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September 2020

East Side Access (MTA C&D-ESA) Project

Metropolitan Transportation Authority
New York, New York

FINAL

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REPORT FORMAT AND FOCUS

This report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract #69319519D000016, Task Order #69319520F300091. Its purpose is to provide information and data to assist the FTA as it continually monitors the management capability and capacity of the Metropolitan Transportation Authority Construction and Development (MTA C&D) (manager for Project Sponsor) to execute the East Side Access (ESA) project efficiently and effectively, and hence, whether the Project Sponsor continues to be ready to receive federal funds for further project development. This report covers the project management activities on the ESA Mega-Project managed by MTA C&D, with MTA as the Project Sponsor, financed by the FTA Full Funding Grant Agreement (FFGA). The cost and schedule information in this report was extracted from MTA C&D's *July 2020 Monthly Progress Report (MPR)*, except where noted. The report has been organized to comply with the requirements of updated Oversight Procedure 25 – Recurring Oversight and Related Reports dated June 2020.

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1. EXECUTIVE SUMMARY

1.1. Project Description

Metropolitan Transportation Authority (MTA) is implementing the East Side Access (ESA) project, which will provide direct Long Island Rail Road (LIRR) service to Midtown Manhattan's East Side at Grand Central Terminal (GCT). The LIRR trains will follow a new route from the LIRR mainline in Sunnyside, Queens through a newly constructed 5,500-foot tunnel that leads to the lower level of an existing tunnel crossing under the East River at 63rd Street. Once in Manhattan, the route then follows 5,000 feet of new tunnels under Park Avenue into a new eight-track, four-platform, two-level LIRR terminal located below the existing lower level of GCT. The project scope includes procurement of 160 commuter rail vehicles and 5 non-revenue locomotives. The project will serve about 162,000 daily riders when complete. The project budget is $12,249.8 million, including finance costs and $11,133.3 million without finance costs. MTA's Construction and Development division (MTA C&D) is managing the project through the completion of construction and system testing.

1.2. Project Status

- Scope: There have been no changes in project scope since the last reporting period.
- Schedule: The forecast revenue service date (RSD) *remains* June 9, 2022, *unchanged from last month*. The Public RSD remained December 13, 2022 b(4) [redacted]. The required RSD in the FFGA is December 31, 2023.
- Cost: The forecast project cost is unchanged at $11.13 billion. Invoiced cost through Augsut 31, 2020 was $9.49 billion. b(4) [redacted]
- Heavy civil construction and systems installation for buildings and other facilities is nearing 90% complete, based on contractor invoices. The traction power system *is nearly 75% complete*, and the rail signaling system is *about 50% complete, also based on contractor invoices*. Local testing is underway for the building and facilities systems but some of the tests that were scheduled to be completed by June 2020 have yet to be completed. Incremental Integrated Systems Testing (IIST) for the fire alarm system, which is on the schedule critical path, is scheduled to begin in December 2020.
- The program critical path involves work for facilities systems in Manhattan. Recent and upcoming critical milestones for Manhattan Facilities Systems include:
    - CM014B: Pull and terminate wire, equipment closeout, rough-in conduit/pull wire to equipment (July 2020). This milestone was missed. *The actual completion date was September 2020.*
    - CM014B: Completion of Field Installation Acceptance/Simulated Integrated System Testing (FIST/SIST), handoff to CS179 for completion of Integrated Systems Testing (IST) (GCT Zones 1 through 4 Mechanical, Electrical, Plumbing

(MEP)) (December 22, 2020). This work started in June 2020, and MTA C&D states that the contractor intends to complete it in December 2020.

1.3. Major Issues and/or Concerns

Issue/Concern	**The Integrated Project Schedule (IPS) does not reflect the impacts of the construction of foundations for the new JP Morgan/Chase (JPMC) building at 270 Park Avenue, which lie within the GCT concourse for ESA. The work by the JPMC contractor is behind schedule. There is a risk that this work will delay completion of the concourse and the RSD.**
Date Identified	6/25/2020
Status	Ongoing.
Project Sponsor Action	MTA C&D plans to include the revised work sequence and schedule for the GCT concourse in the IPS after the associated contract modifications are executed.
PMOC Recommendation	The PMOC recommends that the schedule impacts of the 270 Park work be estimated now to determine if the completion date for the GCT work will be impacted and to identify delay mitigation measures.
Issue/Concern	**The IPS does not reflect the impacts of late integration of Positive Train Control (PTC) into the ESA signal system. There is a risk that this work will delay completion of the signal system and associated local and IST, thereby delaying the RSD. The latest incomplete draft of the *Comprehensive System Test Plan (CSTP) was updated in April 2018* and does not reflect the current approach to PTC integration nor the IIST approach.**
Date Identified	6/25/2020
Status	Ongoing.
Project Sponsor Action	MTA C&D plans to include the revised work sequence and schedule for PTC integration after the associated contract modifications are executed. *This work was not included as planned in the IPS data date 8/1/2020.* The PMOC is following up on MTA C&D's plans for completing the CSTP.
PMOC Recommendation	A complete CSTP should be prepared to include the IIST approach and the integration of PTC after completion of the base signal system. PTC test plans and test procedures are needed to complete contract modifications for the PTC integration and to develop a realistic forecast of the time and resources required to complete system testing.
Issue/Concern	**Several risks may impact the schedule for completion of IIST for the facility systems portions of the project. Milestones for completion of local testing for CS179 are being missed, delaying the start of IIST. The schedule for testing does not appear to allow time to address failed tests. Disagreements between LIRR and the contractor have arisen regarding the scope of required testing, and, in the opinion of the PMOC, there is a risk that LIRR may disagree with the criteria for successful completion of tests.**
Date Identified	Current.
Status	Ongoing.
Project Sponsor Action	MTA C&D is attempting to adjust the work schedule to avoid delays that impact the critical path.
PMOC Recommendation	MTA C&D should update the CSTP and engage LIRR in the identification of criteria for acceptance of completed tests. The testing

	schedule should be reviewed to confirm that sufficient time and resources are included to address failed tests and the resulting need for "fixes" and retesting.
Issue/Concern	**The impacts of COVID-19 on labor availability and productivity are still evolving as work protocols are defined and contractors respond to the changing requirements.**
Date Identified	6/25/2020
Status	Ongoing.
Project Sponsor Action	MTA C&D has assessed the potential magnitude of delays to substantial completion for all contracts. The most critical risks of delays appear to be up to 30 days of delay to CS179*, 35 days of delay to CM007,* and 50 days of delay to CM014B.
PMOC Recommendation	Provide recommendations when applicable.
Issue/Concern	**There is a risk that the time allocated in the schedule for LIRR testing, commissioning, and pre-revenue service may be insufficient. Delays in contractor submission of comprehensive training plans and equipment manuals is impacting LIRR's ability to determine staffing and training requirements. In addition, 59,000 feet of corroded track is now planned to be replaced after completion of IIST for the track and related systems. This work may disrupt LIRR commissioning work for the affected area of the project. *The current IPS includes four months (December 2021 to April 2020) for LIRR testing and commissioning of building and facilities systems, which may be optimistic. The schedule provides about eight months for track and related systems testing and commissioning, which also may be optimistic. The IPS is not consistent with the PMOC's understanding of the testing and commissioning plans in the Rail Activation Plan (RAP).***
Date Identified	*Current.*
Status	*Ongoing.*
Project Sponsor Action	The ESA Operational Readiness Group (OpR) develops the RAP and manages activities leading to the start of revenue service. The next update of the RAP will include: An approved, budgeted LIRR OpR/Transition Team staffing plan; incorporation of the rail replacement process into the timeline for Rail Activation; a LIRR/ESA Pre-Revenue Operations Plan defining the specific tasks for pre-revenue operations and their implementation/execution, the resources required, and the associated timelines necessary to ensure operational readiness by RSD.
PMOC Recommendation	The PMOC will continue to monitor LIRR's efforts to develop a specific work plan and schedule for takeover of the ESA assets and preparation for revenue service.
Issue/Concern	***Quality issues with work by previous contractors is delaying ongoing work and could delay LIRR testing and commissioning activities.***
Date Identified	*10/14/2020*
Status	*59,000 feet of track must be replaced. The replacement could delay LIRR testing and commissioning work. Blocked conduits connecting power substations to the tracks are delaying work by the CS086 contractor. Water infiltration in numerous locations is delayin work and may lead to a requirement to replace installed equipment.*
Project Sponsor Action	*MTA C&D is working with contractors to identify and implement repairs for non-conforming work and to address water infiltration.*

	MTA C&D is working with LIRR on the schedule for track replacement in coordination with the required testing and commissioning work.
PMOC Recommendation	*MTA C&D should review its quality control and inspection procedures to identify measures to improve the identification and repair of non-conforming work by the responsible contractors. Non-conforming work should not be allowed to impact work by follow-on contractors.*
Issue/Concern	**The Project Management Plan (PMP) and other management documents are out of date. A hiring freeze by MTA may cause challenges for LIRR in providing staff required for testing, commissioning, and operations.**
Date Identified	7/25/2020
Status	Ongoing.
Project Sponsor Action	The OpR is actively updating the RAP, including preparation of a detailed staffing plan for takeover of the project, *but MTA C&D has not disclosed any plans to update the PMP.*
PMOC Recommendation	The PMP and related management documents should be updated to reflect transition of the work from heavy civil construction to local and integrated systems testing and preparation for revenue service.

1.4. Key Indicators Dashboard

Table 1. Key Indicators Dashboard

Project Sponsor:				New York Metropolitan Transportation Authority	
Project Name:				East Side Access	
Date:				July 31, 2020	
Project Detail					
Oversight Frequency:				**Monthly**	
Element	**Status**			**Prior Status**	**Issue or Concern**
	● **G**	● **Y**	● **R**		
PMP		●		●	PMP last updated in 2017. Update is required to reflect transition to testing, commissioning, and preparation for revenue service.
MCC		●		●	An updated CSTP and Schedule is needed. LIRR may be challenged in providing resources for testing and commissioning.
Cost*	●			●	None.
Schedule		●		●	Local testing delays, work at 270 Park Avenue, and integration of PTC into the signal system may cause delays. Testing schedule and schedule for LIRR commissioning appear optimistic. *Without a complete CSTP, it is impossible to determine the time required to complete systems testing.*
Quality		●		●	*Quality issues with work by previous contractors is delaying current work and could delay testing and commissioning.*
Safety		●		●	ESA exceeds industry standards for Lost Time and Recordable Incidents.
Risk		●		●	Several significant schedule risks may cause a delay to RSD.
Legend					
Green	Satisfactory: no Corrective Action necessary				
Yellow	Caution: Risk/Issues exist. Corrective Action may be necessary				
Red	Elevated for immediate Corrective Action: significant risk to the health of the project				

*Note: Yellow – forecast cost exceeds the project budget by up to 5%; Red – forecast cost exceeds the project budget by more than 5%

1.5. Core Accountability Items

Table 2 shows the core accountability items for the project, including the current status of the project and the major issues and how they are being addressed.

