

MONTHLY MONITORING REPORT

October 2020

East Side Access (MTA C&D-ESA) Project
Metropolitan Transportation Authority
New York, New York

FINAL

Draft Report delivered to FTA on November 16, 2020
Final Report delivered to FTA on November 24, 2020

PMOC Contract No.: 69319519D000016
Task Order No.: 69319520F300091
Reference No.: FTA-TMP20-20-0113
CLINs: 0001, 0002, 0004, and 0005

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Project Time: 05/08/2020 – 05/07/2025

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 *August 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.

THIRD-PARTY DISCLAIMER

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.

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

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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 new 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. *The service provided on the Revenue Service Date (RSD) may be less than that included in the Full Funding Grant Agreement (FFGA).*
- **Schedule:** *The project is 85.3% complete overall. The forecast RSD has slipped 18 days in the past month to June 27, 2022. The Public RSD remained December 13, 2022, [REDACTED] b(4) [REDACTED]. The required RSD in the FFGA is December 31, 2023. The program critical path involves work for facilities systems in Manhattan. Recent and upcoming critical milestones for Manhattan Facilities Systems include:*
 - *CM014B: Rig and set chilled water tank/chemical treatment (September 2020). This milestone was achieved.*
 - *CM014B: GCT Zones 1 – 4 Mechanical, Electrical, Plumbing (MEP) (January 14, 2021, delayed from December 22, 2020). This delay accounts for much of the slippage in the target RSD.*
- **Cost:** *The forecast project cost is unchanged at \$11.13 billion. Invoiced cost through September 30, 2020 was \$9.54 billion. [REDACTED] b(4) [REDACTED].*
- **Construction Status:** *Heavy civil construction for buildings and other facilities is over 96% complete, based on contractor invoices. Systems installation is 86% complete. Construction is 90% complete overall. Contract CM007 pre-functional and local testing of systems and MEP equipment is continuing. The trackwork, special trackwork, and third rail along the project alignment are nearly complete. Contract CM014B advanced pre-functional and local testing of systems and MEP equipment. The foundation work*

and substructure systems in concourse Zone 4, performed by J. P. Morgan Chase (JPMC), continue to run behind schedule. The Vertical Circulation (Contract VM014) contractor fabricated and delivered materials to the jobsite for all escalators and all elevators except for elevator EL #10. Contract CQ033 began the demolition work of building #7 in October 2020, following Amtrak’s completion of asbestos abatement. Contract CH058A installed the staircase to the 39th Street Bridge. The site grading, ballast, and sub-ballast work for the trackwork of the B/C approach is underway. Amtrak and LIRR force account crews installed track, switches and related equipment in the Harold Interlocking.

Local testing is underway for the building and facilities systems (CS179), 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, was scheduled to begin in December 2020, but now cannot start until January 19, 2021. The CS084 contractor continued project work in traction power substations (TPS) C01, C02, and C04 through C07, while the water intrusion issue in CO3 was resolved. The CS086 contractor is working in as many locations as possible, seven days per week, to try and recover lost time for installation of the signal system. Contract modifications for incorporation of Positive Train Control (PTC) and acceleration of work have not been executed.

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 JPMC building the GCT concourse for ESA. The work by the JPMC contractor is behind schedule, which may 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 Project Management Oversight Contractor (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 PTC into the ESA signal system. This work may delay completion of the signal system and associated testing, thereby delaying the RSD. The Comprehensive System Test Plan (CSTP) needs to be updated to reflect the current approach to PTC integration and the IIST approach.
Date Identified	6/25/2020
Status	Ongoing.
Project Sponsor Action	MTA C&D plans to issue several contract modifications and related IPS modifications for PTC integration starting in mid-November 2020 and completing in March 2021. MTA C&D hopes to issue an update to Volume 1 of the CSTP for stakeholder review in December 2020. An update of Volume 2 requires PTC testing information from CS086, which is currently unavailable.

