



Metropolitan Transportation Authority

Capital Program Oversight Committee Meeting

October 2018

Committee Members

J. Lhota, Chair

F. Ferrer

A. Albert

N. Brown

I. Greenberg

S. Metzger

M. Pally

L. Schwartz

P. Trottenberg

J. Vitiello

P. Ward

C. Weisbrod

C. Wortendyke

N. Zuckerman

Capital Program Oversight Committee Meeting

2 Broadway, 20th Floor Board Room

New York, NY 10004

Monday, 10/22/2018

1:30 - 2:30 PM ET

1. PUBLIC COMMENTS PERIOD

2. APPROVAL OF MINUTES SEPTEMBER 24, 2018

- *Minutes from September '18 - Page 3*

3. COMMITTEE WORK PLAN

- *2018-2019 CPOC Committee Work Plan - Page 7*

4. LIRR CAPITAL PROGRAM UPDATE

- *Progress Report on Capital Program - Page 9*

- *IEC's Project Review on Morris Park Locomotive Shop - Page 25*

- *IEC's Project Review on Mid Suffolk Yard - Page 28*

- *IEC's Project Review on Jamaica Capacity Improvements Phase 1 - Page 31*

- *IEC's Project Review on Main Line Double Track - Page 34*

5. MNR CAPITAL PROGRAM UPDATE

- *Progress Report on Capital Program - Page 37*

- *IEC's Project Review on Harmon Shop Replacement Phase V, Stage 1 & 2 - Page 54*

- *IEC's Project Review on Customer Service Initiatives - Page 58*

- *IEC's Project Review on Hudson Line Sandy Restoration/Resiliency - Page 61*

6. LIRR and MNR UPDATE ON ROLLING STOCK

- *Progress Report on M-9 & M-9A Railcar Procurements - Page 64*

- *IEC's Project Review on M-9 Railcar Procurement - Page 79*

7. LIRR and MNR UPDATE ON POSITIVE TRAIN CONTROL (PTC)

- *Progress Report on PTC - Page 82*

- *IEC's Project Review on PTC - Page 99*

8. CAPITAL PROGRAM STATUS

- *Commitments, Completions, and Funding Report - Page 104*

Date of next meeting: Tuesday, November 13, 2018 at 2:00 PM

MINUTES OF MEETING
MTA CAPITAL PROGRAM OVERSIGHT COMMITTEE
September 24, 2018
New York, New York
2:00 P.M.

MTA CPOC members present:

Hon. Joseph Lhota
Hon. Fernando Ferrer
Hon. Andrew Albert
Hon. Norman Brown
Hon. Ira Greenberg
Hon. Mitchell Pally
Hon. Carl Weisbrod

MTA CPOC members not present:

Hon. Susan Metzger
Hon. Lawrence Schwartz
Hon. Polly Trottenberg
Hon. James Vitiello
Hon. Peter Ward
Hon. Carl Wortendyke
Hon. Neal Zuckerman

MTA board members present:

Hon. Randolph Glucksman
Hon. David Jones

MTA staff present:

Veronique Hakim
Tom Savio
Donald Spero

MTACC staff present:

Dan Creighton
Tim Gianfrancesco
Bill Goodrich
Janno Lieber
Eve Michel
Mark Roche

Independent Engineering Consultant staff present:

Joe DeVito
Kent Haggas
Mohammad Mohammadinia
Dianne Rinaldi
Darlene Rivera

* * *

Chairman Lhota called the September 24, 2018 meeting of the Capital Program Oversight Committee to order at 2:45 P.M.

Public Comments Period

There were two public speakers in the public comments portion of the meeting: Jason Pineiro and David Feliciano.

Meeting Minutes

Upon motion duly made and seconded, the CPOC members approved the minutes to the previous meeting held on July 23, 2018.

Committee Work Plan

Mr. Spero announced that there was one change to the Work Plan: because the Diversity Committee will be meeting in October, rather than September as originally scheduled, the updates on the Small Business Development Program and MWDBE Participation have also been moved to October.