Table 2. Core Accountability Items

		Amended Grant	Current Forecast	PMOC Assessment of Current Forecast[1]
Cost	Capital Cost Estimate	$10.92 billion	$11.13 billion	Acceptable
Contingency[2]	Unallocated Contingency	b(4)	[redacted]	[redacted]
	Allocated Contingency	$379 million	*$227 million*	Acceptable
	Total Contingency	b(4)	[redacted]	[redacted]
Schedule	Revenue Service Date	12/31/2023	6/9/2022	Optimistic

Project Progress		**Amount ($)**	**Percent of Total**
Total Expenditures[1]	Actual invoiced amounts, not including finance costs.	*$9.492 billion*	*85.3%*
Planned Cost to Date[2]		$9.675 billion	86.9%

Contract Status		**Amount ($)**	**Percent of Total**
Total Contracts Awarded[1]	Value of all contracts (design, support, construction, equipment) awarded; % of total value to be awarded.	*$9.909 billion*	89.0%
Construction Contracts Awarded[1]	Value of construction contracts awarded; % of total construction value to be awarded.	*$7.553 billion*	94.1%
Physical Construction Completed[1]	Invoiced cost of physical construction (infrastructure) completed; % of total construction value completed.	*$7.214 billion*	90.0%

Rolling Stock Vehicle Status	**Date Awarded**	**No. Ordered**	**No. Delivered**
M9A	To Be Determined (TBD)	160	TBD
Support Vehicles	TBD	5	TBD

Next Quarterly Review Meeting Date:	*TBD*

1. source: PCM Total Cost Report by Contract, *August 2020*.
2. Earned and planned value information is not available.

2. OBSERVATIONS AND FINDINGS

2.1. Summary of Monitoring Activities

- PMOC/MTA C&D Monthly Cost and Schedule Review
- Quarterly FTA/PMOC Quarterly Readiness Briefing
- CH058A and CW033 Weekly Railroad Resource Meetings
- CM014B Weekly Progress Meeting
- Regional Schedule Review for Railroad Resources
- CS179 Monthly Progress Meeting
- VS086 and CS086 Monthly Progress Meeting
- CS084 Monthly Progress Meeting
- Review of ESA MPR and Related Cost and Schedule Data Files
- Review of IPS
- Review Selected Change Orders valued at over $100 thousand

2.2. Oversight Triggers

The project is subject to continuous monitoring by the PMOC. FTA and MTA executed an Enterprise Level Program Execution Plan (ELPEP) to guide the completion of both ESA and Phase 1 of the Second Avenue Subway (SAS). The ELPEP established principals for the management of the two mega-projects to assure adequate Management Capacity and Capability (MCC) and sufficient cost and schedule contingency levels to achieve successful completion of both projects. Phase 1 of SAS was completed, and ESA is nearing the 90% completion level for construction. The PMOC is reviewing the ELPEP and will recommend appropriate modifications to the document for the completion of testing and commissioning and the start of revenue service.

2.3. Project Management Plan and Sub-Plans

MTA C&D is using the current version of PMP, Rev. 10, which the PMOC reviewed and the FTA accepted in 2017. *The OpR has completed an update to the RAP (version 3.2.3), for which approvals from LIRR were finalized in September 2020. The OpR is working on further updates of the RAP to include more details regarding LIRR takeover of the completed project, a transition team staffing plan for LIRR, and a detailed plan and schedule for LIRR pre-revenue operations. Additional key elements of the RAP, including the CSTP, are pending.*

MTA C&D issued updated drafts for the Cost Management Plan, Schedule Management Plan, and Risk Management Plan in December 2018 and the Contract Packaging Plan, as well as the MCC Plan, in January 2019. In the opinion of the PMOC, MTA C&D should update the PMP to reflect the transition of the project into the IST phase on or before January 1, 2021. The updated PMP should reflect the current and planned MTA C&D and LIRR organization charts and staffing plans for completion and start-up of ESA and should refer to the RAP and other sub-plans (e.g., the CSTP) to provide details on how the progress of the testing work will be monitored and controlled and how the process of handing over the project to LIRR will be managed. *The CSTP*

needs to be complete to identify and formalize the process, time, and resources needed to complete testing and commissioning of all the systems and facilities provided under the ESA project.

2.4. Management Capacity and Capability

In April 2018, the FTA advised MTA C&D to incorporate its current updates and commence with a subsequent revision that addresses management changes resulting from the MTA C&D Six-Point Plan for ESA. MTA C&D included the required updates in the draft MCC Plan revision submitted in May 2019. In the opinion of the PMOC, the MCC plan for the project should be updated to provide details on the agency resources to be assigned to testing and commissioning activities. The PMOC is concerned that LIRR may be challenged to assign adequate staff for testing and training due to a hiring freeze instituted by MTA and other factors.

2.5. NEPA Process and Environmental Mitigation

No National Environmental Policy Act (NEPA) issues have been identified. MTA C&D continues to coordinate evaluation, treatment, and removal of contaminated soils as they are encountered during construction.

2.6. Project Delivery Method and Procurement

The project is being delivered through a traditional design-bid-build process, with numerous design, construction, and construction management contracts as well as Force Account agreements with MTA operating agencies and Amtrak.

2.7. Design and Construction Phase Services

The ESA August PCM Total Cost by Contract Report indicated that the overall engineering effort was *89.6%* complete compared to planned completion of 90.4%. *While the Final Design (FD) of 9 of the 10 Control Systems for buildings and facilities is reported as completed, the FD of one critical system, the Closed-circuit Television & Security Management Software (CCTV/SMS) has yet to be finalized and tested in the factory. The FD of all 10 of the Control Systems being provided under the CS179 contract is, as of the end of September 2020, 53 months late.* Because of delays to completion of the PTC design by LIRR, MTA C&D is planning to complete installation of PTC after completion of the base signal system, which will delay substantial completion of that work. The impact of late integration of PTC has not been included in either the project schedule or the overall cost forecast.

2.8. Procurement

CH063 Electric Traction Catenary Work, Third-Party: *MTA C&D awarded this contract on October 5, 2020. The PMOC will provide additional information in the October 2020 report.* This is the final third-party contract for ESA construction.

2.9. Construction

The ESA August PCM Total Project Cost By Contract report states that the total construction progress reached *90.0% completion* compared to planned 91.9% completion. The ESA construction progress during *September 2020* included:

2.9.1. Manhattan Construction:

1. The GCT Caverns (Contract CM007) contractor continued advancing the installation of architectural cladding, ceiling panels, and terrazzo flooring; escalators and elevators; heating, ventilation, and air conditioning (HVAC); plumbing; and low voltage systems installations in the Back of House (BOH) areas. The power track monument remediation work along the right-of-way (ROW) *is nearly complete*. MTA C&D is working with LIRR to reconcile the issues with the remaining non-conforming monuments. The pre-functional *and local testing* of systems and MEP equipment *is continuing*. The track work, special track work, and third rail along the project alignment is nearly complete. MTA C&D completed analyzing the instances of corrosion of the running tracks, rail clips, and bonding cables, which will require the replacement of the corroded material. Approximately 59,000 feet of track will be replaced after completion of the track IIST at the cost of the contractor. The PMOC is concerned that the track replacement may conflict with LIRR testing and commissioning work.
2. The GCT Concourse and Facility (Contract CM014B) contractor continued the erection of structural steel and decking in Zones 1 and 4. The installation of the MEP systems and the interior fit-out work is advancing throughout the concourse and BOH. The foundation work and substructure systems for the 270 Park Avenue building in GCT concourse Zone 4, performed by JPMC, *continues to be running behind schedule and is causing delays to its scheduled completion date. MTA C&D directed JPMC to increase the workforce* and to work around the clock to recover the schedule delays.
3. The Vertical Circulation (Contract VM014) contractor fabricated and delivered materials to the jobsite for all escalators and all elevators except for elevator EL#10.
4. The Metro-North Railroad (MNR) (FMM19) force account resources continued to provide direct and indirect support to Contracts CM007 and CM014B.

2.9.2. Queens/Harold Interlocking Construction:

1. The Mid-day Storage Facility (Contract CQ033) contractor continued to maintain social distancing for its reduced workforce. The contractor continued construction of the Cart Storage and Storage Buildings, installation of Car Appearance Maintenance (CAM) platform plumbing, excavation, grading, installation of the utility trough between Honeywell and 39th streets, and installation of signal and power cables. The construction of substations B15, 16, and 17 is advancing. *Amtrak completed the asbestos abatement work at building #7.*

2. The Harold Structures B/C Approach (Contract CH058A) contractor continued to place parapet walls at the east approach structure of Tunnel B/C. The contractor continued the concrete work underneath the 39th Street Bridge structure. The clearing and grubbing work west of Honeywell Street was completed. The site grading, ballast, and sub-ballast work for the trackwork of the B/C approach is underway. The load transfer of the 39th Street Bridge from temporary supports to permanent supports is in progress.
3. The Harold Stage 1-2 (FHA/L01-2) Amtrak and LIRR force account resources continued installation of track and switches, the microprocessor-based signal system, and the traction power substation. Amtrak Electric Traction (ET) and Communication and Signals (C&S) personnel continued construction of Breakers 925 and 931, reconfiguration of the signal system along the Loop Tracks for the future track realignment, and placement of the new Loop Interlocking Central Instrument Location (CIL) in service.
4. The Harold Interlocking Stage 3-4 (FHA/L03-4) Amtrak and LIRR force account resources continued installation of track and switches, signal system, and traction power substation. Amtrak ET forces installed feeders, spliced feeders over the loop track, installed brackets on catenary poles, removed old cables and trough, and installed pull box for E34 L3. LIRR ET forces began excavation for 3234 Switch, inspected conduits and cables for 3234 W components, and repaired the reactor at the signal bridge.

2.9.3. Systems Construction:

1. The Facilities Systems (CS179) contractor continued installing conduit, cable, and equipment in the tunnels and at the various facilities where there were no Stop Work Orders (SWOs) and where access was available. The CS179 contractor continues to miss contract milestones for local testing of installed equipment. Some of the delays are a result of the contractor's reduced workforce due to the COVID-19 pandemic; other delays are a result of incomplete installation and turnover of equipment from other ESA contractors; *and some are a result of field changes requested by the contractor or necessitated by field conditions that require action by MTA C&D before any work can be started. The continued delay in completion of the local testing of installed systems has further delayed the full implementation of IIST*. Coordination with MTA C&D will be required to identify necessary modifications to testing procedures as a result of the impacts of the construction of the foundations for the JPMC building at 270 Park Avenue. *As of the end of September 2020, the number of contractor submittals, Requests for Information (RFIs), and Field Change Requests (FCRs) awaiting MTA C&D responses was 533, 34, and 2, respectively. Although these numbers show a slight improvement from the previous month's report*, a significant number of MTA responses to submittals, RFIs, and FCRs continue to exceed the 30-day turnaround time stipulated in the contract; which, consequently, enables the contractor to assert that its delays in the progression of the work were caused by MTA's inability to respond to submittals, RFIs, and FCRs in a timely manner.