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. LIRR and the contractor disagree on 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, <i>up to 45 days of delay to CM007</i> , and 50 days of delay to CM014B.
PMOC Recommendation	Continue to monitor COVID-19 impacts to schedule.
Issue/Concern	There is a risk that the time allocated in the schedule for LIRR testing, commissioning, and pre-revenue service may be insufficient. In addition, <i>some or all of the 65,000 feet of installed track found to be corroded</i> will need 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. <i>The time allocated in the IPS for testing and commissioning work 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).</i>
Date Identified	<i>Current.</i>
Status	<i>Ongoing.</i>
Project Sponsor Action	The ESA Operational Readiness Group (OpR) develops the RAP and manages the preparation for revenue service. The next update of the RAP will include: An LIRR OpR/Transition Team staffing plan; incorporation of the rail replacement process into the timeline for Rail Activation; a Pre-Revenue Operations Plan defining the specific tasks for pre-revenue operations, the resources required, and the associated timelines.
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	<i>Quality issues with work by previous contractors is delaying ongoing work and could delay LIRR testing and commissioning activities.</i>
Date Identified	<i>10/14/2020</i>
Status	<i>Some or all of 65,000 feet of track found to be corroded must be replaced. Blocked conduits connecting power substations to the tracks are delaying work by the CS086 contractor. Water infiltration in numerous locations is delaying work and may lead to a requirement to replace installed equipment.</i>
Project Sponsor Action	<i>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.</i>
PMOC Recommendation	<i>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.</i>
Issue/Concern	<i>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.</i>
Date Identified	<i>7/25/2020</i>
Status	<i>Ongoing.</i>
Project Sponsor Action	<i>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.</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>
Issue/Concern	<i>MTA does not have a federally compliant procurement of 160 revenue and 5 non-revenue rail cars planned, and MTA has not ordered the rail cars needed to provide ESA service. If ordered now, new cars would not be available in time for RSD</i>
Date Identified	<i>November 24, 2020</i>
Status	<i>New issue.</i>
Project Sponsor Action	<i>MTA owes FTA a plan for the federally compliant rail car procurement. MTA states that they plan to exercise an option in an existing contract to order 54 M9 railcars. Consultants to MTA are preparing a revised service plan that documents the operating schedule and rail car requirements for ESA.</i>
PMOC Recommendation	<i>Review the service plan and fleet requirements when complete. Document differences between the FFGA service level and the service level in the service plan.</i>

1.4. Key Indicators Dashboard

Table 1. Key Indicators Dashboard

Project Sponsor:		New York Metropolitan Transportation Authority		
Project Name:		East Side Access		
Date:		October 31, 2020		
Project Detail				
Oversight Frequency:		Monthly		
Element	Status			Prior Status
				
	G	Y	R	
				Issue or Concern

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		●		●	<i>Delayed installation of MEP components, local testing delays, work at 270 Park Avenue, repair/replacement of damaged equipment, and integration of PTC into the signal system may cause delays. Without a complete CSTP, it is impossible to determine the time required to complete systems testing.</i>
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: Forecast cost exceeds the project budget by up to 5% - Yellow; more than 5% - Red

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
Cost¹	Capital Cost Estimate	\$10.92 billion	\$11.13 billion	Acceptable
Contingency²	Unallocated Contingency	\$720 million	b(4)	Acceptable
	Allocated Contingency	\$379 million		Acceptable
	Total Contingency	\$1.099 billion		Acceptable
Schedule³	Revenue Service Date	12/31/2023	6/27/2022	Optimistic
Project Progress				
		Amount (\$)		Percent of Total
Total Expenditures¹	Actual invoiced amounts, not including finance costs.	<i>\$9.539 billion</i>		<i>85.7%</i>
Planned Cost to Date³		<i>\$9.819 billion</i>		<i>88.2%</i>
Contract Status				
		Amount (\$)		Percent of Total
Total Contracts Awarded¹	Value of all contracts awarded; % of total value to be awarded.	<i>\$9.933 billion</i>		<i>89.2%</i>
Construction Contracts Awarded¹	Value of construction contracts awarded; % of total construction value to be awarded.	<i>\$7.577 billion</i>		<i>94.4%</i>
Physical Construction Completed¹	Invoiced cost of physical construction completed; % of total construction value completed.	<i>\$7.254 billion</i>		<i>90.4%</i>
Rolling Stock Vehicle Status		Date Awarded		No. Ordered
<i>M9A</i>		To Be Determined (TBD)		54
Support Vehicles		TBD		5
Next Quarterly Review Meeting Date:		TBD		

¹Source: PCM Total Cost Report by Contract, September 2020.

