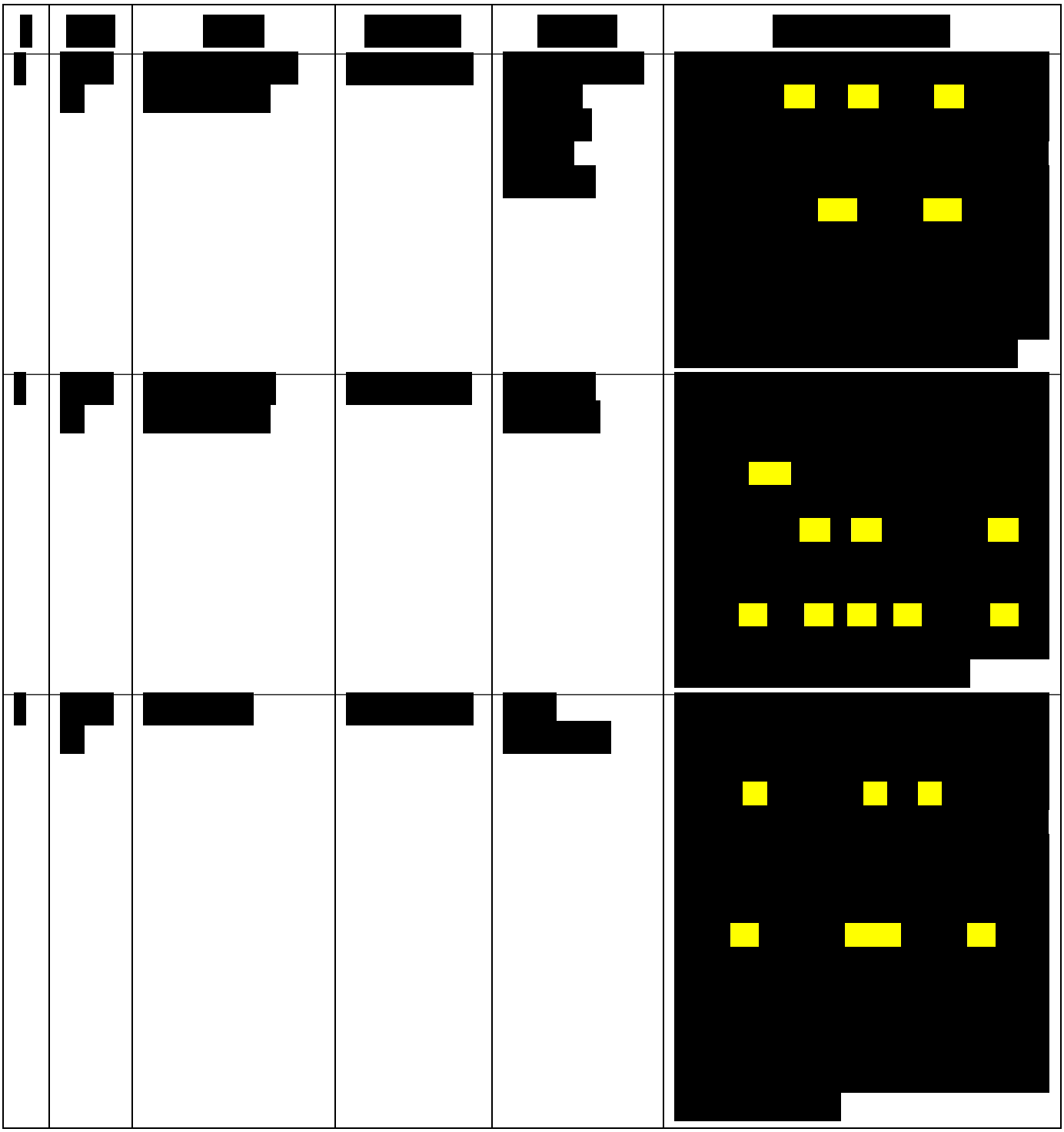
4,300 million	Total Project Cost ($YOE) at Approval Entry to PE
4,350 million	Total Project Cost ($YOE) at Approval Entry to FD
7,386 million	Total Project Cost ($YOE) at FFGA signed
11,936.0 million	Total Project Cost ($YOE) at Revenue Operations
11,972.1 million	Total Project Cost ($YOE) at date of this report including $ 1,036.1 million in Finance Charges
6,051.3 million	Amount of Expenditures as of January 31, 2016, based on the Total Project Budget of $10,177.8 million
60.9	Percent Complete, based on the Re-plan budget of $10,177.8 million and invoices in the January 2016 report
648.0 million**	Total Project Contingency remaining (including $385.9 million identified by ESA as Unallocated Contingency, which includes ESA Management Reserve), as opposed to $439.0 million in June 2014 baseline.