WTC Cortland Street #1 Line Station Reconstruction Update

Mr. Creighton reported that revenue service was achieved on September 8, 2018, one month ahead of the projected revenue service date cited at the last CPOC. The substantial completion date remains December 2018 and the project budget stands at \$181.8 million (including adequate contingency for project completion). He completed his presentation with a “video walkthrough” of the station, highlighting accessibility features, the art installation, and the column-free expanses of the reconstructed station environment. In its oral remarks, the IEC took the opportunity to congratulate the project team on their successful opening, which required a great deal of work, commitment and cooperation among the team, MTACC and NYCT. Further details of the presentation, and Committee Members’ comments and questions with respect thereto, are included in the video recording of the meeting maintained in MTA’s records.

East Side Access Project Update

Mr. Lieber and Mr. Goodrich both provided the presentation, which included the following: status of management initiatives, including transitioning to incremental Integrated Systems Testing (IST); a sampling of key performance indicators (KPIs); construction progress; procurement highlights; 90-day look-ahead; financial performance; schedule performance; and key milestones and issues. The presentation concluded with the following points: management initiatives are achieving the intended results; although there are continued challenges, construction continues to progress; and the project remains on schedule for December 2022 revenue service date. In its oral remarks, the IEC noted the successful completion of major track reconfiguration and switch installation work, including the CIL cutovers in Harold, which required significant support from LIRR. The IEC then acknowledged improvements in the following key areas: with the addition of the Program Management Office Integrator and the Change Management Group, the project has been able to strengthen its organizational structure to focus its efforts on the prioritization of work as it shifts to systems; implementing the contract modification process has resulted in a reduction of the backlog of change orders and the time required to execute modifications (although additional resources may be needed to further reduce this duration and address remaining contract issues). Citing its recommendation from April, the IEC acknowledged that the project has developed KPIs necessary to effectively track project progress. The IEC then noted its concurrence with the project team’s characterization of major risks, but pointed out that the project will need to mitigate these risks, including the availability of sufficient resources. Finally, the IEC stated that as the project continues to focus its efforts on prioritizing work that supports the transition to IST, the incorporation of this approach into the contractors’ schedules is vital to effectively progress the work. Further details of the presentations, and Committee Members’ comments and questions with respect thereto, are included in the video recording of the meeting maintained in MTA’s records.

MTACC Second Avenue Subway Phase 2 Update

Mr. Gianfrancesco provided an update in the following areas: Environmental Process, with the goal of a NEPA finding by fall 2018; FTA/Federal Funding Process, with the goal of receiving the FFGA

in the fourth quarter of 2020; and Design Process, with extended preliminary design remaining on schedule to be completed by the third quarter of 2018. He concluded his presentation with an update on the multi-faceted Public Outreach efforts that are underway. In its oral remarks, the IEC observed that the program continues to track toward completion of Project Development and the Environmental Assessment process by the end of 2018, and that the project team is heavily engaged with NYCT to incorporate lessons learned from Phase 1. The IEC then stated that it is looking forward to a review of the preliminary engineering plans in the fourth quarter and particularly the means by which the project addresses the MTA's cost containment challenges for major capital projects. Further details of the presentation, and Committee Members' comments and questions with respect thereto are included in the video recording of the meeting maintained in MTA's records.

Penn Station Access Project Update

Ms. Michel highlighted third-quarter accomplishments in the following areas: Funding and Environmental Approvals; Stakeholder Coordination; and Amtrak Issues. She then provided a look-ahead to the fourth quarter, which cited Amtrak and CSX cooperation, and FTA Review Schedule as key issues. In its oral remarks, the IEC confirmed that the project team's focus has been on completing a project implementation arrangement with Amtrak and an environmental assessment, both of which are important to defining the project for the start of preliminary design. The IEC then stated its support of the current strategy of coordinating the GEC contract award with the pending Amtrak arrangement. Further details of the presentation, and Committee Members' comments and questions with respect thereto, are included in the video recording of the meeting maintained in MTA's records.