²Source: PCM Contingency ESA September 2020.

³Source: ESA August 2020 Monthly Progress Report (MPR)

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 Meetings
- 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 \$100,000

2.2. Oversight Triggers

The project is subject to continuous monitoring by the PMOC. The Federal Transit Administration (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 is complete, and ESA has achieved 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. *A draft of an updated version of the RAP was sent to stakeholders for review in October 2020; there is no firm date for publication of the completed update. The CSTP, a two-volume document that is part of the RAP, was last issued in 2018 and must be updated to include the IIST approach adopted in 2019 and tests relevant to the CS086 contract. The OpR is attempting to have a draft revision to Volume 1 available for review by the end of 2020. There is no target date for completion of a draft version of Volume 2 of the CSTP. The testing plan for the PTC system must still be identified and incorporated into the various contract modifications being progressed for the PTC installation and incorporated into the CSTP.*

In the opinion of the PMOC, MTA C&D should update the PMP to reflect the transition of the project into the Integrated Systems Testing (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 to the MCC Plan 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. *Ongoing updates to the CSTP and to the RAP will provide additional information regarding the testing and commissioning work to be completed and MTA C&D and LIRR staffing to complete the work.*

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 September Percentage of Completion Method (PCM) Total Cost by Contract Report indicated that the overall engineering effort was 89.9% complete compared to planned completion of 91.0%. The Final Design of the Closed-circuit Television & Security Management Software was returned to the contractor with a status of Proceed as Noted – Resubmit, which means that the equipment fabrication and factory testing cannot be initiated. Milestone 12B-10 (Phase 3, Part 1 IST complete) was extended to July 26, 2021. 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 “Loop 1A Trackwork” scope from this contract was transferred to CH058A, and that work started on October 13, 2020 while the contract modification for CH05A was being finalized.*

2.9. Construction

The ESA 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 *October 2020* included:

2.9.1. Manhattan Construction:

1. The GCT Caverns (Contract CM007) power track monument remediation work along the right-of-way (ROW) *is substantially complete*. The pre-functional *and local testing* of systems and MEP equipment *is continuing*. The trackwork, special trackwork, 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 for the alignment. *A total of 65,000 feet of track has been identified as corroded and some or all of this track will need to be replaced after completion of the track IST at the cost of the contractor. MTA C&D has ordered 32,000 feet of track for the replacement work.*
2. The GCT Concourse and Facility (Contract CM014B) contractor *advanced pre-functional and local testing of systems and MEP equipment*. The foundation work and substructure systems for the 270 Park Avenue building in GCT concourse Zone 4, performed by JPMC, *continued to run behind schedule, resulting in delays to its forecast 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 *began the demolition work of building #7 in October 2020, following Amtrak’s completion of asbestos abatement.*
2. The Harold Structures B/C Approach (Contract CH058A) contractor *installed the staircase to the 39th Street Bridge*. The site grading, ballast, and sub-ballast work for the trackwork of the B/C approach is underway.
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 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 the 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 the 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 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; *still others are, per the contractor, a result of delays in receiving answers from MTA C&D to Requests for Information and delayed comments by MTA C&D on contract submittals; 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 work can be started. The continued delay in completion of the local testing of installed systems has further delayed the full implementation of IIST.*
2. The Traction Power Systems (CS084) contractor continued project work in TPS C01, C02, and C04 through C07. *The previously reported water issue in the C03 TPS that halted the installation of the epoxy floor covering was reported as "resolved" and the covering was installed. The water infiltration problem in the C08 substation roof remains unresolved and three additional water infiltration areas are delaying energization of this substation. The contractor worked with the C08 substation fabricator to identify the cause of the roof leaks, and the fabricator is scheduled to be on-site to fix the leaks in December 2020. MTA C&D will engage a grouting contractor to mitigate the foundation cracks; but, it still needs to investigate remediation methodologies for the other two identified leaks in the C08 substation. Other field construction issues (e.g., door issues for the C06 and C07 substations, water damage to equipment racks from an unapproved Heat, Ventilation, and Air Conditioning (HVAC) system in C01 and C02 substations, and cable pulling and conduit issues) continue to be identified; and, the 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 has been agreed to in concept; but, a contract modification to implement the schedule 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. However, 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. LIRR and the contractor continue to have significant differences of opinion as to what testing of the fiber optic network is required, and meetings must still be held to discuss this issue. MTA C&D has determined that 25 of the 55 installed track switches must be removed and returned to the manufacturer for remediation or replacement. An additional 14 switches were found to have contamination and rust, a condition that LIRR believes should also require remediation by the manufacturer before acceptance. The removal, shipping, and re-installation of the switches is the responsibility of the CM007 contractor, and the first shipment of 14 of the 25 switches identified for remediation is planned for early November 2020. The CS086 contractor has stated that the replacement of the switches will delay the signal breakdown testing. The CS086 contractor reports that many impedance bond track cutouts are still not compliant with LIRR specifications. The CS086 contractor completed the surveys of the impedance bond locations and developed an installation template that was used to demonstrate a possible remediation plan to address the issue by affixing the impedance bonds to the track invert. MTA C&D will develop a contract modification so that the CS086 contractor can drill new mounting holes in the track invert for the bonds. The contractor continues to use a “water jet” machine to attempt to clear numerous blocked duct lines that are impacting the signal cable installations.*

