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August 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 project efficiently and effectively, and hence, whether the Project Sponsor continues to be ready to receive federal funds for further project development. This report covers the project management activities on the East Side Access (ESA) Mega-Project managed by MTA 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 *Second Quarter 2020 Progress Report (QPR)*, 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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This report and all subsidiary reports are prepared solely for the FTA. This report should not be relied upon by any party, except the FTA or the Project Sponsor, in accordance with the purposes as described below.

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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) is now June 9, 2022, 17 days later than forecast last month.* The public RSD remained December 13, 2022, providing 187 days of float to the public RSD. The required RSD in the FFGA is December 31, 2023.
- Cost: The forecast project cost is unchanged at \$11.13 billion. Invoiced cost through June 30, 2020 was \$9.41 billion. b(4)
- Heavy civil construction and systems installation for buildings and other facilities is nearing 90% complete. The traction power system is over 70% complete, and the rail signaling system is less than 50% complete. Local testing is underway for the building and facilities systems but is trending about 2 months late. 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 forecast completion date is 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 MTAC&D states that the contractor intends to complete it in December.

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. <i>The latest incomplete draft of the Comprehensive Test Plan (CTP) was prepared 3 years ago and does not reflect the current approach to PTC integration nor the IIST approach.</i>
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. The latest forecast indicates that the revised work sequence will be included in the IPS data date 8/1/2020. The PMOC is following up on MTA C&D's plans for completing the CTP.
PMOC Recommendation	<i>A complete CTP 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.</i>
Issue/Concern	<i>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.</i>
Date Identified	<i>Current.</i>
Status	<i>Ongoing.</i>
Project Sponsor Action	<i>MTA C&D is attempting to adjust the work schedule to avoid delays that impact the critical path.</i>
PMOC Recommendation	<i>MTA C&D should update the CTP 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.</i>

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	<i>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 6 months (December 2021 to June 2020) for LIRR testing and commissioning of building and facilities systems, which may be optimistic. The schedule provides about 11 months for track and related systems testing and commissioning, which also may be optimistic.</i>
Date Identified	<i>Current.</i>
Status	<i>Ongoing.</i>
Project Sponsor Action	<i>The ESA Operational Readiness Group (OpR) develops the Rail Activation Plan (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.</i>
PMOC Recommendation	<i>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.</i>
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	<i>The OpR is actively updating the RAP, including preparation of a detailed staffing plan for takeover of the project, but has not disclosed any plans to update the PMP.</i>
PMOC Recommendation	<i>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.</i>

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		●		●	<i>An updated CTP and Schedule is needed. LIRR may be challenged in providing resources for testing and commissioning.</i>
Cost*	●			●	None.
Schedule		●		●	<i>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. These may impact overall completion dates.</i>
Quality	●			●	None.
Safety		●		●	<i>ESA exceeds industry standards for Lost Time and Recordable Incidents.</i>
Risk		●		●	Several significant schedule risks may cause a delay to RSD.
Legend					
Green	<i>Satisfactory: no Corrective Action necessary</i>				
Yellow	<i>Caution: Risk/Issues exist. Corrective Action may be necessary</i>				
Red	<i>Elevated for immediate Corrective Action: significant risk to the health of the project</i>				

*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 Forecast¹
Cost	Capital Cost Estimate	\$10.92 billion	\$11.13 billion	Acceptable
Contingency²	Unallocated Contingency	b(4)	b(4)	b(4)
	Allocated Contingency	b(4)	b(4)	b(4)
	Total Contingency	b(4)	b(4)	b(4)
Schedule	Revenue Service Date	12/31/2023	6/9/2022	Optimistic
Project Progress			Amount (\$)	Percent of Total
Total Expenditures¹	Actual invoiced amounts, not including finance costs.		\$9.456 billion	85.0%
Planned Cost to Date²			\$9.675 billion	86.9%
Contract Status			Amount (\$)	Percent of Total
Total Contracts Awarded¹	Value of all contracts (design, support, construction, equipment) awarded; % of total value to be awarded.		\$9.907 billion	89.2%
Construction Contracts Awarded¹	Value of construction contracts awarded; % of total construction value to be awarded.		\$7.551 billion	94.1%
Physical Construction Completed¹	Value of physical construction (infrastructure) completed; % of total construction value completed.		\$7.189 billion	90.0%
Rolling Stock Vehicle Status	Date Awarded	No. Ordered	No. Delivered	
<i>M9A</i>	TBD	TBD	TBD	
Support Vehicles	TBD	5	TBD	
Next Quarterly Review Meeting Date:		To be determined		