LIRR Expansion Project Update

Mr. Roche provided an overview of the project, including numerous preparatory works, all which are underway, a construction look-ahead, and design development. He then highlighted the extent to which the project is fulfilling its commitments, and cited stakeholder engagement to date, as well as project risks and mitigations. He concluded his presentation by outlining several project metrics, including Project Management Team (PMT) Performance Management, Project Financials, and Schedule Summary. In its oral remarks, the IEC stated that it had participated in a quarterly risk workshop update reviewing design, external, project management, and construction risks. This workshop identified the top near-term project risks as follows: timely approval of a cost-loaded integrated project schedule; efficient use of track outages; and interface between the design-build contractor and LIRR force account services. The IEC then confirmed that the PMT is making every effort to mitigate the above near-term project risks. The IEC concluded its oral remarks by noting that the PMT and the contractor have performed a significant amount of up-front work, including utility agreements, property acquisitions, and establishing the project headquarters, which positions the project well for the start of heavy construction in the fourth quarter of 2018. Further details of the presentation, and Committee Members' comments and questions with respect thereto, are included in the video recording of the meeting maintained in MTA's records.

MTA Capital Program Commitments & Completions and Funding

In the interest of time, Ms. Hakim cited the Capital Program Commitments & Completions and Funding report in the book.

Capital Program Traffic Light Reports

In the interest of time, Mr. Spero cited the Traffic Light Reports in the book, noting however, that out of a total of 311 projects reviewed in the Core Capital Program Report, 33 were designated red, and out of a total of 82 projects reviewed in the Sandy-related Report, 8 were designated red.

Quarterly Capital Change Order Report (for information only)

Mr. Spero brought the Committee's attention to the Quarterly Capital Change Order Report for the 2nd Quarter 2018.

Adjournment

Upon motion duly made and seconded, Chairman Lhota adjourned the September 24, 2018 meeting of the MTA Capital Program Oversight Committee at 4:15 PM.

Respectfully submitted,
Michael Jew-Geralds
Office of Construction Oversight



2018-2019 CPOC Committee Work Plan

I. Recurring Agenda Items

Approval of the Minutes
Committee Work Plan
Commitments/Completions and Funding Report

II. Specific Agenda Items

November

NYCT Capital Program Update

- Stations Division
- Signals and Train Control Division
- Systems and Security Division

Update on New Fare Payment System

CPOC Committee Charter Review

Update on Minority, Women and Disadvantaged Business Participation

Update on Small Business Development Program

December

Quarterly MTACC Capital Program Update

Quarterly Change Order Report

Quarterly Traffic Light Reports

Update on Capital Program Security Projects (in Executive Session)

January

NYCT Capital Program Update

- L Line Restoration
- Reconstruction of Clifton Shop
- Rolling Stock Procurement Program

February

B&T Capital Program Update

March

Quarterly MTACC Capital Program Update

Quarterly Change Order Report

Quarterly Traffic Light Reports

April

NYCT Capital Program Update
Update on Minority, Women and Disadvantaged Business Participation

May

LIRR Capital Program Update
MNR Capital Program Update
Update on New Fare Payment System
Update on Capital Program Security Projects (in Executive Session)

June

Quarterly MTACC Capital Program Update
Quarterly Change Order Report
Quarterly Traffic Light Reports

July

NYCT Capital Program Update

September

Quarterly MTACC Capital Program Update
Quarterly Change Order Report
Quarterly Traffic Light Reports

October

LIRR Capital Program Update
MNR Capital Program Update
LIRR and MNR Joint Update on Rolling Stock
Update on Minority, Women and Disadvantaged Business Participation
Update on Small Business Development Program