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.

2.12. Vehicle Technology and Procurement

The ESA program includes 160 Electric Multiple Unit (EMU) railcars for revenue service and 5 non-revenue vehicles. 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, 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.

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 3 shows budget, contract award, and invoiced amounts by FTA Standard Cost Category (SCC).

Table 3. Project Costs by SCC

SCC	FFGA	Amended FFGA	2018 MTA ETPC ¹	September 30, 2020			
				Current Budget	Awarded Value	Paid to Date	Amended FFGA Remaining
10 - Guideway & Track Elements	\$1,989	\$3,353	\$3,480	\$3,505	\$3,396	\$3,217	\$136
20 - Stations, Stops, Terminals, Intermodal	\$1,169	\$2,327	\$2,474	\$2,487	\$2,333	\$2,158	\$169
30 - Support Facilities (Yards, Shops, Admin)	\$356	\$451	\$613	\$605	\$575	\$539	(\$88)
40 - Site Work and Special Conditions	\$205	\$562	\$592	\$556	\$495	\$519	\$43
50 - Systems	\$619	\$628	\$811	\$831	\$733	\$603	\$25
60 - ROW, Land, Existing Improvements	\$165	\$192	\$241	\$221	\$157	\$156	\$36
70 - Vehicles	\$494	\$880	\$210	\$210	\$11	\$6	\$874
80 - Professional Services	\$1,184	\$1,809	\$2,447	\$2,474	\$2,233	\$2,151	(\$341)
90 - Unallocated Contingency	\$169	\$720	\$730	b(4)	--	--	█
Total (without finance)	\$6,350	\$10,922	\$11,596	\$11,133	\$9,933	\$9,394	\$1,528
100 - Financing Cost	\$1,036	\$1,116	\$1,116	\$1,116	NA	\$618	\$548
Total Cost	\$7,386	\$12,038	\$12,713	\$12,250	NA	\$9,966	\$2,071

Source: ESA SCC Cost by Source Updates, October 2020; NA = Not Available

1. Estimated Total Project Cost

2.13.1. Contingency

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

1. CS179 – BMS Point List Update: \$581,000
2. CM007 – NOC-117 Slab Elevation Issues Due to Beam Camber: \$362,568

2.14. Project Schedule

The schedule information in this report is based on schedule information provided in the ESA August 2020 MPR and IPS data date September 1, 2020. The forecast for the Target RSD slipped 18 days from the June 9, 2020 date reported in the July MPR to June 27, 2020. The Public RSD remained at December 13, 2022.

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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.

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 4 summarizes the key milestones listed in the IPS *September 2020 Revision*.

Table 4. August 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, *65,000 feet* of track has been identified as corroded and some or all of this track will need to be replaced after completion of track IST. This work may disrupt LIRR commissioning work for the affected area of the project. *Furthermore, 25 railroad switches throughout the project must be returned to the manufacturer for repairs due to corrosion and other issues. Equipment inside 14 additional switch machines also shows evidence of corrosion, which may lead to a need for those additional units to be repaired or replaced. The removal, shipment, repair and return of the switches is likely to disrupt rail systems testing, which could cause the Manhattan Track schedule path to become critical.*

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. The schedule includes about two months of float between “ready for revenue service” and the Target RSD, which may be available for additional testing, if required.