1. source: *PCM Total Cost Report by Contract*, July 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
- 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 QPR 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 been working on updates to the RAP and is working on updates to the Service Plan and Rail Fleet Management Plan (RFMP) for the project. *Key elements of the RAP, including the CTP are pending. A completed CTP is required to confirm the schedule for testing and commissioning of the project.* MTA C&D issued updated drafts for the Cost Management Plan, Schedule Management Plan, and Risk Management Plan in December 2018, the Contract Packaging Plan in January 2019, as well as the MCC Plan. 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 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 CTP needs to be completed to guide the completion of testing and commissioning.*

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 issues have been identified. MTAC&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 Second Quarter 2020 Progress Report (Q2QPR) reported the overall engineering effort at 89.4% 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; only 8 have received FD approval certification from LIRR. The FD of all 10 of the Control Systems being provided under the CS179 contract are, as of the end of August 2020, 52 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: Negotiation of this contract is in the final stages, with award planned by the end of September 2020. This is the final third-party contract for ESA construction.

2.9. Construction

The ESA Q2QPR states that the total construction progress reached *89.2% completion compared to planned 91.9% completion*. The ESA construction progress during *August 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 is continuing. MTA C&D is working with LIRR to reconcile the issues with the remaining non-conforming monuments. *The pre-functional testing phase of the systems and MEP equipment is ongoing.* 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. *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, is *running behind schedule and was delayed 4 months from its original start date. MTA C&D directed JPMC to increase the number of drill rigs 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.*
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. The delay in completion of the local testing of installed systems has further delayed the start 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 August 2020, the number of contractor submittals, Requests for Information (RFIs), and Field Change Requests (FCRs) awaiting MTA C&D responses was 737, 36, and 1, respectively. As of the end of August 2020, a significant number of MTA responses to submittals, RFIs, and FCRs continue to exceed the 30-day turnaround time stipulated in the contract, enabling 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 thru C07. MTA C&D gave the contractor a directive to furnish and install large-capacity dehumidifiers to assist in the "drying out" of the C03 TPS so that the required installation of a di-electric epoxy can be applied to the floor of the equipment room. 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 are now apparent. The water infiltration problem at the C08 substation remains unresolved and the contractor has asked the substation fabricator to propose a remediation method that will permanently eliminate the problem. Other field construction issues are being identified and associated remediation methodologies need to be identified to mitigate any further negative impact to the contractor's progress. Testing of traction power equipment is continuing at the C08 traction power substation in Queens. The schedule acceleration modification that was previously reported as being executed is, as of the end of August 2020, 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. 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, 7 days per week, to try and recover lost time. There still are several field conditions and issues that require mitigation and new issues related to the installation of fiber optic cables are apparent. At the August 2020 CS086 Monthly Progress meeting, the CS086 contractor announced that it was considering defaulting the Disadvantaged Business Enterprise (DBE) subcontractor, who has the responsibility to install the fiber optic cables, for non-performance of work. If that subcontractor is defaulted, the prime CS086 contractor will assume the work to install the fiber optic cable, which would reduce the DBE participation on this contract by approximately 33%. Issues have also been raised regarding water infiltration into, and possible damage of, track-side switch terminal boxes and switch machines. The CS086 contractor also reports that many remediation efforts by the CM007 contractor to repair non-compliant impedance bond track cutouts are still not compliant with LIRR specifications.