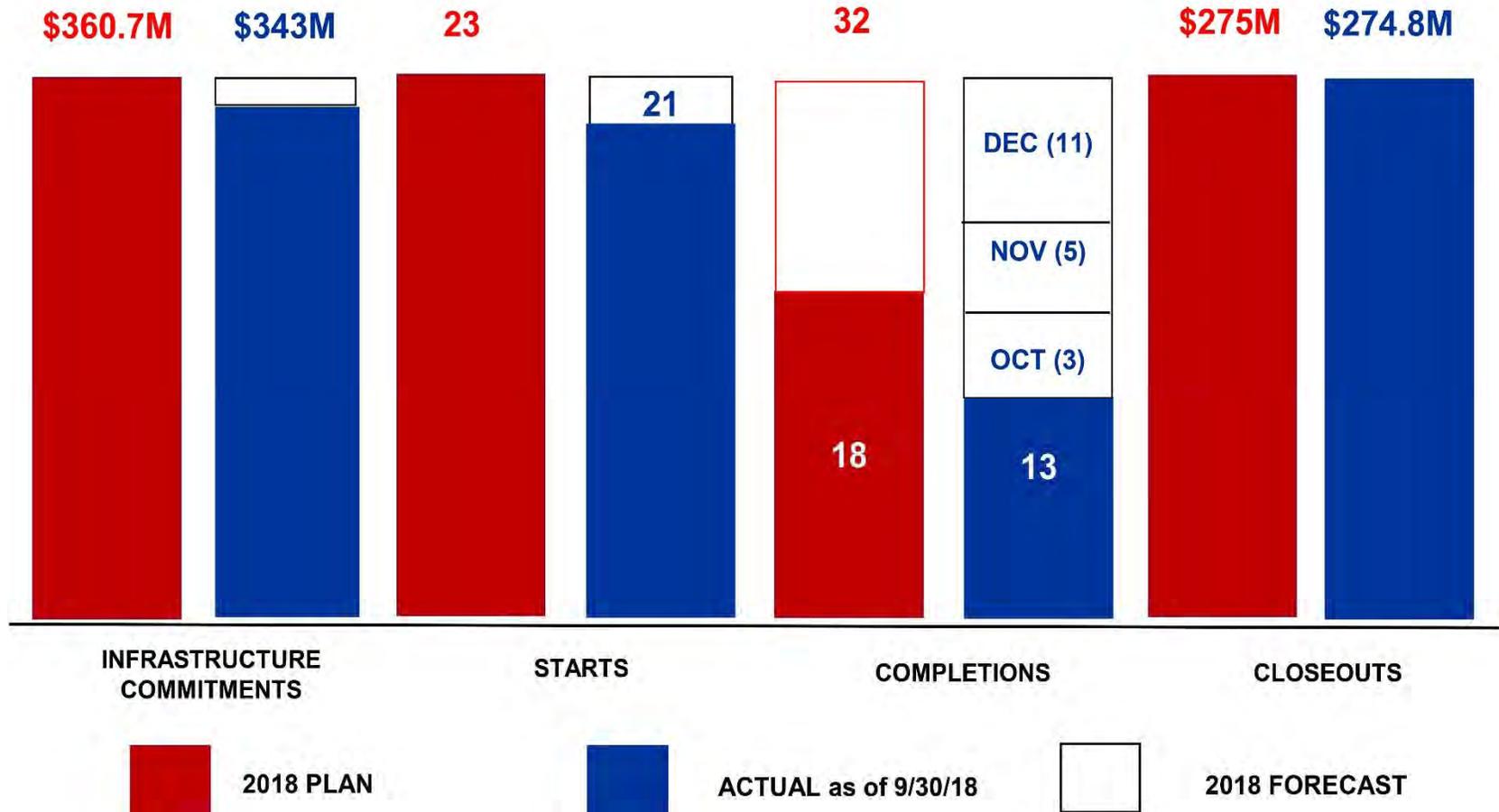
Capital Program Oversight Committee

Long Island Rail Road
Capital Program Overview

October 2018



2018 LIRR Capital Program Goals



2018 Planned Major Starts and Completions

▣ Planned Major Starts:

▣ Construction

- ✓ 2018 Track Program
- ✓ Long Island City Restoration
- ✓ Station Initiatives – 8 Stations
- ✓ Station Initiatives – 6 Stations
Substation Component

▣ Planned Major Completions:

▣ Construction

- ✓ Flushing Main St New Elevators
- ✓ Hicksville Station Improvements
- ✓ Wantagh Platform Replacement
- ✓ Main Line Double Track
- ✓ Buckram Road Bridge
Replacement
Centralized Traffic Control Fit-Out
2018 Track Program



Morris Park Locomotive Shop and Employee Facility



Morris Park Locomotive Shop and Employee Facility

- **Schedule**
 - Design/Build Award: Dec 2017 (A)
 - Beneficial Use: 1st Q 2020 (F)

- **Budget: \$102.3M**

- **EAC: \$102.3M**

- **Percent Complete: 22%**

- **Risk Management - Top Risks as of September 2018:**
 - Long Lead Equipment
 - 3rd Party Contractor interface with LIRR Force Account



Existing Shop (Built in 1889)