2. The Traction Power Systems (CS084) contractor continued project work in the traction power substations (TPS) C01, C02, and C04 through C07. *With the reduction in humidity and water infiltration at the C03 substation, the contractor began the installation of the epoxy di-electric coating on the floor of the traction power equipment room during the 4th week in September. However, one day after the commencement of this epoxy installation, the room again experienced water infiltration. Work on the epoxy installation was halted, and MTA C&D indicated that it needed to evaluate the cause of the renewed water infiltration and assess any damage that may have occurred to the epoxy installation.* The non-availability of compliant track monuments continues to impact the timely progression of the work; and, additional issues regarding conduit blockages and the impact on cable installation efforts continue. The water infiltration problem in the C08 substation roof remains unresolved *and two additional water infiltration areas (wall to foundation and foundation cracks) have been identified, delaying the energization of this substation. The contractor continues working with the C08 substation fabricator to identify the cause of the roof leaks and propose a remediation method that will permanently eliminate the problem. MTA C&D will investigate remediation methodologies for the two recently identified leaks in the C08 substation. Other field construction issues continue to be identified and associated remediation methodologies need to be identified to mitigate any further negative impact to the contractor's progress. The schedule acceleration modification that was previously reported as being executed remains on hold pending receipt of schedule information related to the proposed CS086 contract schedule revision*. The CS086 schedule information is needed because of the coordination of work efforts (e.g., impedance bond installations) between the two contractors.

3. *Discussions between the CS086 contractor and MTA C&D on a contract modification to extend contract Milestone dates and implement a proposed contract acceleration schedule continue, with no forecasted completion date available.* However, despite the lack of an executed contract modification for work acceleration, the Tunnel Signal System (Contract CS086) contractor is working in as many locations as possible, seven days per week, to try and recover lost time. There still are several unresolved field conditions and issues that require mitigation. *The issue related to the delay of the installation of fiber optic cables that was reported last month has been resolved, with the CS086 contractor reporting that it will install the cable with its forces rather than have the originally proposed subcontractor perform the work. The contractor indicates that this change in work strategy will negatively impact its Disadvantaged Business Enterprise (DBE) participation on the contract. Additionally, LIRR and the contractor have a significant difference of opinion as to what testing of the fiber optic network is required, and separate meetings will now need to be held to discuss this issue. The previously reported issue regarding water infiltration into, and possible damage of, track-side switch terminal boxes and switch machines has yet to be fully evaluated by MTA C&D, and no mitigation strategy has been offered. LIRR estimates that as many as 80% of the switch machines might require replacement. The CS086 Construction*

Manager (CM) indicated that any remediation efforts for the track switch water incursion issue must come from the CM007 contractor and that he would make internal MTA C&D inquires as to what will be done. As the CS086 contractor noted previously, any replacement of the switches will impact the signal breakdown testing. The CS086 contractor continues to report that many remediation efforts by the CM007 contractor to repair non-compliant impedance bond track cutouts are still not compliant with LIRR specifications. *The CS086 contractor was instructed to finish up the surveys of the impedance bond locations and provide MTA C&D with a list of areas that need some form of modification to the impedance bond cutouts. The contractor is using a "water jet" machine to attempt to clear numerous blocked duct lines that are impacting the signal cable installations. These issues could have been addressed much earlier had MTA C&D conducted a recommended survey of the availability of manholes and conduit connections from the substations to the tracks.*

Tables 3 and 4 show the cost to date, estimate at completion (EAC), and percentage of work that is complete for the active construction contracts and the force account agreements, respectively.

Table 3. Costs and Percent Complete for Active Construction Contracts

Contract	Invoiced to Date	Estimate at Completion	Percent Invoiced
CM007	*$620.9*	*$706.4*	*87.9%*
CM014B	*$483.9*	*$558.9*	*86.6%*
VM014	$32.4	*$52.6*	*61.6%*
CQ033	*$302.3*	*$340.9*	*88.7%*
VQ033	*$20.3*	*$21.7*	*93.6%*
CS179	*$617.2*	*$765.5*	*80.6%*
CS084	*$66.0*	*$101.8*	*64.8%*
CS086	*$26.4*	*$71.1*	*37.1%*
VS086	*$18.6*	$23.1	*80.5%*
CH058A	*$74.1*	*$93.9*	*78.9%*

Note: Dollars in millions. Source: *ESA July 2020 MPR.*

Table 4. Costs and Percent Complete for Active Force Account Packages

Work Package	Invoiced to Date	Estimate at Completion	Percent Invoiced
FMM19	*$58.6*	$72.5	*80.8%*
FHA02	$61.1	*$63.0*	*97.0%*
FHL02	*$127.7*	$132.4	*96.5%*
VHA02	$12.4	$14.8	83.8%
VHL02	$29.2	*$30.4*	*96.0%*
VH051	$29.7	$30.2	98.3%

Note: Dollars in millions.

2.10. Real Estate Acquisition and Relocation

MTA has acquired all project ROW, and all commercial and residential relocations are complete.

2.11. Third-Party Agreements and Utilities

All major third-party agreements for the project have been executed. MTA C&D provides ongoing coordination between the construction contractors and various New York City and New York State agencies with adjacent facilities. Most utility relocations are complete.

MTA C&D is coordinating ESA construction with two major building construction projects at 270 Park Avenue for the JPMC headquarters and at 415 Madison Avenue. The JPMC construction is underway and, as discussed elsewhere in this report, represents a risk to the ESA project schedule. The design and construction of a new building at 415 Madison Avenue has been paused at the 50% design stage, but the owner plans to develop a public plaza at the ESA 48th Street entrance.

2.12. Vehicle Technology and Procurement

The ESA program includes 160 Electric Multiple Unit (EMU) railcars for revenue service and 5 non-revenue vehicles. During December 2019, LIRR completed and solicited the second step of the procurement of the EMUs, a Best and Final Offer for the vehicles. LIRR received the proposers' responses on January 29, 2020, after which LIRR began evaluation. LIRR now intends to issue the award and Notice to Proceed for this procurement in the 4th Quarter of 2020. These EMUs will not be available for use on the RSD. LIRR is preparing a revised Operating Plan and Rail Fleet and Management Plan (RFMP), which will document the fleet requirements for revenue service on the RSD and the vehicles from the existing LIRR fleet that will be assigned to ESA service. The service level at the RSD will be different from the service level called for in the FFGA with the FTA due to factors that include the effects of COVID-19 on ridership demand, missing infrastructure, the agency's operating budget, and the delayed availability of railcars.

2.13. Project Cost

MTA C&D continues to forecast the cost at completion for the ESA project at $11,133,318,249 (excluding financing costs). Table 5 shows historic and current budgeted cost, contract awards, and invoiced cost by cost type for ESA. Table 6 shows budget, contract award, and invoiced amounts by FTA Standard Cost Categories (SCC).

Table 5. Project Budget and Invoices

Elements	MTA Baseline Budget June 2014	2018 Re-baseline Budget	*July 31, 2020*				Invoice % of 2014 Baseline
			Current Budget (interim)	Actual Awards	Invoiced Costs	Invoice % of Budget	
Construction	$7,379.3	$7,761.0	*$8,028.4*	*$7,551.2*	*$7,189.3*	*89.6%*	*97.4%*
Soft Cost Subtotal	$1,975.4	$2,296.7	$2,474.0	*$2,233.4*	*$2,237.7*	*90.5%*	*113.3%*
Engineering	$720.6	$841.1	$877.0	$812.7	*$782.3*	*89.2%*	*108.6%*
Owner Controlled Insurance Program	$282.6	$416.2	$457.4	$384.2	*$383.9*	*83.9%*	135.9%
Project Management	$972.2	$1,039.4	$1,139.6	*$1,036.5*	*$981.5*	*86.1%*	*101.0%*
Real Estate	$182.1	$124.9	$183.7	$120.0	$118.6	64.6%	65.1%
Rolling Stock	$665.0	$7.5	$202.0	$2.8	$0.3	0.0%	0.0%
Contingency (Unallocated)	$439.0	$145.0	b(4)	--	--	--	--
Total	$10,640.8	$10,335.1	$11,133.3	*$9,907.4*	*$9,455.9*	84.9%	88.9%

Note: Dollars in millions.

Table 6. Project Costs by SCC

SCC	FFGA	Amended FFGA	*July 31, 2020*			
			Current Budget	Awarded Value	Paid to Date	Amended FFGA Remaining
10 - Guideway & Track Elements	$1,989	$3,353	*$3,505*	*$3,391*	*$3,209*	*$144*
20 - Stations, Stops, Terminals, Intermodal	$1,169	$2,327	*$2,487*	$2,329	*$2,146*	*$181*
30 - Support Facilities (Yards, Shops, Admin)	$356	$451	*$605*	*$575*	*$529*	*($78)*
40 - Site Work and Special Conditions	$205	$562	*$556*	$495	*$515*	*$47*
50 - Systems	$619	$628	*$831*	*$716*	*$593*	*$35*
60 –ROW, Land, Existing Improvements	$165	$192	*$221*	$157	$156	$36
70 - Vehicles	$494	$880	*$210*	*$11*	$6	$874
80 - Professional Services	$1,184	$1,809	*$2,474*	$2,233	*$2,138*	*($329)*
90 - Unallocated Contingency	$169	$720	b(4)	--	--	(4)
Total (without finance)	$6,350	$10,922	*$11,133*	*$9,907*	*$9,292*	*$1,630*
100 – Financing Cost	$1,036	$1,166	*$1,116*	*NA*	*$618*	*$498*
Total Cost	$7,386	$12,038	*$12,250*	*NA*	*$9,910*	*$2,128*