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	\$615.6	\$706.8	87.1%
CM014B	\$479.7	\$558.7	85.9%
VM014	\$32.4	\$53.7	60.3%
CQ033	\$296.9	\$341.9	86.8%
VQ033	\$20.1	\$21.8	92.2%
CS179	\$612.3	\$764.7	80.1%
CS084	\$64.0	\$101.5	63.0%
CS086	\$24.1	\$71.5	33.7%
VS086	\$18.4	\$23.1	79.7%
CH058A	\$70.7	\$90.1	78.5%

Note: Dollars in millions.

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

Work Package	Invoiced to Date	Estimate at Completion	Percent Invoiced
FMM19	\$58.5	\$72.5	80.7%
FHA02	\$61.1	\$62.2	98.2%
FHL02	\$127.1	\$132.4	96.0%
VHA02	\$12.4	\$14.8	83.8%
VHL02	\$29.2	\$29.5	99.0%
VH051	\$29.7	\$30.2	98.3%

Note: Dollars in millions.

2.10. Real Estate Acquisition and Relocation

MTA has acquired all project right-of-way, 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 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 less than the service level called for in the FFGA with the FTA due to factors including the effects of COVID-19 on ridership demand and agency revenues and the 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	June 30, 2020				Invoice % of Budget	Invoice % of 2014 Baseline
			Current Budget (interim)	Actual Awards	Invoiced Costs			
Construction	\$7,379.3	\$7,761.0	\$8,028.9	\$7,534.3	\$7,136.7	88.9%	96.7%	
Soft Cost Subtotal	\$1,975.4	\$2,296.7	\$2,474.0	\$2,233.8	\$2,138.2	86.3%	108.2%	
Engineering	\$720.6	\$841.1	\$877.0	\$812.7	\$780.5	89.0%	108.3%	
Owner Controlled Insurance Program	\$282.6	\$416.2	\$457.4	\$384.2	\$383.6	83.9%	135.7%	
Project Management	\$972.2	\$1,039.4	\$1,139.6	\$1,036.9	\$974.1	85.5%	100.2%	
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	\$11,333.3	\$9,890.9	\$9,408.3	83.0%	88.4%	

Note: Dollars in millions.

Table 6. Project Costs by SCC

SCC	FFGA	Amended FFGA	June 30, 2020			
			Current Budget	Awarded Value	Paid to Date	Amended FFGA Remaining
10 - Guideway & Track Elements	\$1,989	\$3,353	\$3,505	\$3,377	\$3,201	\$152
20 - Stations, Stops, Terminals, Intermodal	\$1,169	\$2,327	\$2,487	\$2,329	\$2,141	\$186
30 - Support Facilities (Yards, Shops, Admin)	\$356	\$451	\$605	\$572	\$523	(\$72)
40 - Site Work and Special Conditions	\$205	\$562	\$556	\$495	\$513	\$49
50 - Systems	\$619	\$628	\$831	\$714	\$582	\$46
60 - Right of Way (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	\$2,234	\$2,132	(\$323)
90 - Unallocated Contingency	\$169	\$720	b(4)	--	--	■
Total (without finance)	\$6,350	\$10,922	\$11,133	\$9,891	\$9,254	\$1,668

Source: ESA SCC Cost by Source Updates, July 2020

■

b(4)