59.9*	Construction Percent Complete
60.0	Overall Project Percent Complete

*****As of November 30, 2015, based on the June 2014 ESA Re-plan Budget and excluding $463 million for Rolling Stock Reserve, as provided by ESA in its December 2015 Report.

** The Contingency is as reported by ESA as of January 31, 2016.







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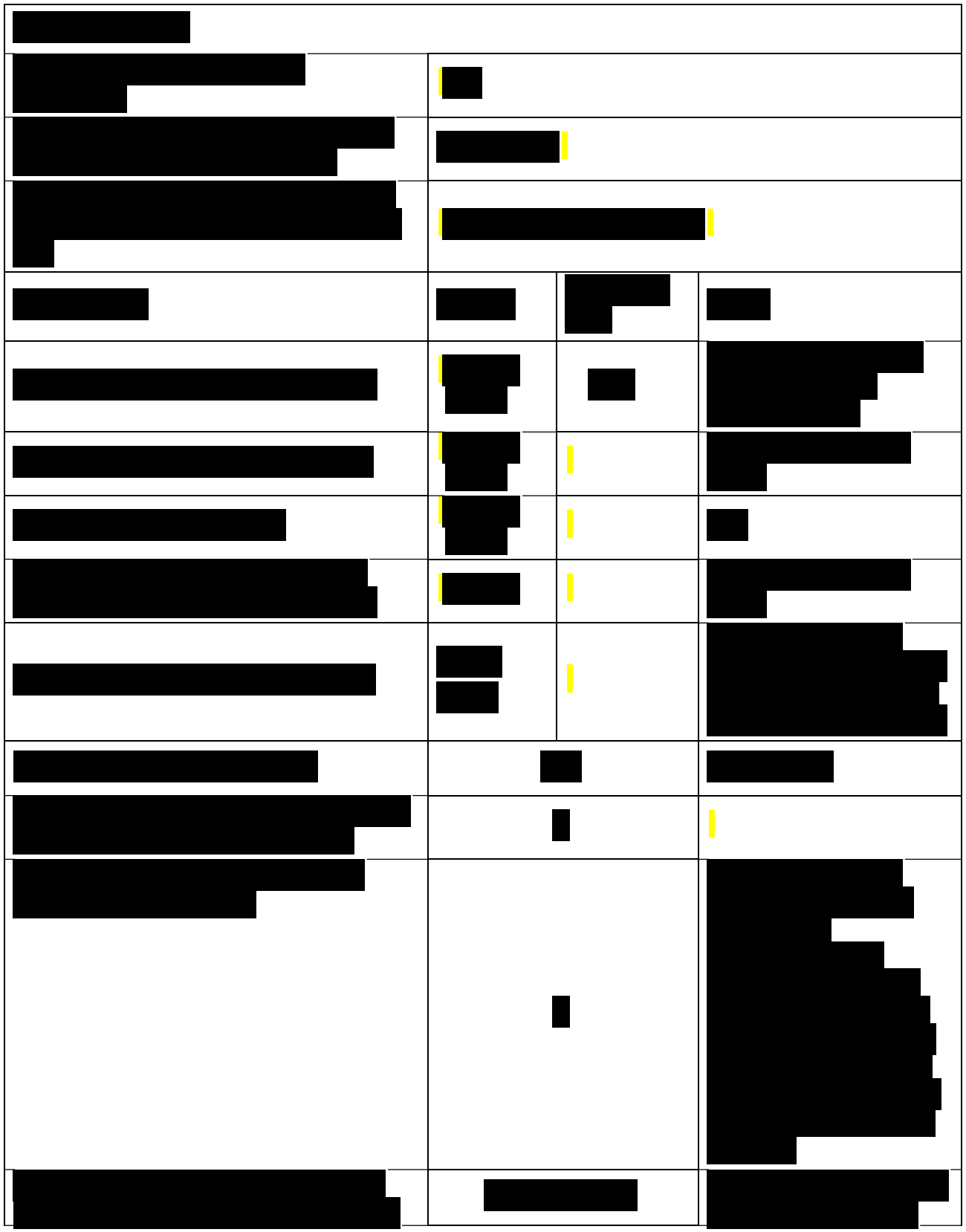