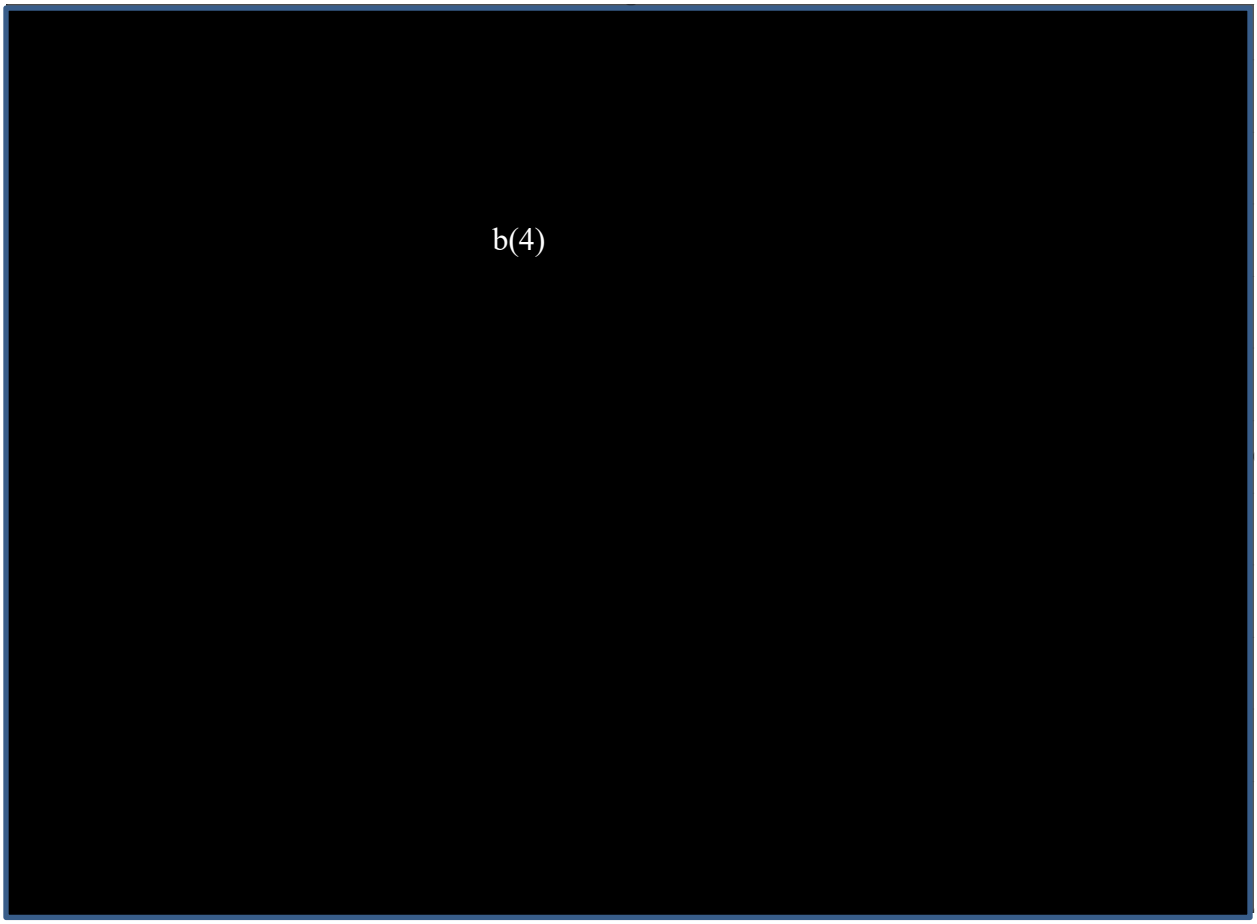
Source: *ESA SCC Cost by Source Updates, August 2020*

2.13.1. Contingency

The July 2020 MPR for the project shows that contingencies in the current budget total $472 million, which includes unallocated contingency of $245.3 million and allocated contingency of $226.8 million. Unallocated contingency is composed of $75 million in ELPEP reserve funds *and $170.3 million in project-wide contingency.* Available cost contingency represents 28% of the

remaining budget. Figure 1 shows the available contingency compared to the required amount in the ELPEP.

Figure 1. FTA East Side Access Cost Contingency Minimums



The following major contract changes were reported in the ESA July MPR:

1. CS179 – CTC TIMACS Interface: $6.67 million
2. CS179 – Corporate IT Systems: $4.56 million
3. CS 179 – ESA Security Network Changes Option 3: $5.02 million
4. CH058A – VX-WX diamond revisions: ($330,000)
5. CM007 – Delete Laser Scan Survey: ($471,600)

2.14. Project Schedule

The schedule information in this report is based on schedule information provided in the ESA July 2020 MPR and IPS 130. The forecast for the Target RSD remained unchanged from the 2020 Second Quarter Progress Report at June 9, 2022, and the Public RSD remained at December 13, 2022.

[redacted]
b(4)
[redacted]

[redacted] MTA C&D continues to track two paths through the Manhattan/Systems work in order to improve reporting of near critical work. Manhattan facilities and related systems and Manhattan track and

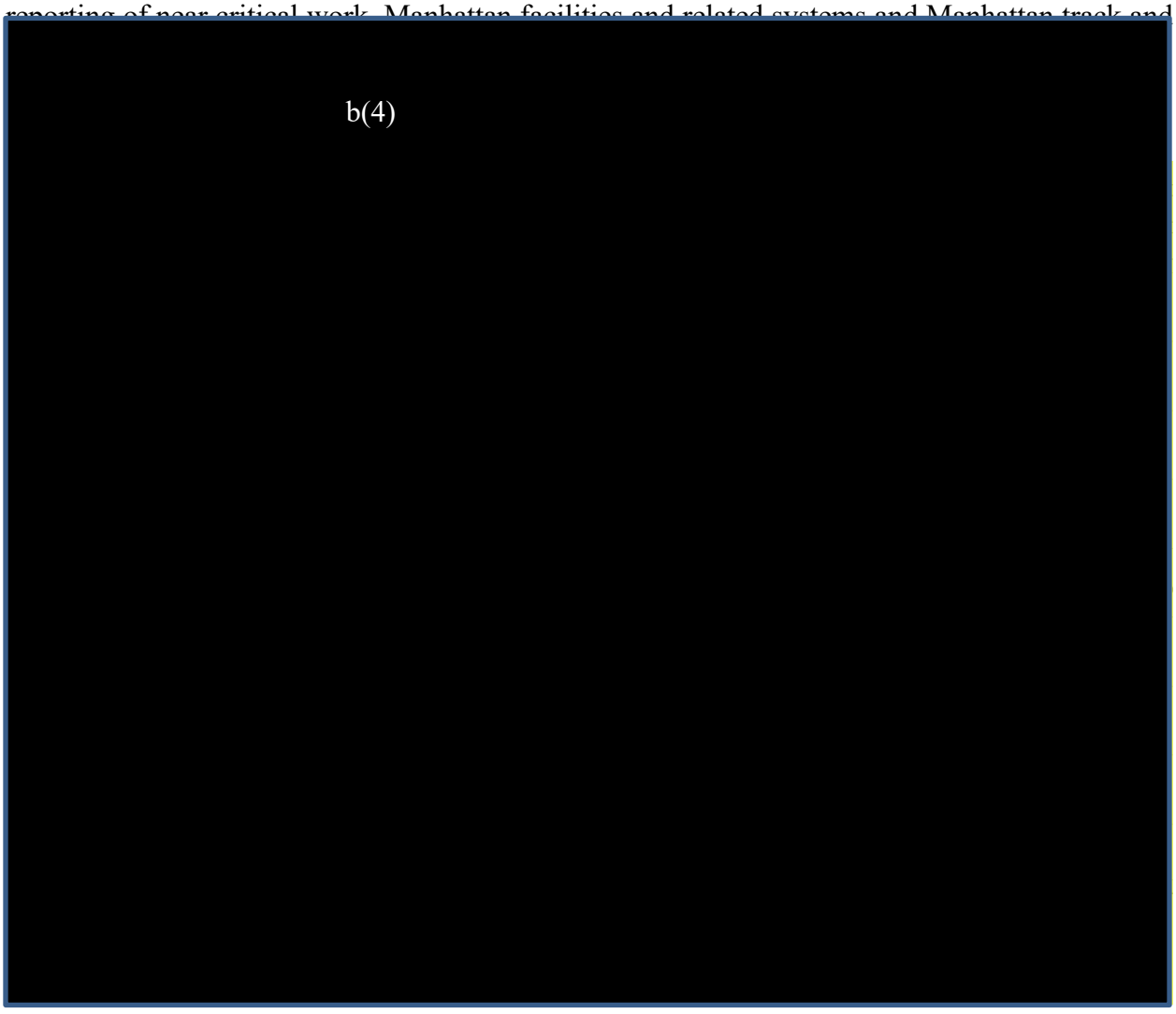


Table 7 shows dates, remaining durations, and contingencies for the Target, Public, and FFGA RSDs.

Table 7. Schedule Contingency (from ESA July 2020 MPR)

	Target RSD 6/9/2022	Public RSD 12/13/2022	FFGA RSD 12/31/2023
Target RSD Contingency			
Duration Remaining to Target RSD from 7/31/2020	*678 days*	*865 days*	*1,248 days*
Remaining Target RSD Contingency	[redacted]	[redacted]	[redacted]
Remaining IPS Contingency Percent	[redacted]	b(4)	[redacted]

The current IPS does not include the impacts of late integration of PTC or the construction of the JPMC headquarters building on the project schedule. In addition, the schedule for IIST has not been integrated into the project schedule. The forecasted RSD is likely to be extended when these factors are represented in the project schedule.

Table 8 summarizes the key milestones listed in the IPS July 2020 Revision.

Table 8. July 2020 IPS Key Milestones

Milestone	Finish Date
Mid-day Storage Yard Queens Substantial Completion	*4/26/2021*
Harold Interlocking Substantial Completion	6/29/2021
CS179 Systems Package 1 – Facilities Systems Substantial Completion	*12/14/2021*
CS179 Track IST Complete	*8/18/2021*
MTA Target RSD	6/09/2022
MTA Public RSD	12/13/2022
FFGA RSD	12/31/2023

Several risks may impact the schedule for completion of IIST for the facility systems portions of the project. Milestones for completion of local testing for CS179 are being missed, delaying the start of IIST for various systems. The schedule for testing does not appear to allow time to address failed tests. Disagreements between LIRR and the contractor have arisen regarding the scope of required testing, and, in the opinion of the PMOC, there is a risk that LIRR may disagree with the criteria for successful completion of tests.

There is a risk that the time allocated in the schedule for LIRR testing, commissioning, and pre-revenue service may be insufficient. Delays in contractor submission of comprehensive training plans and equipment manuals are impacting LIRR's ability to determine staffing and training requirements. In addition, 59,000 feet of corroded track is now planned to be replaced after completion of IIST for the track and related systems. This work may disrupt LIRR commissioning work for the affected area of the project. *The current IPS includes four months (December 2021 to April 2022) for LIRR testing and commissioning of building and facilities systems, which may be optimistic. The schedule provides about eight months for track and related systems testing and commissioning, which also may be optimistic.* b(4) [redacted]

2.15. Project Risk

The major risks impacting the project are discussed below.