■

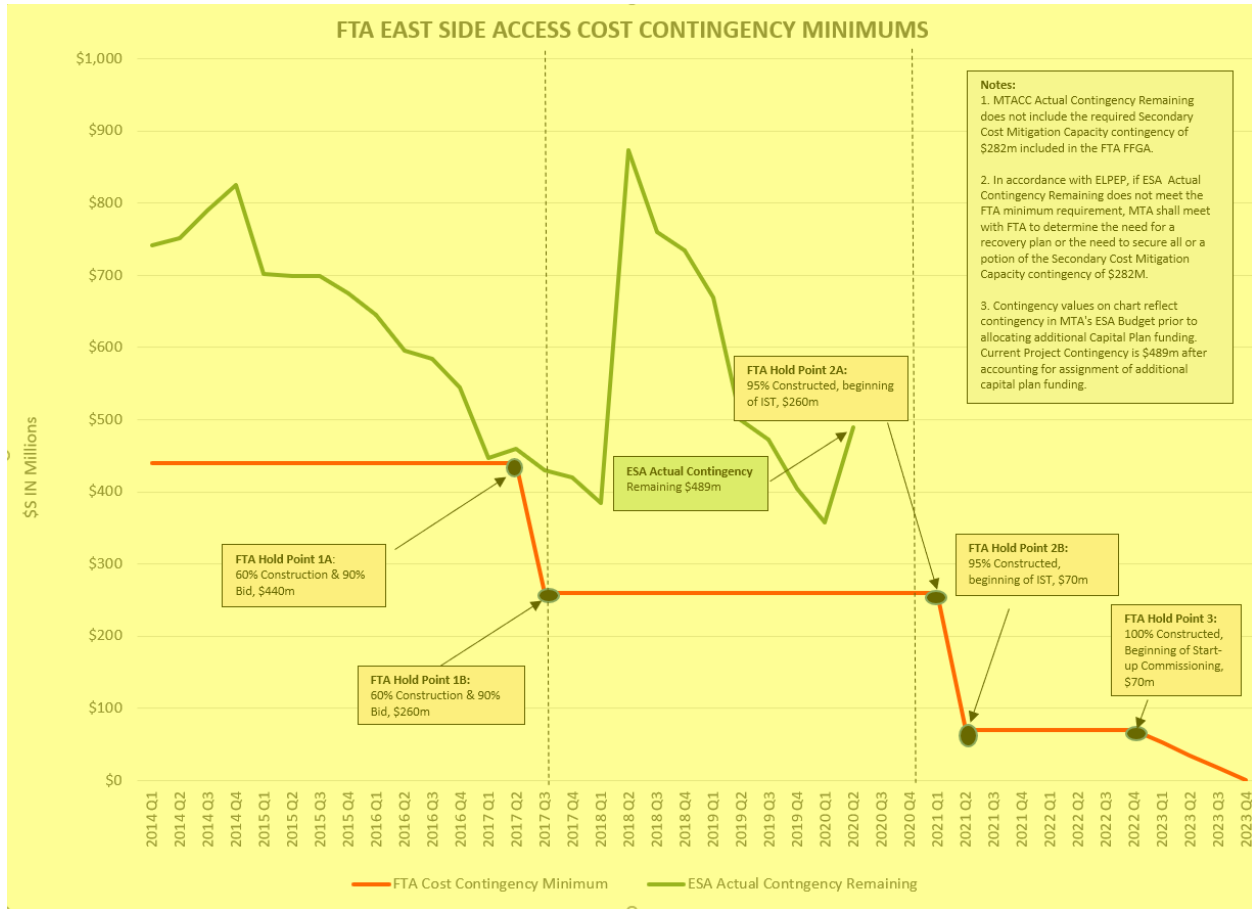
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Figure 1. FTA East Side Access Cost Contingency Minimums



2.14. Project Schedule

The schedule information in this report is based on schedule information provided in the ESA 2020 Q2QPR and IPS 129. The forecast for the Target RSD moved 17 days later than the May 2020 Monthly Progress Report (MPR) at June 9, 2022, and the Public RSD remained at December 13, 2022.

b(4)

The Manhattan/Systems path has no float and remains the critical path of the ESA project. 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 related traction power and train control systems are on or very near the project critical path.