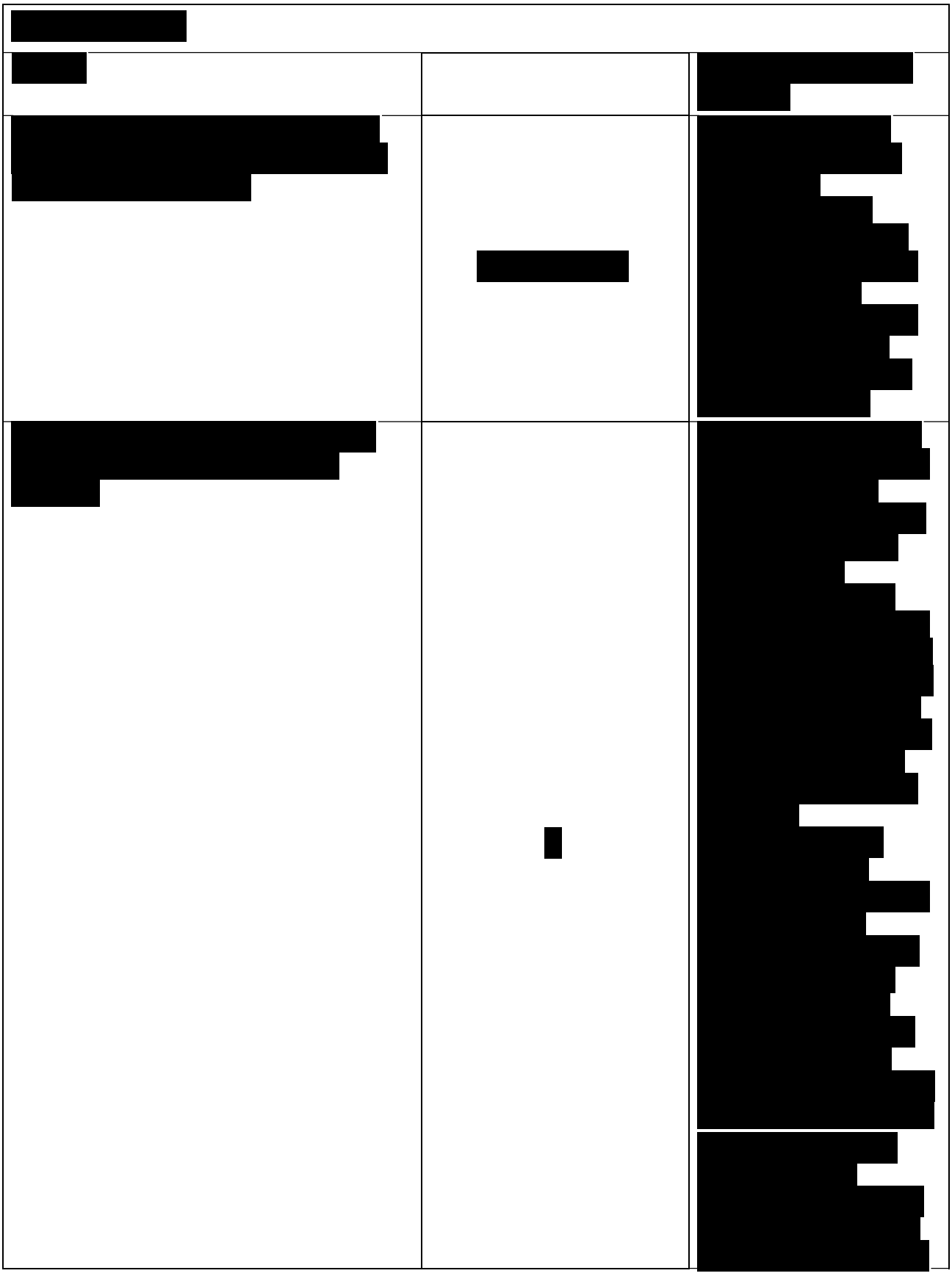

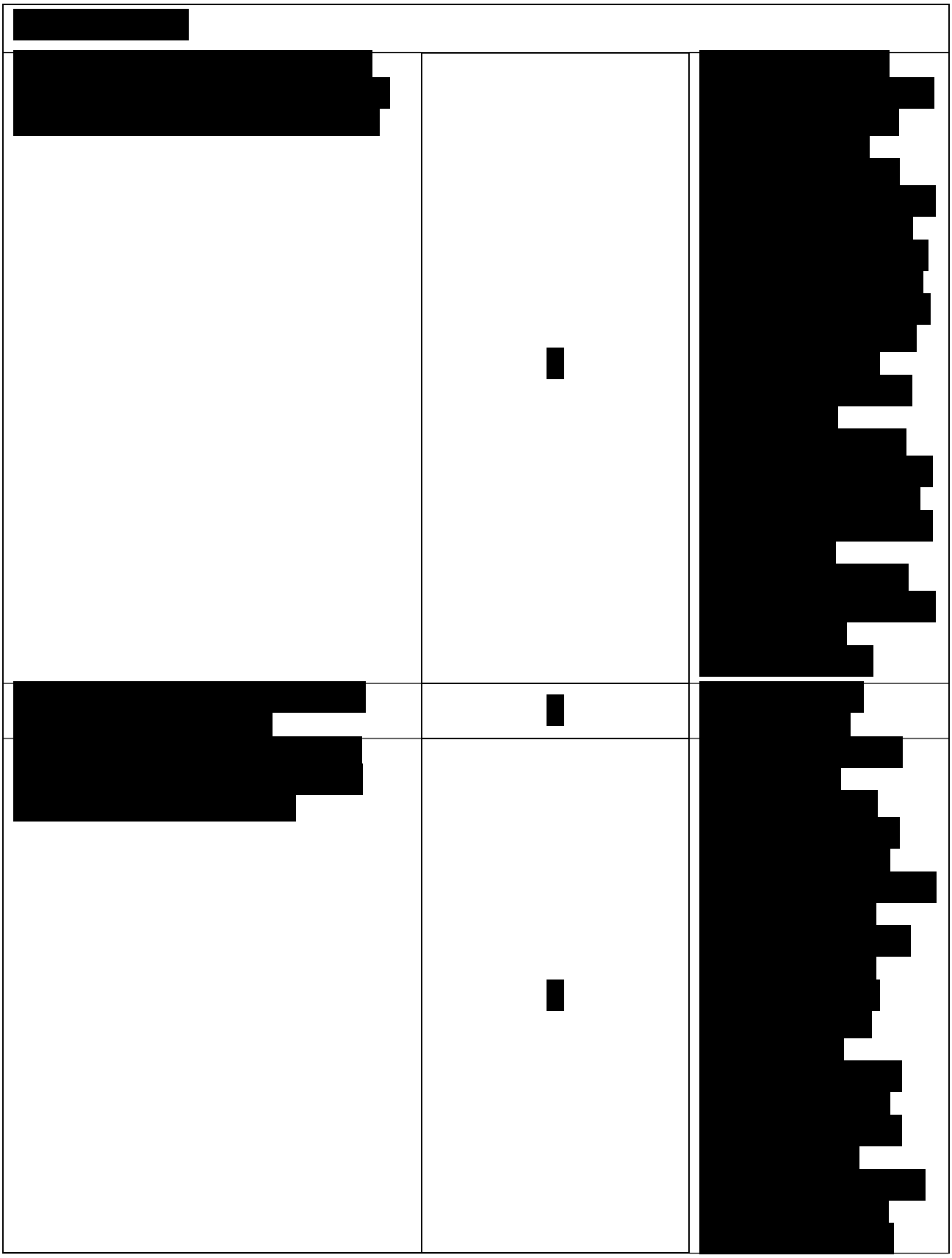

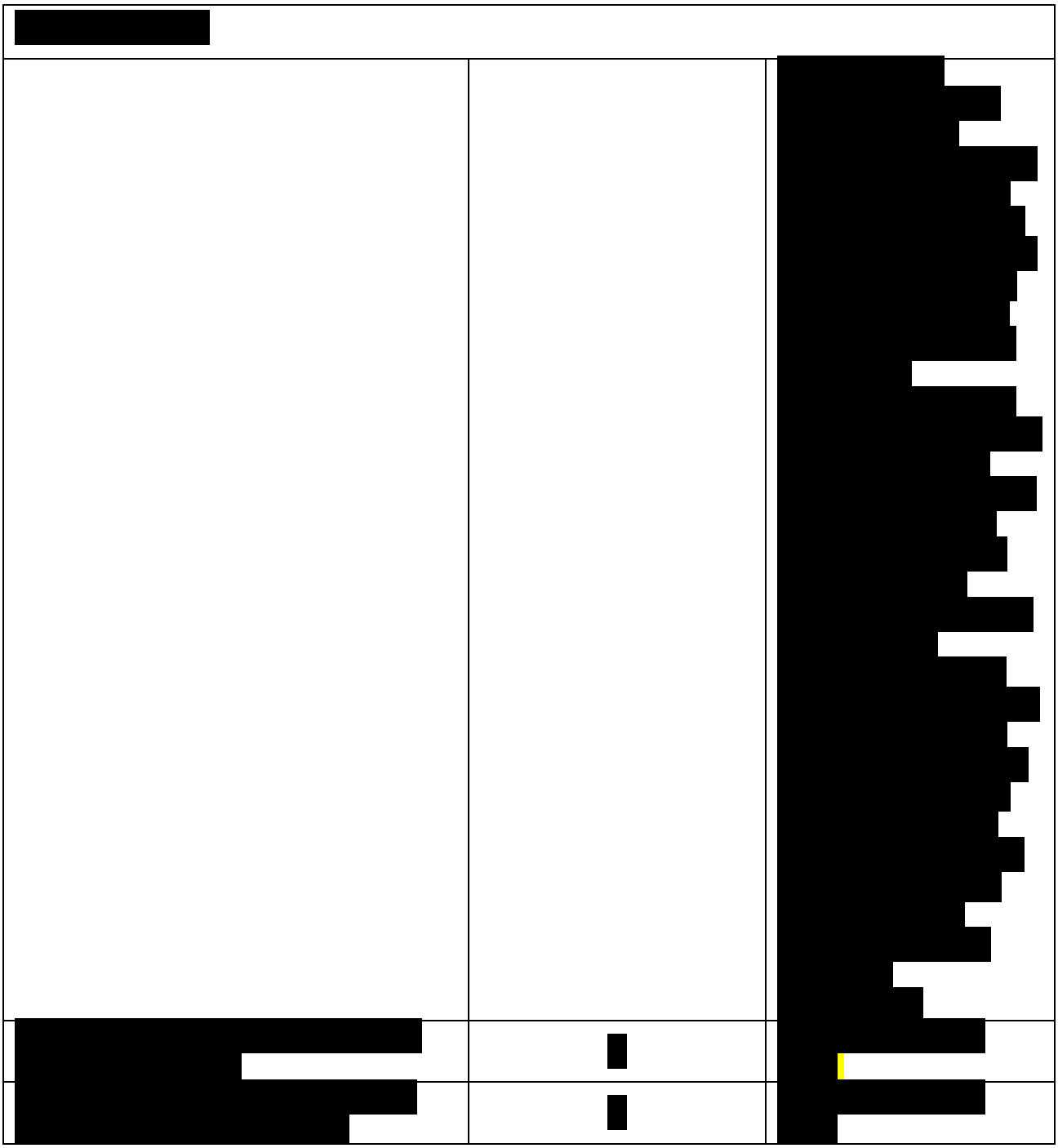

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[redacted]	**3,660,194,771**	**646,377,892**	**155,604,955**	**580,041,291**	**112,634,547**	**0**
Remaining	**3,719,144,273**	**74,237,918**	**127,008,665**	**392,127,353**	**69,441,683**	**202,000,000**