1. **Delays Due to late integration of PTC** - Because of delays to completion of the PTC design by LIRR, MTA C&D is now planning to complete installation of PTC after completion and IST of the base signal system under Contracts VS086 and CS086. The late integration of PTC will delay substantial completion of both ESA contracts and may impact the RSD. The incomplete CTP does not include testing of the signal system, which will be complicated by the late integration of PTC. The current IPS does not reflect the impacts of the late integration of PTC on the program schedule. *The impacts of the revised sequence of work for PTC were not reflected as planned in the IPS until the October 1, 2020 update.* In the opinion of the PMOC, a delay to the planned RSD from these risks is likely. The magnitude of the delay will be uncertain until the PTC activities are incorporated in the program schedule.
2. **Delays Due to JPMC Redevelopment at 270 Park Avenue** - The foundation and substructure systems required for the planned new JPMC building at 270 Park Avenue are impacting the ongoing construction of the new LIRR concourse at GCT. The foundations/substructures for the new office tower at 270 Park Avenue will be located at the northern end of the LIRR Concourse. *JPMC work fell 10 weeks behind schedule over a three-month period.* MTA C&D directed the developer to increase the number of available drill rigs and workers and to work around the clock. Recent progress indicates that the work continues to fall further behind schedule and recovery of the accumulated delays has not occurred. MTA has exercised additional rights under the Construction Agreement for 270 Park Avenue to recover the schedule delay. MTA C&D has developed a Contingency Plan as part of the Construction Agreement that would be triggered by a significant delay in advancing the work for the JPMC building, which could then delay the ESA RSD. A significant element of the Contingency Plan is the requirement that JPMC provide temporary pedestrian corridors through the JPMC construction sites to allow for the full planned use of the LIRR concourse for revenue service. This requirement would complicate later completion of the remaining ESA work for the LIRR concourse in the affected area or areas. This Contingency Plan has not yet been invoked.
3. **Delays Due to Late Systems Design and Integrated Testing** - *While the FD of 9 of the 10 Control Systems for buildings and facilities is reported as completed, the FD of one critical system, the CCTV/SMS has yet to be finalized and tested in the factory. The FD of all 10 of the Control Systems being provided under the CS179 contract is, as of the end of September 2020, 53 months late. Because of delays to completion of the PTC design by LIRR, MTA C&D is planning to complete installation of PTC after completion of the base signal system, which will delay substantial completion of that work. The impact of late integration of PTC has not been included in either the project schedule or the overall cost forecast. Details of the IIST plan are still being finalized and have not been integrated into the project schedule. The contractor indicates that the IIST of the*

Backbone Communications System (BCS) was conducted and completed in August 2020; however, LIRR indicates that the IIST of the BCS is not complete and that additional testing is required. The start of IIST on other systems continues to be delayed with the contractor indicating that those IIST start dates will move beyond the previously anticipated September 2020 start date. The schedule indicates that 12 months is available for IIST, and without seeing the details of the IIST Plan and agreements to the Plan by LIRR, it is unclear if there is *enough time to complete all testing, especially if test failures result in a need for re-testing.*

4. **Delays Due to 2020 COVID-19 Pandemic Impacts** - During Quarter 1 (Q1) 2020, the global COVID-19 pandemic became the top medical, social, and economic challenge in the United States. This situation is expected to have significant cost and schedule impacts to the completion of the ESA project. MTA C&D estimates that substantial completion of key contracts may be delayed by 30 to 50 days. Delayed substantial completion of construction could result in delayed start of LIRR testing and commissioning work. In response to the financial impacts of COVID-19 on the agency, MTA has instituted an agency-wide hiring freeze. This hiring freeze could impact the availability of MTA and LIRR staff for testing, commissioning, and start-up activities.
5. **Delays in Completing LIRR Testing, Commissioning, and Pre-revenue Service** - *The current schedule provides about four months for LIRR to test, commission, and ready for revenue service the building and facility systems for the project.* This schedule is considered aggressive by the PMOC, and there is a risk that sufficient LIRR resources will not be available to complete this testing in the allotted time. *The schedule provides about eight months for LIRR testing, training, commissioning, and pre-revenue service for the tracks and related rail system components. Without a complete CSTP, the time required to complete testing cannot be confirmed.* Furthermore, *the dates in the IPS do not appear to be consistent with the testing schedule in the RAP. Despite the two-month period between completion of testing and the RSD in the IPS, there is a risk that more time will be needed to prepare the rail system for revenue service.*

2.16. Quality Assurance/Quality Control.

The PMOC reports Quality Assurance/Quality Control issues on a quarterly basis. MTA C&D did not report any significant issues regarding Quality Assurance or Quality Control in its Q2 Quarterly Progress Report (QPR). The PMOC noted that replacement of 59,000 linear feet of non-conforming rail is planned after completion of IIST for track (after July 31, 2021). The PMOC is concerned that the track replacement work could disrupt LIRR's testing, commissioning, and pre-revenue service activities**.**

2.17. Safety and Security

In *August* 2020, the project had *no* recordable incident and no lost-time incidents based on *260,808* hours worked. The ESA project Injury Ratios were *1.60* for Lost Time Injuries (LTI) and *3.42* for Recordable Injuries (RI). The LTI ratio was slightly above and RI ratio was above the Bureau of

Labor Statistics (BLS) 2020 Safety Guideline of 1.5 for LTI and 2.6 for RI. *The September 2020 safety data for the project was not available at the time this report was drafted; however, this data is expected to be available after mid-October 2020.* Additionally, no significant security issues were reported in its May 2020 MPR.

2.18. Americans with Disabilities Act

The project is designed to be fully compliant with Americans with Disabilities Act (ADA) Accessibility Guidelines.

2.19. Buy America

One waiver of Buy America requirements for proposed Variable Refrigerant Flow (split system) air conditioning equipment is pending since a request was made by MTA C&D in 2017.

2.20. Start-Up, Commissioning, Testing

LIRR will be responsible for further system testing, commissioning, and start-up activities after completion of testing by the various contractors. Testing and commissioning will be required for the building and facility systems in GCT, the tunnels, and the various other structures (fire alarm, ventilation, communication, security, vertical circulation, etc.) and for rail systems (traction power, signaling, PTC, etc.). The current IPS indicates that building and facility systems will be turned over to LIRR on December 13, 2021. The planned RSD is June 9, 2022, which allows about six months for LIRR testing, commissioning, and start-up for building and facility systems.

The IPS indicates that the tracks and related rail systems will be turned over to LIRR on *August 18, 2021, about three weeks later than forecast the previous month*. The planned RSD provides about *10 months* for LIRR testing, commissioning and start-up of rail systems, *including two months of "float" between "ready for revenue service" and the Target RSD.*

An Operational Readiness team has been assigned and divided into 11 functional *Task Working Groups (TWG):*

1. ESA RAP. An updated draft of the plan has been completed and circulated. The CSTP needs to be completed, and further updates to the RAP are underway.
2. ESA Service Plan. A revised service plan, including fleet assignments for the planned service, is scheduled to be completed at the end of 2020.
3. Engineering. This group is developing work plans for facilities shared by LIRR and other entities, such as MNR.
4. Asset Management. This group is developing plans for the management of all capital assets, including maintenance of assets by the contractors during construction and longer-term asset management and parts storage by LIRR.
5. Stations Unified Trash. This group is managing the construction of facilities for handing trash in stations.
6. Pedestrian Flow Model of GCT.

7. Safety and Security. The responsibilities of this group include the Safety and Security Certification Committee, which has started meetings to review the certifiable items and the development of Emergency Action Plans and other safety and security-related documents.
8. Marketing. This group is developing plans for public communications and information systems, including signing in stations and public information outreach activities.
9. Legal and Labor Relations. This group is addressing needed changes to collective bargaining agreements and other legal documents for the start of LIRR service to GCT.
10. Finance. This group is managing the procurement of a contract for provision of simulators for ESA and is addressing funding for LIRR start-up activities and ongoing operations.
11. Fleet. This group coordinates the procurement of the EMU fleet (M9A, expected to be awarded in late 2020), rescue (or protect) locomotives for moving disabled EMUs, a leased protect locomotive for the testing period, a track geometry vehicle, re-railing equipment, and equipment for moving out-of-service vehicles.

2.21. Before-and-After Study Reporting

The PMOC will report on Before and After Reporting Activities in a future monthly report.

2.22. Lessons Learned

The PMOC will provide lessons learned in a future monthly report.

2.23. Actions Items Table

The action items in Table 9 were identified at the June 25, 2020 Quarterly Project Review meeting.

Table 9. Action Items

Number	Date Identified	Action/Recommendation	Due Date
1	6/25/2020	MTA and FTA to discuss timing of final grant draw-downs.	TBD
2	6/25/2020	MTA to provide detail on steps to be taken to assure minimum contingency levels are maintained.	TBD
3	6/25/2020	MTA to present plan for addressing late arrival of M9A fleet.	TBD
4	6/25/2020	PMOC to assess impact of systems testing delays on the RSD. Note: This assessment is underway.	TBD
5	6/25/2020	PMOC to review RAP.	TBD
6	6/25/2020	PMOC to review ELPEP, Schedule, Cost, and Risk Management Plans.	TBD
7	6/25/2020	FTA and MTA to discuss impacts of CM015 issues.	TBD

Number	Date Identified	Action/Recommendation	Due Date
8	6/25/2020	FTA and MTA to discuss impacts of COVID-19 on the project.	TBD

ATTACHMENT A – LIST OF ACRONYMS

ADA	Americans with Disabilities Act
ASTS	*Ansaldo STS*
BCS	*Backbone Communications System*
BLS	Bureau of Labor Statistics
BOH	Back of House
C&S	Communication and Signals
CAM	Car Appearance Maintenance
CCA HI	*Civil Halmar International*
CCTV/SMS	*Closed-circuit Television/Security Management Software*
CIL	Central Instrument Location
CM	*Construction Manager*
CSSP	*Construction Safety and Security Plan*
CSTP	Comprehensive System Test Plan
DBE	Disadvantaged Business Enterprise
DF	*Designated Function*
DJ	*Dragados Judlau*
EAC	Estimate at Completion
EIS	*Environmental Impact Statement*
ELPEP	Enterprise Level Project Execution Plan
EMU	Electric Multiple Unit
ESA	East Side Access
ET	Electric Traction
FCR	Field Change Request
FD	*Final Design*
FFGA	Full Funding Grant Agreement
FIST	Field Installation Acceptance
FRA	*Federal Railroad Administration*
FTA	Federal Transit Administration
GCT	Grand Central Terminal
HVAC	Heat, Ventilation, and Air Conditioning
IIST	Incremental Integrated Systems Testing
IPS	Integrated Project Schedule
IST	Integrated Systems Testing
JPMC	J. P. Morgan Chase
LIRR	Long Island Rail Road
LTI	Lost Time Injuries
MCC	Management Capacity and Capability
MEP	Mechanical, Electrical, Plumbing
MNR	Metro-North Railroad
MPR	Monthly Progress Report
MTA	Metropolitan Transportation Authority
MTA C&D	MTA Construction and Development
NEPA	*National Environmental Policy Act*
NTP	*Notice to Proceed*
O&M	*Operations and Maintenance*
OHA	*Operational Hazard Analysis*
OpR	Operational Readiness Group
PCM	
PHA	*Preliminary Hazard Analysis*
PMOC	Project Management Oversight Contractor (David Evans and Associates, Inc.)
PMP	Project Management Plan

PTC	Positive Train Control
Q	Quarter
QPR	Quarterly Progress Report
RAP	Rail Activation Plan
RFI	Request for Information
RFMP	Rail Fleet Management Plan
RFP	*Request for Proposal*
RI	Recordable Injuries
ROW	Right of Way
RSD	Revenue Service Date
SAS	Second Avenue Subway
SCC	Standard Cost Category
SCIL	*Safety Certifiable Item List*
SIST	Simulated Integrated System Testing
SIT	*Systems Integration Plan*
SOP	*Standard Operating Procedure*
SSCP	*Safety and Security Certification PLan*
SSCVR	*Safety and Security Certification Verification Report*
SSMP	*Safety and Security Management Plan*
SSO	*State Safety Oversight*
SSPP	*System Safety Program Plan*
SWO	Stop Work Order
TBD	To Be Determined
TPS	Traction Power Substation
TVA	*Threat and Vulnerability Analysis*
TWG	Task Working Group

ATTACHMENT B – SAFETY AND SECURITY CHECKLIST

The PMOC notes that the Federal Railroad Administration provides safety oversight of LIRR, the operator of ESA. A different checklist may be appropriate.