Figure 2. FTA East Side Access Schedule Contingency Minimums

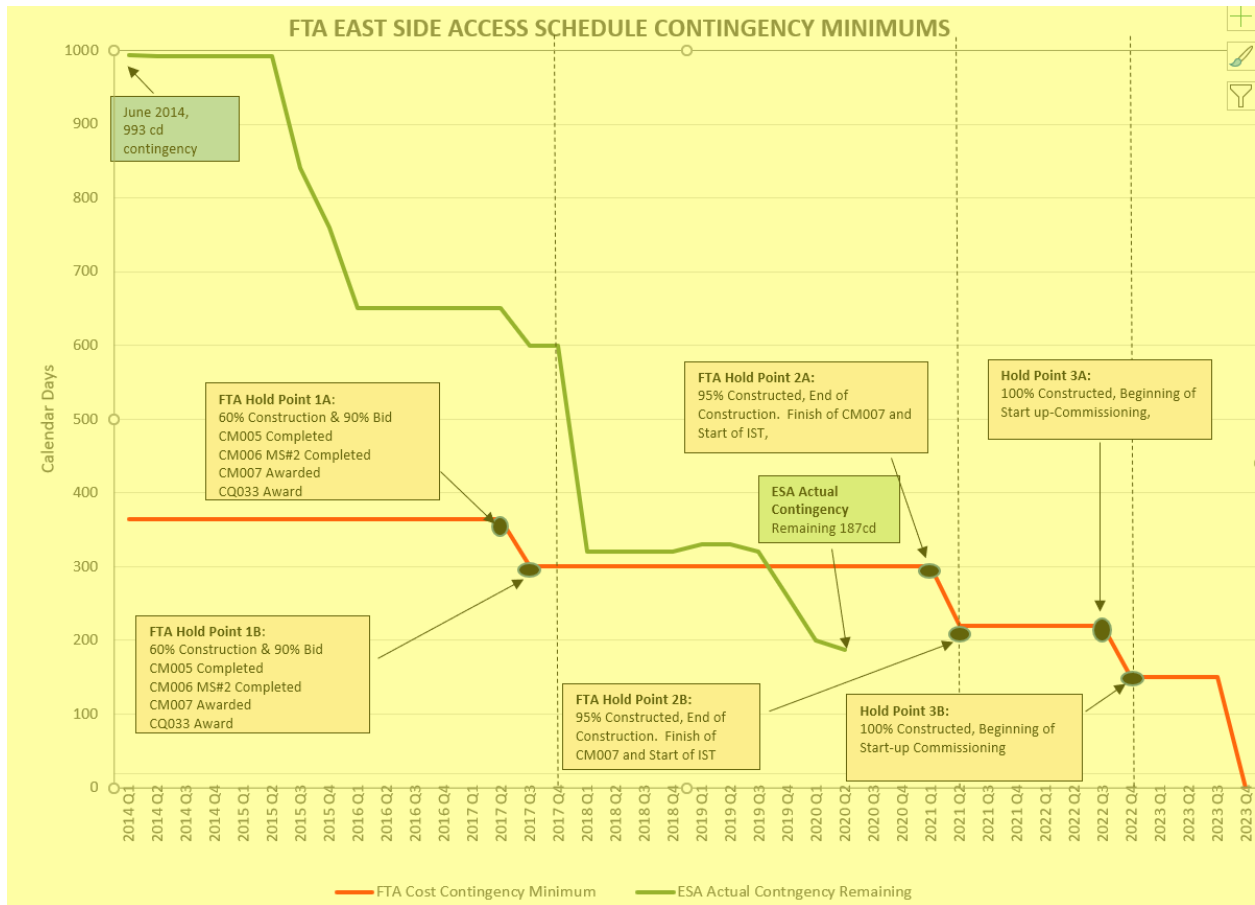


Table 7 shows dates, remaining durations, and contingencies for the Target, Public, and FFGA RSDs.

Table 7. Schedule Contingency (from ESA 2020 Q2QPR)

	Target RSD 5/23/2022	Public RSD 12/13/2022	FFGA RSD 12/31/2023
Target RSD Contingency			
Duration Remaining to Target RSD from 5/31/2020	██████	b(4)	██████
Remaining Target RSD Contingency	██████	██████	██████
Remaining IPS Contingency Percent	██████	██████	██████

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 May 2020 Revision.