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 these contracts *and the CS179 contract (for Central Control System)* and may impact the RSD. The incomplete CSTP 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 latest IPS 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 caisson work was completed in mid-October 2020. The shearwalls 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 continues to run behind schedule, and the contractor was not able to recover any lost time over a three-month period. MTA C&D directed the developer to increase the workforce and 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** - Final design of the Control Systems being provided under the CS179 contract was, as of the end of October 2020, 54 months late. *Delayed design has caused delays in fabrication and installation of systems components.* 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 continues to indicate 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 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 has impacted progress to date, and future issues with availability of MTA and LIRR staff are likely to delay 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 four-month period is followed by eight weeks of pre-revenue service by LIRR.* 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 six months for LIRR testing, training, and commissioning of the track and related systems, with “operational readiness” on March 17, 2022. However, replacement of corroded rail (currently not shown in the September 2020 IPS) needs to be completed in parallel with the testing and training activities. The schedule then includes about 15 weeks for pre-revenue service prior to the target RSD. Without an updated CSTP Volume 2, the time required to complete testing cannot be confirmed and, in the opinion of the PMOC, testing work is likely to be delayed by the parallel track replacement. Further delays to testing may result from the need to repair or replace damaged track switches.*

2.16. Quality Assurance/Quality Control.

The PMOC reports on Quality Assurance/Quality Control issues on a quarterly basis.

2.17. Safety and Security

The PMOC reports on Safety and Security issues and statistics on a quarterly basis.

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

The current IPS indicates that building and facility systems will be turned over to LIRR on January 5, 2022. The planned RSD is June 27, 2022, which allows about six months for LIRR testing, commissioning, pre-revenue service 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 *September 4, 2021, 17 days later than forecast the previous month.* The planned RSD provides about *10 months* for LIRR testing, commissioning, and start-up of rail systems, *including three months between “operational readiness” and the target RSD, presumably for pre-revenue service activities.*

An Operational Readiness team has been assigned and divided into 11 functional *Task Working Groups (TWGs)*. The PMOC reports on progress of the Operational Readiness TWG’s on a *quarterly basis.*

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 5 were identified at the June 25, 2020 Quarterly Project Review meeting.

Table 5. 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

Number	Date Identified	Action/Recommendation	Due Date
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	MNR	Metro-North Railroad
BCS	<i>Backbone Communications System</i>	MPR	Monthly Progress Report
CIL	Central Instrument Location	MTA	Metropolitan Transportation Authority
CSTP	Comprehensive System Test Plan	MTA C&D	MTA Construction and Development
ELPEP	Enterprise Level Project Execution Plan	NEPA	<i>National Environmental Policy Act</i>
EMU	Electric Multiple Unit	OpR	Operational Readiness Group
ESA	East Side Access	PCM	<i>Percentage of Completion Method</i>
ET	Electric Traction	PMOC	Project Management Oversight Contractor (David Evans and Associates, Inc.)
ETPC	Estimated Total Project Cost	PMP	Project Management Plan
FFGA	Full Funding Grant Agreement	PTC	Positive Train Control
FTA	Federal Transit Administration	Q	Quarter
GCT	Grand Central Terminal	RAP	Rail Activation Plan
HVAC	Heat, Ventilation, and Air Conditioning	ROW	Right of Way
IIST	Incremental Integrated Systems Testing	RSD	Revenue Service Date
IPS	Integrated Project Schedule	SAS	Second Avenue Subway
IST	Integrated Systems Testing	SCC	Standard Cost Category
JPMC	J. P. Morgan Chase	TBD	To Be Determined
LIRR	Long Island Rail Road	TPS	Traction Power Substation
MCC	Management Capacity and Capability	TWG	Task Working Group
MEP	Mechanical, Electrical, Plumbing		

ATTACHMENT B – 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 C– 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	<i>April 26, 2021 (P)</i>
Harold Interlocking Substantial Completion	June 29, 2021 (P)
Rail Systems Handoff to LIRR	<i>August 18, 2021 (P)</i>
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