Project Overview			
Project Mode (Rail, Bus, BRT, Multimode)	Commuter Rail		
Project Phase (Project Development, Engineering, Construction, Start-Up)	Construction		
Project Delivery Method (Design/Build, DBOM, CMGC, etc.)	Design/Bid/Build		
Project Plans	**Version**	**Review by FTA**	**Status**
Safety and Security Management Plan (SSMP)	TBD		
Safety and Security Certification Plan (SSCP)	TBD		
System Safety Program Plan (SSPP)	TBD		
System Security Plan or Security and Emergency Preparedness Plan (SEPP)	TBD		
Construction Safety and Security Plan (CSSP)	TBD		

Area of Focus	**Y/N**	**Notes/Status**
Safety and Security Authority		
Is the project sponsor subject to 49 CFR Part 659 state safety oversight requirements?	N	Project is subject to Federal Railroad Administration (FRA) jurisdiction.
Has the state designated an oversight agency as per Part 659.9?	Y	
Has the oversight agency reviewed and approved the project sponsor's Security Plan or SSPP as per 49 CFR Part 659.17?	NA	
Did the oversight agency participate in the last Quarterly Program Review Meeting?	NA	
Has the project sponsor submitted its safety certification plan to the oversight agency?	TBD	
Has the project sponsor implemented security directives issues by the Department Homeland Security and/or Transportation Security Administration?	TBD	
SSMP Monitoring		
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	TBD	
Does the project sponsor review the SSMP and related project plans to determine if updates are necessary?	TBD	
Does the project sponsor implement a process through which the Designated Function (DF) for Safety and DF for Security are integrated into the overall project management team? Please specify.	TBD	
Does the project sponsor maintain a regularly scheduled report on the status of safety and security activities?	TBD	
Has the project sponsor established staffing requirements, procedures, and authority for safety and security activities throughout all project phases?	Y	
Does the project sponsor update the safety and security responsibility matrix/organizational chart as necessary?	TBD	
Has the project sponsor allocated sufficient resources to oversee or carry out safety and security activities?	TBD	
Has the project sponsor developed hazard and vulnerability analysis techniques, including specific types of analysis to be performed during different project phases?	TBD	

Does the project sponsor implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities?	TBD	
Area of Focus	**Y/N**	**Notes/Status**
Does the project sponsor monitor the progress of safety and security activities throughout all project phases? Please describe briefly.	TBD	
Does the project sponsor ensure the conduct of preliminary hazard and vulnerability analyses? Please specify analyses conducted.	TBD	
Has the project sponsor ensured the development of safety design criteria?	Y	
Has the project sponsor ensured the development of security design criteria?	Y	
Has the project sponsor ensured conformance with safety and security requirements in design?	Y	
Has the project sponsor verified construction specifications conformance?	Y	
Has the project sponsor identified safety and security critical tests to be performed prior to passenger operations?	Y	Comprehensive Test Plan being updated to include signaling and other rail systems.
Has the project sponsor verified conformance with safety and security requirements during testing, inspection, and start-up phases?	NA	Testing is underway.
Does the project sponsor evaluate change orders, design waivers, or test variances for potential hazards and/or vulnerabilities?	TBD	
Has the project sponsor ensured the performance of safety and security analyses for proposed workarounds?	NA	No workarounds currently proposed.
Has the project sponsor demonstrated through meetings or other methods, the integration of safety and security in the following? • Activation Plan and Procedures • Integrated Test Plan and Procedures • Operations and Maintenance Plan • Emergency Operations Plan	Y	
Has the project sponsor issued final safety and security certification?	NA	Construction still underway. Testing is started. RSD in 2022.
Has the project sponsor issued the final safety and security verification report?	NA	RSD in 2022.
Construction Safety		
Does the project sponsor have a documented/implemented Contractor Safety Program with which it expects to comply?	Y	
Does the project sponsor's contractor(s) have a documented companywide safety and security program plan?	TBD	
Does the project sponsor's contractor(s) have a site-specific safety and security program plan?	Y	
How do the project sponsor's OSHA statistics compare to the national average for the same type of work?		ESA Lost Time and Recordable Incident Rates are above national standards.
If the comparison is not favorable, what actions are being taken by the project sponsor to improve its safety record?		
Federal Railroad Administration		
If shared track, has the project sponsor submitted its waiver request application to FRA? (Please identify	NA	No shared track. Project is FRA compliant.

specific regulations for which waivers are being requested.)		
Area of Focus	**Y/N**	**Notes/Status**
If shared corridor: has the project sponsor specified specific measures to address shared corridor safety concerns?	NA	This is not a shared corridor.
Is the Collision Hazard Analysis underway?	TBD	
Other FRA required Hazard Analysis – Fencing, etc.?	TBD	
Does the project have Quiet Zones?	N	
Does FRA attend the Quarterly Review Meetings?	N	

ATTACHMENT C – TOP 5 PROJECT RISKS

1. Delays Due to Late Integration of PTC
2. Delays Due to JPMC Redevelopment at 270 Park Avenue
3. Delays Due to Late Systems Design and Integrated Testing
4. Delays Due to 2020 COVID-19 Pandemic Impacts
5. Delays in Completing LIRR Testing, Commissioning, and Pre-revenue Service

ATTACHMENT D – AWARDED CONTRACTS

Project Description/Contractor	Original Contract Award	Current Value	Invoiced	Forecast	Notice to Proceed (NTP)	Forecast Substantial Completion
ACTIVE CONSTRUCTION CONTRACTS SUMMARY ($ IN MILLIONS)						
Manhattan						
CM007 - GCT Caverns Tutor Perini Corporation	$663.1	*$687.0*	*$620.9*	*$706.4*	4/11/2016	*12/21/2020*
CM014B - GCT Concourse and Facilities Fit-Out GCT Constructors JV	$404.6	*$542.6*	*$483.9*	*$558.9*	2/2/2015	*3/26/2021*
VM014 - Vertical Circulation (Escalators & Elevators) Schindler Elevator Corp.	$24.1	*$37.6*	$32.4	*$52.6*	9/23/2010	3/23/2020
FMM19 - Manhattan Force Account Support MNR	$31.1	$59.4	*$58.6*	$72.5	9/5/2011	5/23/2022
Queens						
CQ033 - Mid-Day Storage Yard Tutor Perini Corporation	$291.5	*$328.9*	*$302.3*	*$340.9*	4/11/2017	4/26/2021
VQ033- Mid-Day Storage Yard CILs Ansaldo STS USA, Inc. (ASTS)	$18.5	*$21.4*	*$20.3*	*$21.7*	1/19/2016	12/1/2020
Harold Interlocking						
CH058A: Harold Structures B/C Approach Skanska USA	$60.2	$83.0	*$74.1*	*$93.9*	12/7/2018	3/17/2021
FHA02 - Harold Early Stage 2 – Amtrak Force Account	$4.8	$62.3	$61.1	*$63.0*	12/15/2008	*1/30/2020*
FHL02 - Harold Early Stage 2 – LIRR Force Account	$48.2	$131.6	$127.1	$132.4	8/17/2009	8/30/2021
VHA02 - Procure Harold Material Stage 2 – Amtrak Force Account LIRR Procurement	$11.2	$14.5	$12.4	$14.8	6/17/2008	8/30/2021
VHL02 - Procure Harold Material Stage 2 – LIRR Procuremen	$23.2	$29.5	$29.2	$29.5	2/18/2009	4/15/2020
VH051 (Part 1) - Harold and Point CILs (ASTS)	$25.8	$29.8	$29.7	$30.2	5/11/2009	7/13/2021
Systems						
CS179 Systems Package 1 - Facilities Systems Tutor Perini Corporation	$333.6	*$715.9*	*$617.2*	*$765.5*	3/31/2014	*12/14/2021*
CS084 Tunnel Systems Package 4: Traction Power Systems E-J Electrical Installation Company	$71.2	*$88.4*	*$66.0*	*$101.8*	10/29/2014	*8/19/2021*
CS086 Tunnel Systems Package 2 - Signal Installation - Five Star/Comstock	$53.0	$53.5	*$26.4*	*$71.1*	9/21/2018	5/24/2021
VS086 - System Package 3- Signal Equipment Procurement ASTS	$20.8	$20.4	$18.4	$23.1	9/30/2014	3/31/2021

CONTRACT CLOSEOUTS SUMMARY ($ IN MILLIONS)

Project Description/Contractor	Original Contract Award	Final Value	NTP	Substantial Completion Date
Manhattan				
CM001 – Highbridge Yard Highbridge Yard Contractors	$80.1	$75.6	9/5/2001	12/4/2003
CM002 -- GCT Expansion Joint Replacement and Structural Closures J-Track LLC	$4.8	$4.1	5/9/2011	7/2/2012
CM008 -- Madison Yard Site Clearance Gramercy Group, Inc.	$40.9	$42.7	3/9/2009	4/10/2011
CM004 -- 44th Street Demolition and Construct Fan Plant Structure and 245 Park Avenue Entrance Yonkers Contracting Company, Inc.	$44.3	$55.5	9/15/2009	9/9/2014
CM005 – Manhattan South Structures - Michels Corporation	$200.6	$241.5	9/9/2013	4/22/2016
CM006 - Manhattan North structures Frontier Kemper Constructions Inc.	$316.3	$361.6	3/31/2014	3/1/2019
CM009 - Manhattan Tunnels Excavation Dragados/Judlau (DJ)	$449.4	$431.5	7/10/2006	9/30/2013
CM019 – Manhattan Structures Part 1 DJ	$756.0	$806.1	4/1/2008	5/31/2013
CM013 – 50th St. Vent Facility CCA Civil-Halmar International (CCA-HI)	$99.1	$97.4	1/4/2010	3/20/2014
CM013A -- 55th Street Vent Facility SCC-JPP,JV (Schiavone and Picone, JV)	$56.0	$58.9	9/4/2012	11/20/2015
CM014A - GCT Concourse & Facilities Fit-out and Early Work Yonkers Contracting Company	$43.5	$61.1	11/7/2011	3/16/2018
CM014MP -- Early Work for GCT and Facilities Fit-Out - The Urban Group, Ltd.	$2.0	$2.0	3/27/2013	12/23/2013
CM016 – Manhattan Approach Tunnels Excavation - Kiewit Constructors, Inc.	$11.8	$11.1	2/23/2004	8/18/2004
CM017 – GCT East Yard Remediation Tully Environmental Inc.	$2.2	$1.8	1/6/2003	9/26/2003
FMM02 – GCT East Yard Track & Signal Modifications MNR F/A	$58.7	$24.6	12/1/2002	12/31/2008
FM216 – MNR Traction Power MODs & 13.2KV Loop TC Electric	$14.5	$17.0	9/25/2008	6/30/2010
CS770 – GCT Flat Cars Procurement J-Track, LLC	$2.4	$2.3	11/17/2008	3/1/2009
CS780 – Madison Yard Preparation T. Moriarty and Sons, Inc.	$4.4	$4.9	5/14/2008	6/1/2009
CS790 – GCT Protection Works Ad-Tech Enterprises	$12.8	$13.0	10/23/2008	10/8/2010