Table 8. June 2020 IPS Key Milestones

Milestone	Finish Date
Mid-day Storage Yard Queens Substantial Completion	5/05/2021
Manhattan/Systems Track Substantial Completion	7/26/2021
Harold Interlocking Substantial Completion	6/28/2021
CS179 Systems Package 1 – Facilities Systems Substantial Completion	12/13/2021
CS179 Track IST Complete	7/26/2021
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. 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 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 6 months (December 2021 to June 2022) for LIRR testing and commissioning of building and facilities systems, which may be optimistic. The schedule provides about 11 months for track and related systems testing and commissioning, which also may be optimistic.

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 are not expected to be reflected 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 8 weeks behind schedule over a 2-month period. MTA C&D directed the developer to increase the number of available drill rigs and to work *around the clock*. *Recent progress indicates that the work continues to fall further behind schedule, and recovery of the accumulated 4 months of delays has not occurred. MTA has exercising additional rights under the Construction Agreement for 270 Park to recover the schedule delay.* MTA C&D has developed a Contingency Plan, as part of the Construction Agreement, which 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 provides 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** - *At the end of July 2020, MTA C&D reported that 9 of the 10 Control System FDs were completed. However, the PMOC notes that, as of the end of August 2020, LIRR has yet to provide its approval of the 9th system; and, until that is done, only 8 of the 10 Control Systems can be considered as complete and approved. The remaining Control System (Security) is still in the design stage with no date identified at this time for Factory Acceptance Testing (FAT). Details of the IIST plan are still being finalized and have not been integrated into the project schedule. The start of IIST continues to be delayed with the contractor indicating that the IIST start date will likely move beyond the previously anticipated September 2020 start date. The schedule indicates that 12 months is available for IIST; which may not be 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 Q12020, 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 6 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 11 months for LIRR testing, training, commissioning, and pre-revenue service for the tracks and related rail system components. 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 Q2QPR. 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 *July 2020*, the project had *no* recordable incident and no lost-time incidents based on 223,984 hours worked. The ESA project Injury Ratios were 1.60 for Lost Time Injuries (LTI) and 3.43 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 August 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-September 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 air conditioning equipment is pending.

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 6 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 July 26, 2021. The planned RSD provides about 11 months for LIRR testing, commissioning and start-up of rail systems.

An Operational Readiness team has been assigned and divided into 11 functional groups:

1. **ESA Rail Activation Plan.** An updated draft of the plan has been completed and circulated. The CTP needs to be completed.
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 Metro North RR.
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 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
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	MPR	Monthly Progress Report
BLS	Bureau of Labor Statistics	MTA	Metropolitan Transportation Authority
BOH	Back of House	MTA C&D	MTA Construction and Development
C&S	Communication and Signals	OpR	Operational Readiness Group
CAM	Car Appearance Maintenance	PMOC	Project Management Oversight Contractor (David Evans and Associates, Inc.)
CIL	Central Instrument Location	PMP	Project Management Plan
CTP	Comprehensive Test Plan	PTC	Positive Train Control
DBE	Disadvantaged Business Enterprise	Q	Quarter
EAC	Estimate at Completion	QPR	Quarterly Progress Report
ELPEP	Enterprise Level Project Execution Plan	RAP	Rail Activation Plan
EMU	Electric Multiple Unit	RFI	Request for Information
ESA	East Side Access	RFMP	Rail Fleet Management Plan
ET	Electric Traction	RI	Recordable Injuries
FAT	Factory Acceptance Testing	ROW	Right of Way
FCR	Field Change Request	RSD	Revenue Service Date
FFGA	Full Funding Grant Agreement	SAS	Second Avenue Subway
FIST	Field Installation Acceptance	SCC	Standard Cost Category
FTA	Federal Transit Administration	SIST	Simulated Integrated System Testing
GCT	Grand Central Terminal	SWO	Stop Work Order
HVAC	Heat, Ventilation, and Air Conditioning	TBD	To Be Determined
IST	Integrated Systems Testing	TCC	Technical Capacity and Capability
IIST	Incremental Integrated Systems Testing	TPS	Traction Power Substation
IPS	Integrated Project Schedule		
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		

ATTACHMENT B – SAFETY AND SECURITY CHECKLIST

The PMOC will populate Attachment B in future monthly reports.