3Q2014	209,340,620	-3,311,163	4,774,951	16,667,454	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
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
Remaining Planned	**2,688,669,072**	**93,895,221**	**98,514,664**	**292,666,133**	**50,885,083**	**202,000,000**
Remaining Actual	**3,042,913,702**	**63,246,332**	**72,462,928**	**295,443,282**	**64,463,260**	**202,000,000**
1Q2016	193,275,933	-3,219,153	4,671,147	16,305,118	4,556,873	0
2Q2016	180,854,738	-3,290,689	4,774,951	16,667,454	4,658,137	8,666,545
3Q2016	181,988,455	-1,983,850	4,774,951	16,652,320	4,658,137	13,070,855
4Q2016	214,173,807	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
1Q2017	210,556,624	6,509,009	4,619,246	15,450,479	4,506,241	12,644,631
2Q2017	199,737,103	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
3Q2017	189,382,506	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
4Q2017	182,084,699	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
1Q2018	174,210,593	6,509,009	4,619,246	15,450,479	4,506,241	12,644,631
2Q2018	170,524,739	6,728,414	4,774,951	15,971,281	4,658,137	13,070,855
3Q2018	168,497,619	6,728,414	4,774,951	15,971,281	4,658,137	14,014,767
4Q2018	155,245,094	6,728,414	4,774,951	15,971,281	50,632	14,014,767
1Q2019	148,441,548	6,509,009	4,619,246	15,450,479	0	13,557,764
2Q2019	110,893,994	6,728,414	4,774,951	15,971,281	0	14,014,767
3Q2019	93,559,944	6,728,414	4,774,951	15,971,281	0	14,014,767
4Q2019	71,649,848	6,728,414	4,774,951	15,971,281	0	14,014,767
1Q2020	20,704,406	6,582,144	4,671,147	15,624,080	0	5,043,553
2Q2020	11,682,057	6,728,414	4,774,951	15,971,281	0	943,912