Project Description/Contractor	Original Contract Award	Final Value	NTP	Substantial Completion Date
CS800 – GCT Instrumentation Wang Technology, LLC.	$7.1	$7.5	6/28/2008	9/1/2009
VM022 – MNR Locomotives Brookville Equipment Corp.	$5.8	$5.5	12/1/2002	5/11/2009
Queens				
CQ025 – Demolition of Superior Reed Building and Preparation of Yard A Tully Environmental, Inc.	$5.3	$5.6	11/5/2002	9/15/2003
CQ026 – Open Cut Excavation at Bellmouth Kiewit Construction, Inc.	$16.8	$18.7	10/7/2002	11/25/2003
CQ027 – Arch St. Yard and Shop Facility Slattery Skanska/Edwards & Kelcey	$77.1	$77.1	7/9/2002	12/31/2004
CQ028 – Queens Open-Cut Excavation Pile Foundation Construction CC., Inc.	$121.5	$62.8	4/27/2006	5/30/2008
CQE28-01 – Emergency Work Civil/Structural - Railroad Construction Co., Inc.	$6.5	$8.0	6/1/2008	12/19/2009
CQE28-02 – Queens Emergency Work Environmental Consulting, Inc.	$8.8	$2.9	7/14/2008	12/30/2009
CQ031 -- Queens Bored Tunnels and Structures Granite-Traylor-Frontier Joint Venture	$756.8	$777.0	9/28/2009	11/18/2013
CQ032 - Plaza Substation and Queens Structures Tutor Perini Corporation	$162.1	$265.4	8/10/2011	3/1/2019
CQ039 -- Northern Boulevard Crossing Schiavone/Kiewit, a Joint Venture (SK)	$89.2	$102.4	2/3/2010	9/30/2013
CS810 – Queens Instrumentation Wang Technology	$3.0	$3.1	5/6/2009	9/30/2011
FQA36 – Arch Street Yard Access – Amtrak F/A	$3.8	$3.4	11/14/2004	6/23/2006
FQL36 – Arch Street Yard Access – LIRR F/A	$3.8	$4.9	11/14/2004	6/23/2006
FQL35 – Wood Interlocking – LIRR F/A	$26.9	$27.1	7/1/2005	11/21/2008
Harold Interlocking				
VH055 – Switch Exchange System (Procurement) Plasser American Corp.	$17.7	$17.2	12/20/2002	9/30/2005
VHA01 – Procure Harold Materials – Stage 1 –Amtrak Various	$5.1	$5.1	6/6/2006	9/1/2009
VHL01 – Procure Harold Materials – Stage 1 – LIRR Various	$8.3	$8.3	6/26/2007	9/1/2009
CS099 – Advanced Procurement of Third-Party Materials – Various	$37.9	$16.6	3/1/2010	3/31/2011
FHA62– F Interlocking CIH Amtrak Force Account	$8.2	$8.2	9/11/2008	8/15/2011
VH051 (Part 2) - Harold Tower Supervisory Control System ARINC, Inc.	$7.1	$9.7	2/3/2009	1/31/2015

Project Description/Contractor	Original Contract Award	Final Value	NTP	Substantial Completion Date
CH054A - Harold Structures Part 2A Perini Corp.	$21.8	$61.1	8/24/2009	11/25/2015
CH053 - Harold Structures Part 1 and G02 Substation – Perini Corp.	$136.9	$309.5	1/1/2008	2/29/2016
FHL01 - Harold Stage 1 – LIRR Force Account	$20.8	$34.6	6/29/2007	5/30/2020
CH057B --On-Call Track Construction	$1.0	$0.9	5/19/2014	8/30/2014
CH057C – Harold Track Work – 48th Street Bridge and Retaining Wall Railroad Construction Company	$2.4	$3.0	7/14/2014	2/18/2016
CH057A - Harold Structures Part 3A Harold Structures Joint Venture	$104.3	$88.3	12/2/2013	11/17/2017
FHA01 - Harold Stage 1 – Amtrak Force Account	$9.5	$18.8	6/30/2017	11/30/2018
CH057 - Harold Structures Part 3 Tutor Perini Corporation	$53.4	$89.9	9/28/2009	6/30/2017
CH057D - Harold Structures Part 3 Railroad Construction Co.	$19.2	$29.6	2/4/2016	3/10/2019
CH061A: Track A Cut and Cover Structure Michels Corporation	$42.0	$39.3	1/27/2017	8/16/2018

CONSULTANT AND FORCE ACCOUNT CONTRACTS

Description/Entity	Original Contract Award	Invoiced	Committed
EIS & Engineering/Design			
D0100 - Tunnel Engineering Consultant	$128.7	$128.7	$128.6
D0200 - Systems Engineering Consultant	$111.7	$111.7	$111.7
D0300 - Highbridge C&S Node House Designer	$0.0	$0.0	$0.0
D0400 - Fiber Optic Network Design	$0.4	$0.4	$0.4
D0600 - General Engineering Consultant	$529.5	*$504.7*	*$542.2*
D0700 - Railware Inc.	$0.1	$0.1	$0.1
D0900 - Yale Club	$0.2	$0.2	$0.2
EIS & Engineering/Environmental			
E0100 - Environmental Consultant	$4.6	$4.6	$4.6
EIS & Engineering/Force Account			
Amtrak			
FA54A - Harold Structures Part 2A: Amtrak	$9.9	$9.9	$9.9
FA57B - On-Call Trackwork F/A: Amtrak	$0.3	$0.3	$0.3
FA57C - Harold Track work 48th St. Bridge	$0.5	$0.5	$0.5
FA57D - Harold Trackwork Part 3 - Amtrak	$0.8	$0.8	$0.9
FA58A - Harold Structures Part 4 - Amtrak	$2.9	$2.5	$2.9
FH999 - Alignment Rev 14 - 4M: FA	$37.3	$37.3	$37.3

Description/Entity	Original Contract Award	Invoiced	Committed
FHA01 - Harold Stage 1: Amtrak	$18.6	$18.6	$18.8
FHA02 - Harold Stage 2: Amtrak	$54.7	$54.3	$54.7
FHA03 - Harold Stage 3: Amtrak	$10.2	$11.4	$10.4
FHA53 - Harold Structures Part I: Amtrak	$31.7	$31.7	$0.0
FHA57 - Harold Structures Part 3: Amtrak	$2.5	$2.5	$2.5
FHA61 - Harold Tunnel A and D Construction	$3.6	$3.6	$4.9
FHA62 - F Interlocking CILs	$7.1	$7.0	$8.2
FMA07 - GCT Caverns - Amtrak F/A	$0.6	$0.1	$0.6
FQA25 - S. Reed Demo & Yard Prep: Amtrak	$0.0	$0.0	$0.0
FQA28 - Open Cut, Struc. N Blvd-Yd: Amtrak	$2.8	$2.8	$2.8
FQA31 - Queens Tunnels & Structure Amtrak	$18.8	$18.8	$0.0
FQA32 - Plaza Substation & Queens Structure	$0.5	$0.5	$0.0
FQA33 - Midday Storage Yard: Amtrak	$9.8	$9.7	$9.8
FQA36 - Arch Street Yard Conn: Amtrak	$3.4	$3.4	$3.4
FQA99 - Amtrak Systemwide Flagging	$0.0	$0.0	$61.9
FSA79 - Power, Signaling, Communications	$0.3	$0.0	$0.3
VH067 - Amtrak Equipment	$1.5	$1.5	$1.5
VHA01 - Procure Hrld Mat'ls Stage 1-Amtrak	$4.6	$4.6	$4.8
VHA02 - Procure Hrld Mat'ls Stage 2-Amtrak	$14.5	$12.4	$14.5
VHA63 - Track Work Procurement for CH063	$0.0	$0.0	$2.8
Long Island Railroad			
FHL01 - Harold Stage 1: LIRR	$32.8	$30.3	$34.0
FHL02 - Harold Stage 2: LIRR	$116.7	$112.0	$116.7
FHL03 - Harold Stage 3: LIRR	$21.3	$15.9	$22.2
FHL04 - Harold Stage 4: LIRR	$11.3	$6.8	$11.3
FHL51 - Harold and Point CILs, HTSCS:LIRR	$4.7	$4.3	$4.7
FHL53 - Harold Structures Part I: LIRR	$30.3	$30.3	$0.0
FHL57 - Harold Structures Part 3: LIRR	$8.6	$8.6	$8.6
FHL61 - Harold Tunnel A and D Construction	$6.6	$6.6	$6.6
FL54A - Harold Structures Part 2A: LIRR	$1.8	$1.8	$0.0
FL57A - Westbound Bypass F/A: LIRR	$3.5	$3.5	$3.5
FL57B - On-Call Trackwork F/A: LIRR	$0.4	$0.4	$0.0
FL57C - Harold Track work 48th St. Bridge	$0.6	$0.6	$0.0
FL57D - Harold Trackwork Part 3 - LIRR	$4.2	$4.1	$4.3

Description/Entity	Original Contract Award	Invoiced	Committed
FL58A - Harold Structures Part 4 - LIRR	$11.5	$9.5	$11.5
FQL27 - Arch St. Yard & Shop: LIRR	$0.5	$0.5	$0.5
FQL28 - Open Cut, Struc. N Blvd-Yd: LIRR	$0.1	$0.1	$0.1
FQL31 - Queens Tunnels & Struct: LIRR	$6.6	$6.6	$0.0
FQL33 - Midday Storage Yard: LIRR	$13.0	$11.6	$13.0
FQL35 - Wood Interlocking: LIRR	$27.1	$27.1	$27.1
FQL36 - Arch Street Yard Conn: LIRR	$4.9	$4.9	$4.9
FQL99 - LIRR Systemwide Flagging	$0.0	$0.0	$39.6
FS099 - Force Account Support	$18.4	$15.2	$18.4
FSL00 - FA System Testing & Comm.	$6.6	$4.4	$6.6
FSL79 - Power, Signaling, Communications	$1.8	$0.1	$1.8
VH055 - Procure Switch & Panel Exch System	$17.2	$17.2	$17.2
VHA51 - Harold and Point CILs	$29.4	$29.3	$29.8
VHB51 - HTSCS	$7.7	$7.7	$7.7
VHB52 - HTSCS - On Call Maintenance	$0.2	$0.2	$0.5
VHC51 - 250 Hz Track Circuits	$14.8	$5.9	$15.1
VHL01 - Procure Hrld Mat'ls Stage 1-LIRR	$8.3	$8.3	$8.3
VHL02 - Procure Hrld Mat'ls Stage 2-LIRR	$29.5	$29.2	$29.5
VHL03 - Procure Hrld Mat'ls Stage 3-LIRR	$17.0	$12.9	$17.0
VHL04 - Procure Hrld Mat'ls Stage 4-LIRR	$5.3	$2.7	$5.3
VQ066 - Force Account Warehouse	$17.6	$16.6	$19.0
Metro North			
FMM01 - Highbridge Yard: MNR	$5.9	$5.9	$5.9
FMM02 - GCT East Yard Track & System Mods	$24.6	$24.6	$24.6
FMM09 - Manhattan Tunnels Excav: MNR	$1.6	$1.6	$1.6
FMM17 - GCT East Yard Abatement: MNR	$0.5	$0.5	$0.5
FMM19 - MH Structures Part I : MNR	$57.5	$57.5	$60.1
NYAR			
FMN16 - MH Approach Tunnel F/A: NYAR	$0.0	$0.0	$0.0
FQN25 - S.Reed Demo & Yard Prep: NYAR	$0.1	$0.1	$0.1
FQN27 - Arch St. Yard & Shop: NYAR	$0.2	$0.2	$0.2
FQN28 - Open Cut, Struc. N Blvd-Yd: NYAR	$0.0	$0.0	$0.0
FQN36 - Arch Street Yard Connection: NYAR	$0.0	$0.0	$0.0
FSN86 - Systemwide NYAR Flagging	$0.7	$0.4	$0.7