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 FRA jurisdiction	
Has the state designated an oversight agency as per Part 659.9?	NA		
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? <ul style="list-style-type: none"> • 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	NTP	Forecast Substantial Completion
ACTIVE CONSTRUCTION CONTRACTS SUMMARY (\$ IN MILLIONS)						
Manhattan						
CM007 - GCT Caverns Tutor Perini Corporation	\$663.1	\$687.3	\$615.6	\$706.8	4/11/2016	10/2/2020
CM014B - GCT Concourse and Facilities Fit-Out GCT Constructors JV	\$404.6	\$542.2	\$479.7	\$558.7	2/2/2015	2/26/2021
VM014 - Vertical Circulation (Escalators & Elevators) Schindler Elevator Corp.	\$24.1	\$38.5	\$32.4	\$53.7	9/23/2010	3/23/2020
FMM19 - Manhattan Force Account Support MNR	\$31.1	\$59.4	\$58.5	\$72.5	9/5/2011	5/23/2022
Queens						
CQ033 - Mid-Day Storage Yard Tutor Perini Corporation	\$291.5	\$328.0	\$296.9	\$341.9	4/11/2017	5/5/2021
VQ033- Mid-Day Storage Yard CIL's Ansaldo STS USA, Inc	\$18.5	\$21.6	\$20.1	\$21.8	1/19/2016	12/1/2020
Harold Interlocking						
CH058A: Harold Structures B/C Approach Skanska USA	\$60.2	\$83.0	\$70.7	\$90.1	12/7/2018	3/17/2021
FHA02 - Harold Early Stage 2 – Amtrak Force Account ^{2,3,4}	\$4.8	\$62.3	\$61.1	\$62.0	12/15/2008	1/24/2021
FHL02 - Harold Early Stage 2 – LIRR Force Account ^{2,3,4}	\$48.2	\$131.6	\$127.1	\$132.4	8/17/2009	8/30/2021
VHA02 - Procure Harold Material Stage 2 – Amtrak Force Account ² LIRR Procurement ²	\$11.2	\$14.5	\$12.4	\$14.8	6/17/2008	8/30/2021
VHL02 - Procure Harold Material Stage 2 – LIRR Procurement ²	\$23.2	\$29.5	\$29.2	\$29.5	2/18/2009	4/15/2020
VH051 (Part 1) - Harold and Point CILs Ansaldo STS USA, Inc. (ASTS)	\$25.8	\$29.8	\$29.7	\$30.2	5/11/2009	7/13/2021

Project Description/Contractor	Original Contract Award	Current Value	Invoiced	Forecast	NTP	Forecast Substantial Completion
Systems						
CS179 Systems Package 1 - Facilities Systems Tutor Perini Corporation	\$333.6	\$699.4	\$612.3	\$764.7	3/31/2014	12/13/2021
CS084 Tunnel Systems Package 4: Traction Power Systems E-J Electrical Installation Company	\$71.2	\$88.3	\$64.0	\$101.5	10/29/2014	6/16/2021
CS086 Tunnel Systems Package 2 - Signal Installation - Five Star/Comstock	\$53.0	\$53.5	\$24.1	\$71.5	9/21/2018	5/24/2021
VS086 - System Package 3- Signal Equipment Procurement Ansaldo STS USA, Inc. (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

Project Description/Contractor	Original Contract Award	Final Value	NTP	Substantial Completion Date
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 Dragados-Judlau (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 MOD's & 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

Project Description/Contractor	Original Contract Award	Final Value	NTP	Substantial Completion Date
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
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

Project Description/Contractor	Original Contract Award	Final Value	NTP	Substantial Completion Date
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	Current Contract
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	\$501.0	\$533.8
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

Project Description/Entity	Original Contract Award	Invoiced	Current Contract
FA58A - Harold Structures Part 4 - Amtrak	\$2.9	\$2.5	\$2.9
FH999 - Alignment Rev 14 - 4M: FA	\$37.3	\$37.3	\$37.3
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 CIL's	\$7.1	\$7.0	\$8.2
FMA07 - GCT Cavens - 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 Hrdl Mat'ls Stage 1-Amtrak	\$4.6	\$4.6	\$4.8