3Q2020	7,573,078	2,267,183	4,947,825	5,381,627	0	0
4Q2020	2,750,374	0	5,035,679	0	0	0
1Q2021	881,913	0	3,256,771	0	0	0
2Q2021	0	0	0	0	0	0
3Q2021	0	0	0	0	0	0
4Q2021	0	0	0	0	0	0

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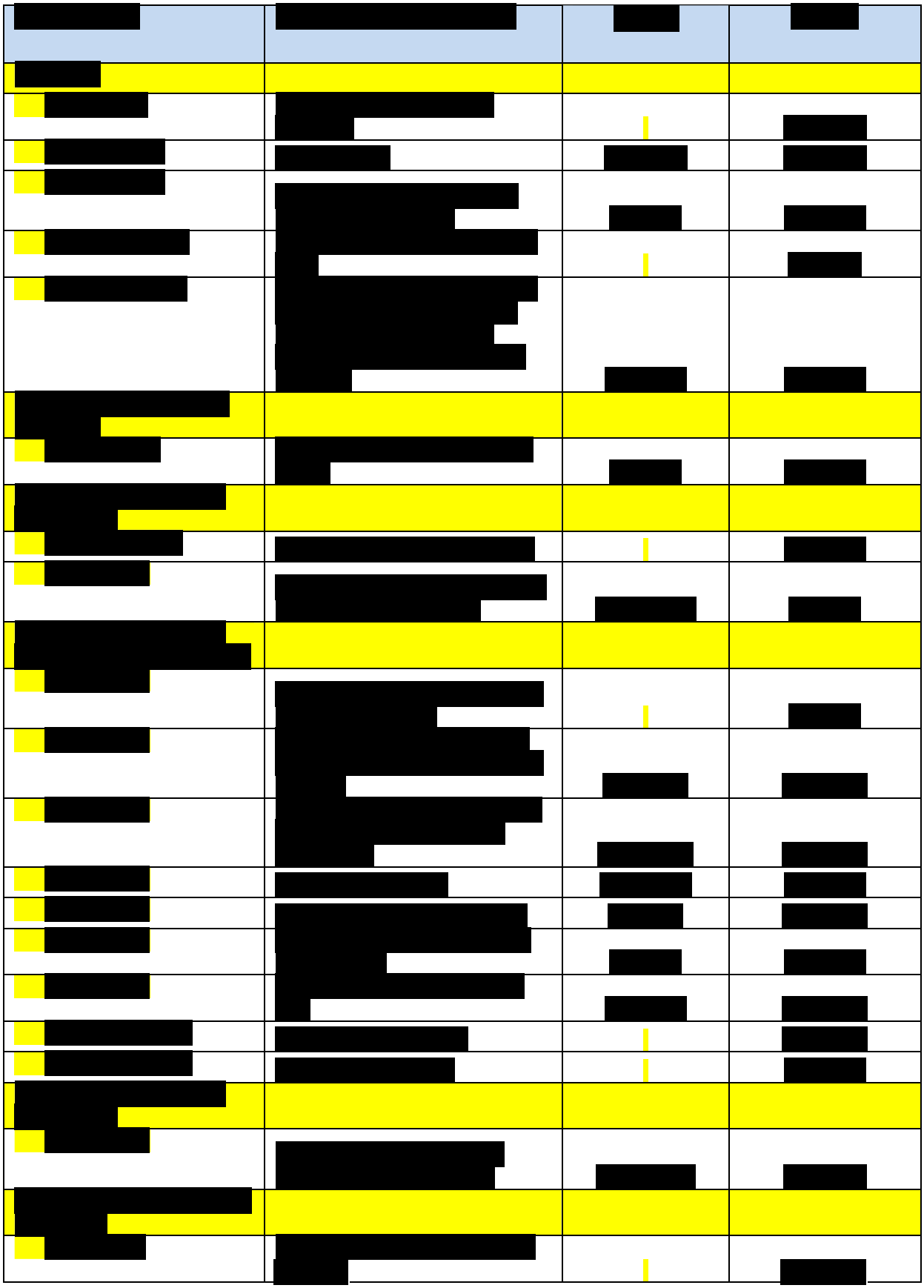

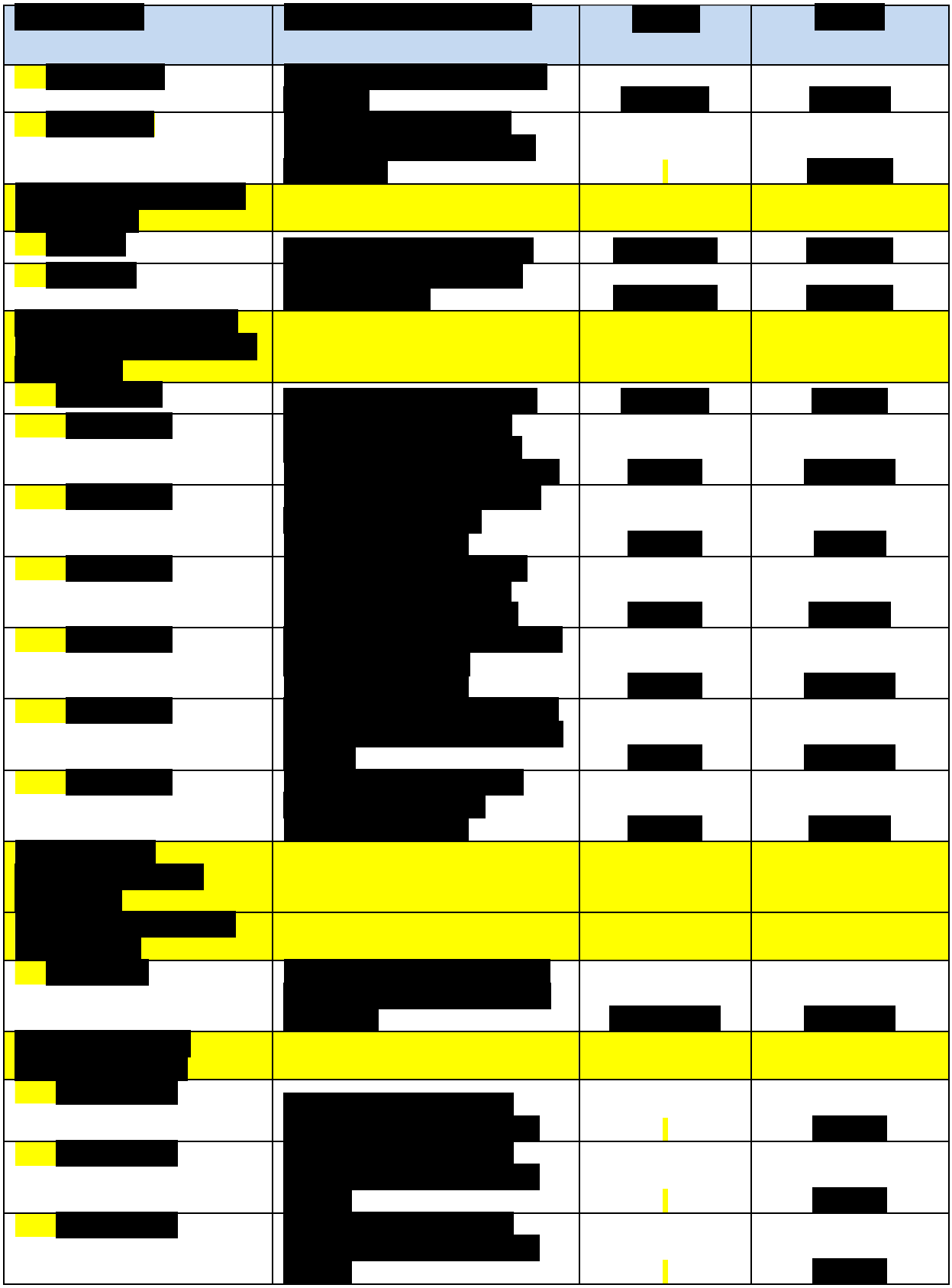

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