Description/Entity	Original Contract Award	Invoiced	Committed
NYCT			
FMT09 - Manhattan Tunnels Excav: NYCT	$0.4	$0.4	$0.4
FMT16 - MH Approach Tunnels Exc.: NYCT	$0.0	$0.0	$0.0
FMT19 - MH Structures Part I : NYCT	$0.0	$0.0	$0.0
FQT26 - Open Cut at Xtg. Bellmouth: NYCT	$0.1	$0.1	$0.1
FQT28 - Open Cut, Struc. N Blvd-Yd: NYCT	$0.1	$0.1	$0.1
FQT39 - Northern Blvd Crossing - NYCT	$0.2	$0.2	$0.2
FST99 - NYCT Force Account	$1.4	$1.1	$1.6
General Conditions			
SS128 - RCC Railroad Emergency Contract	$8.0	$8.0	$8.0
SS228 - Impact Emergency Contract	$3.0	$3.0	$3.0
SS770 - Rolling Stock	$2.3	$2.3	$2.3
SS780 - Madison Yard Preparation	$4.9	$4.9	$4.9
SS790 - GCT Protective Works	$11.8	$11.8	$11.8
SS800 - GCT Instrumentation	$7.5	$7.5	$7.5
SS810 - Queens Instrumentation	$3.0	$3.0	$3.0
SS840 - Subsurface Utility Engineering	$4.4	$4.4	$4.4
SS897 - General Conditions	$150.4	$142.5	$151.0
VM024 - Switchgear Procurement	$0.6	$0.0	$0.6
Construction Management			
SC800 - Construction Management by PMC	$309.8	$300.7	$311.8
SH800 - LIRR Operating Support Services	$49.5	*$48.6*	$52.0
SHA00 - Amtrak Operating Support Services	$12.6	$12.1	$12.6
SM801 - CM: Highbridge D/B	$3.5	$3.5	$3.5
SP819 - Consultant Const Mgmt Services	$207.1	$185.7	$208.7
SQ825 - CM: NYCT et al (CQ025/026/028)	$5.0	$5.0	$5.0
SQ827 - CM: Arch Street MF D/B	$2.1	$2.1	$2.1
SQL27 - CM: Arch Street Yard (LIRR)	$1.5	$1.5	$1.5
SS896 - CM Office Costs	$11.7	$11.3	$12.4
SS901 - CMG & PMO	$0.0	$0.0	$0.0
Program Management			
P0100 - Program Management Consultant	$277.9	*$270.5*	$279.3
P0900 - Metropolitan Transportation Auth.	$154.6	*$145.4*	$163.8
Rolling Stock			
T0109 - Protect Locomotive	$2.8	$0.4	$3.3
T0900 – Rollin Stock	$0.0	$0.0	$0.0

ATTACHMENT E – ROLLING STOCK VEHICLE STATUS REPORT

- 160 Electric Multiple Unit (EMU) Railcars Required for Full ESA Operation
- M9A Railcars – Request for Proposal (RFP) Issued December 2017, award forecast late 2020, delivery will occur after ESA RSD
- Interim Fleet Plan for RSD under development. Revised Service Plan with fleet requirements expected in 4th Quarter 2020
- MTA Considering Exercising Option for M9 Contract
    - Base Contract – Kawasaki Heavy Industries
        - 92 EMUs
        - Advertised – 2012
        - Award September 18, 2013
        - Price per Vehicle – $4.27 million
        - First Vehicle Delivery – mid-2018
        - First eight-car train entered service September 11, 2019
        - Number of Option Vehicles Included in Contract – up to 584 cars
        - Option for 54 M9 Cars under consideration for ESA
        - Buy America Domestic Content Percentage Required – 60%

ATTACHMENT F – PROJECT MILESTONES/KEY EVENTS

East Side Access Project Milestone	Date Complete
FFGA	December 2006
Amended FFGA	October 2014
Construction Start	September 1, 2001 (A)
Manhattan Tunnels Complete	September 30, 2013 (A)
Queens Tunnels Complete	November 18, 2013 (A)
CM014B Handoff to CS179 for IIST	December 22, 2020 (P)
Mid-day Storage Yard Substantial Completion	*April 26, 2021 (P)*
Harold Interlocking Substantial Completion	June 29, 2021 (P)
Rail Systems Handoff to LIRR	*August 18, 2021 (P)*
Facility Systems Handoff to LIRR	December 13, 2021 (P)
LIRR Testing and Commissioning Complete	April 14, 2021 (P)
Target RSD	June 9, 2022 (P)
Public RSD	December 13, 2022 (P)
FFGA RSD	December 2023 (P)

(A) Actual, (P) Planned

ATTACHMENT G – ROADMAP TO REVENUE OPERATIONS

The PMOC will populate the Roadmap to Revenue Service in future monthly reports.

Description	Responsible Party	Status	Estimated Start Date	Estimated Completion Date	Actual Completion Date	Notes
Testing						
Finalize Comprehensive System Test Plan (CSTP)	TBD	Current Plan dated 2018	Underway	TBD	TBD	Current plan does not reflect Incremental Integrated System Testing. No testing plan for signal system and PTC.
Finalize / update Systems Integration Test (SIT) Plan	TBD	Part of CSTP	NA	NA	NA	
Develop Testing Schedule and Monitoring Tools	MTA C&D/ LIRR	Underway	TBD	TBD	TBD	CSTP required for schedule.
Develop Operating Rules for Testing	OpR	Underway	Started	TBD	TBD	Final operating rules are dependent on completion of the updated Comprehensive Test Plan.
Conduct System Integrated Testing - Building Systems	CS179		7/1/2020	12/13/2021	TBD	
Conduct System Integrated Testing - Train Systems	CS179/CS086		4/26/2021	*8/18/2021*	TBD	
Conduct LIRR Testing and Commissioning - Train Systems	LIRR		*8/18/2021*	4/14/2022	TBD	
Conduct LIRR Testing and Commissioning - Building/Facility Systems	LIRR		12/22/2021	4/14/2022	TBD	
Certificates of Occupancy / Substantial Completion						

Description	Responsible Party	Status	Estimated Start Date	Estimated Completion Date	Actual Completion Date	Notes
Operating Plan, Rules						
Finalize Operating Plan	OpR	Underway	Started	12/1/2020	TBD	
Finalize / revise Standard Operating Procedures (SOPs), manuals and rulebook as applicable	OpR	Underway	Started	TBD	TBD	
Complete Staffing Plan	OpR	Underway	Started	10/1/2020	TBD	
Obtain Required Staff	LIRR	Future	TBD	TBD	TBD	
Training of Operations and Maintenance (O&M) personnel	LIRR	Future	9/1/2021	*4/14/2022*	TBD	
Emergency response plan, training and drills	OpR	Underway	Started	TBD	TBD	
Maintenance and Asset Management						
Pre-Revenue Operations						
Finalize and/or update Rail Activation Plan (RAP) and/or Pre-Revenue Operations Plan	OpR	Underway	Started	10/1/2020	TBD	
Implement Rail Activation Committee		Completed				
Develop / revise System Safety Program Plan (SSPP) & Security Plan (approved by State Safety Oversight (SSO))	NA	NA	NA	NA	NA	LIRR subject to FRA oversight, not SSO.
FTA Office of Safety & Security Readiness Review	FRA	Future	TBD	TBD	TBD	FRA responsible for safety oversight.

Description	Responsible Party	Status	Estimated Start Date	Estimated Completion Date	Actual Completion Date	Notes
PMOC OP-54 Readiness for Revenue Operations Review Report, Phase I	PMOC	Future	6/9/2021	3/11/2022	TBD	Start one year before planned RSD. Complete 90 days before RSD.
PMOC OP-54 Readiness for Revenue Operations Review Report, Phase II	PMOC	Future				
Conduct Operational Hazard Analysis (OHA) and resolve other hazards / vulnerabilities	OpR	Underway				Hazard log has been developed.
Pre-Revenue Operations	LIRR	Future	TBD	TBD	TBD	
Public Outreach						
Develop Safety Outreach Plan	TBD	TBD	TBD	TBD	TBD	Public outreach status report does not address safety outreach.
Provide Community Outreach	TBD	Underway	Started	TBD	TBD	Planning meeting held July 2020 to initiate outreach plans.
Public Timetables/Maps/Website Updates, etc.	TBD	TBD	TBD	TBD	TBD	Final service plan must be completed.
Grand Opening Plan	TBD	TBD	TBD	TBD	TBD	
Safety, Security, and Fire-life Safety Certifications						
Update / Finalize Safety and Security Management Plan (SSMP)	TBD					
Finalize and/or update Safety Certifiable Item List (SCIL) and Safety and Security Certification Program (SSCP)	TBD					
Implement Safety and Security Certification Committee	OpR	Underway	Started	TBD	TBD	Certification process is underway.

Description	Responsible Party	Status	Estimated Start Date	Estimated Completion Date	Actual Completion Date	Notes
Implement Fire Life Safety Committee	OpR	Underway	Started			White paper prepared to address committee responsibilities.
Verify design criteria, Preliminary Hazard Analysis (PHA), Threat and Vulnerability Analysis (TVA), change orders are implemented within the project	Safety/Security Cert. Comm.	Underway	Underway			
Review status of quality non-conformances	MTA C&D	Underway	Underway	8/18/2022		Substantial completion date of CS179.
Close-out of non-safety critical items / non-conformances	MTA C&D			4/14/2022		8 weeks prior to target RSD.
Close-out of safety critical items / nonconformances	MTA C&D			4/14/2022		8 weeks prior to target RSD.
Complete Safety & Security Certification Verification Report (SSCVR)	MTA C&D			4/10/2022		60 days before RSD.
Document Workarounds / Open Items List	MTA C&D					
Verify emergency drills, tabletops, training, etc. are completed	TBD					
SSO final certification / signature	NA					FRA has safety oversight responsibility.
Revenue Service						
Target Revenue Service Date GL			-	6/9/2022	TBD	

Description	Responsible Party	Status	Estimated Start Date	Estimated Completion Date	Actual Completion Date	Notes
Public RSD				12/23/2022	TBD	
FFGA Revenue Service Date			-	12/26/2023	TBD	

ATTACHMENT H – PROJECT MAP