Project Description/Entity	Original Contract Award	Invoiced	Current Contract
VHA02 - Procure Hrdl 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
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

Project Description/Entity	Original Contract Award	Invoiced	Current Contract
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 CIL's	\$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 Hrd Mat'ls Stage 1-LIRR	\$8.3	\$8.3	\$8.3
VHL02 - Procure Hrd Mat'ls Stage 2-LIRR	\$29.5	\$29.2	\$29.5
VHL03 - Procure Hrd Mat'ls Stage 3-LIRR	\$17.0	\$12.9	\$17.0
VHL04 - Procure Hrd 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

Project Description/Contractor	Original Contract Award	Invoiced	Current Contract
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
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

Project Description/Contractor	Original Contract Award	Invoiced	Current Contract
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	\$311.1	\$298.1	\$311.8
SH800 - LIRR Operating Support Services	\$49.5	\$48.2	\$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	\$269.5	\$279.3
P0900 - Metropolitan Transportation Auth.	\$154.6	\$144.7	\$163.8
Rolling Stock			
T0109 - Protect Locomotive	\$2.8	\$0.4	\$3.3

ATTACHMENT E – ROLLING STOCK VEHICLE STATUS REPORT

- 160 Electric Multiple Unit (EMU) Railcars Required for Full ESA Operation
- M9A Railcars – 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 8-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	May 5, 2021 (P)
Harold Interlocking Substantial Completion	June 29, 2021 (P)
Rail Systems Handoff to LIRR	July 26, 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)

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 Test Plan	TBD	Current Plan dated 2018	TBD	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	Underway				
Develop Testing Schedule and Monitoring Tools	MTAC&D/ LIRR	Underway				
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	7/26/2021	TBD	
Conduct LIRR Testing and Commissioning - Train Systems	LIRR		7/26/2021	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						
Operating Plan, Rules						
Finalize Operating Plan	OpR	Underway	Started	12/1/2020	TBD	

Description	Responsible Party	Status	Estimated Start Date	Estimated Completion Date	Actual Completion Date	Notes
Finalize / revise 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 O&M personnel	LIRR	Future	9/1/2021	TBD	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 SSPP & Security Plan (approved by SSO)	TBD	TBD	TBD	TBD	TBD	
FTA Office of Safety & Security Readiness Review	FTA	Future	6/9/2021	9/7/2021	TBD	Start one year before planned RSD. Complete in 3 months
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						
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						

Description	Responsible Party	Status	Estimated Start Date	Estimated Completion Date	Actual Completion Date	Notes
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 SSMP	TBD					
Finalize and/or update SCIL and SSCP	TBD					
Implement Safety and Security Certification Committee	OpR	Underway	Started	TBD	TBD	Certification process is underway
Implement Fire Life Safety Committee	OpR	Underway	Started			White paper prepared to address committee responsibilities
Verify design criteria, PHA, TVA, change orders are implemented within the project	Safety/Security Cert. Comm.					
Review status of quality non-conformances	MTAC&D					
Close-out of non-safety critical items / non-conformances	MTAC&D					
Close-out of safety critical items / nonconformances	MTAC&D					
Complete Safety & Security Certification Verification Report (SSCVR)	MTAC&D			4/10/2022		60 days before RSD
Document Workarounds / Open Items List	MTAC&D					
Verify emergency drills, tabletops, training, etc. are completed	TBD					

Description	Responsible Party	Status	Estimated Start Date	Estimated Completion Date	Actual Completion Date	Notes
State Safety Oversight (SSO) final certification / signature	SSO			5/19/2022		21 days before RSD
FRA?						
Revenue Service						
Target Revenue Service Date GL			-	6/9/2022	TBD	
Public RSD				12/23/2022	TBD	
FFGA Revenue Service Date			-	12/26/2023	TBD	

ATTACHMENT H – PROJECT MAP