Morris Park Locomotive Shop and Employee Facility



Facility Footprint



Morris Park Locomotive Shop and Employee Facility

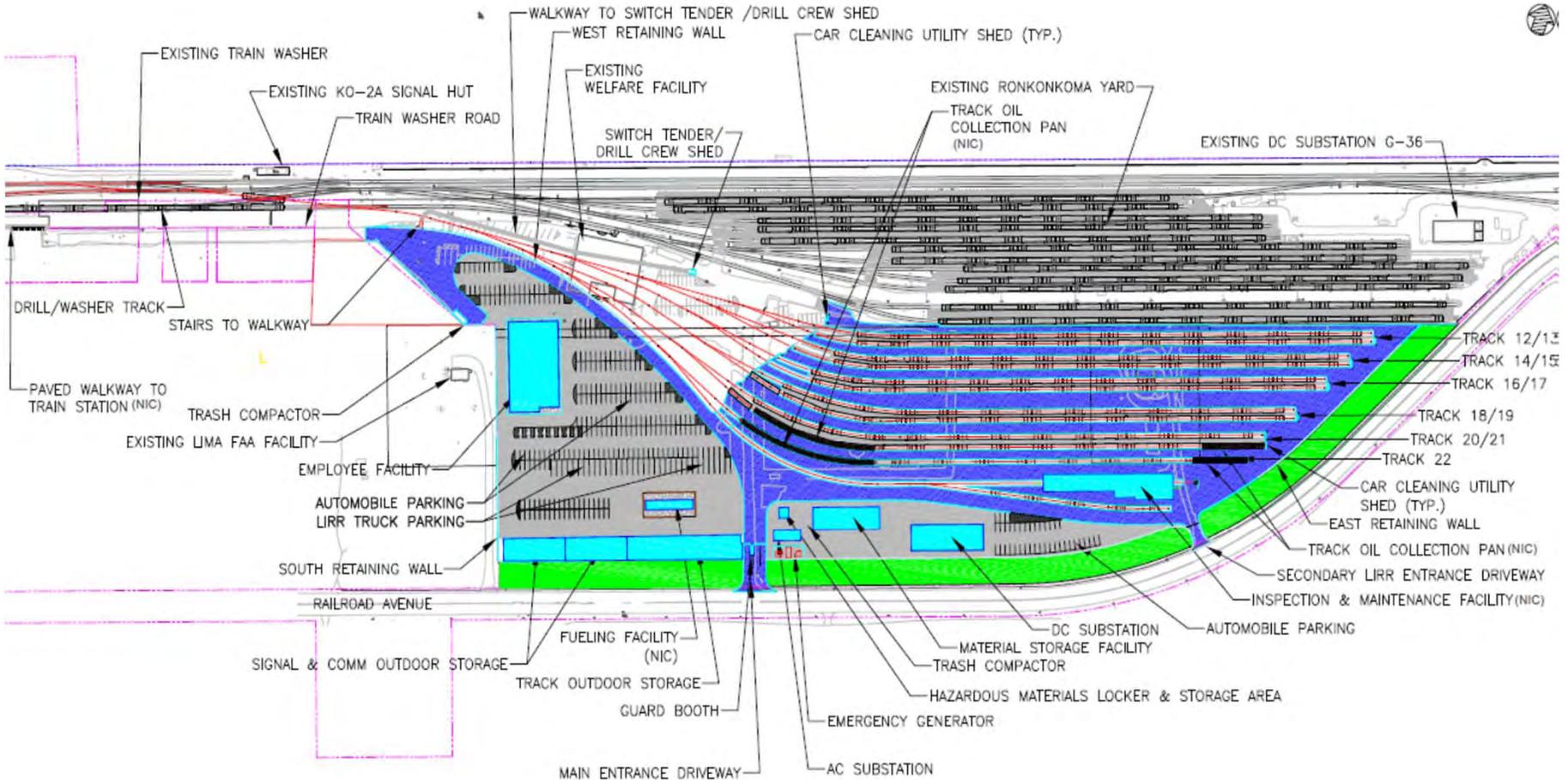


Concrete Placement of Drop Pit Foundation Walls



Drop Table Electrical Traversing Structures in Fabrication

Mid-Suffolk Yard



Mid-Suffolk Yard



Mid-Suffolk Yard

- **Schedule:**
 - Design/Build Contract Awarded December 2017 (A)
 - Beneficial Use: Q1 2020 (F)

- **Budget: \$128M**

- **EAC: \$128M**

- **Percent Complete: 12%**

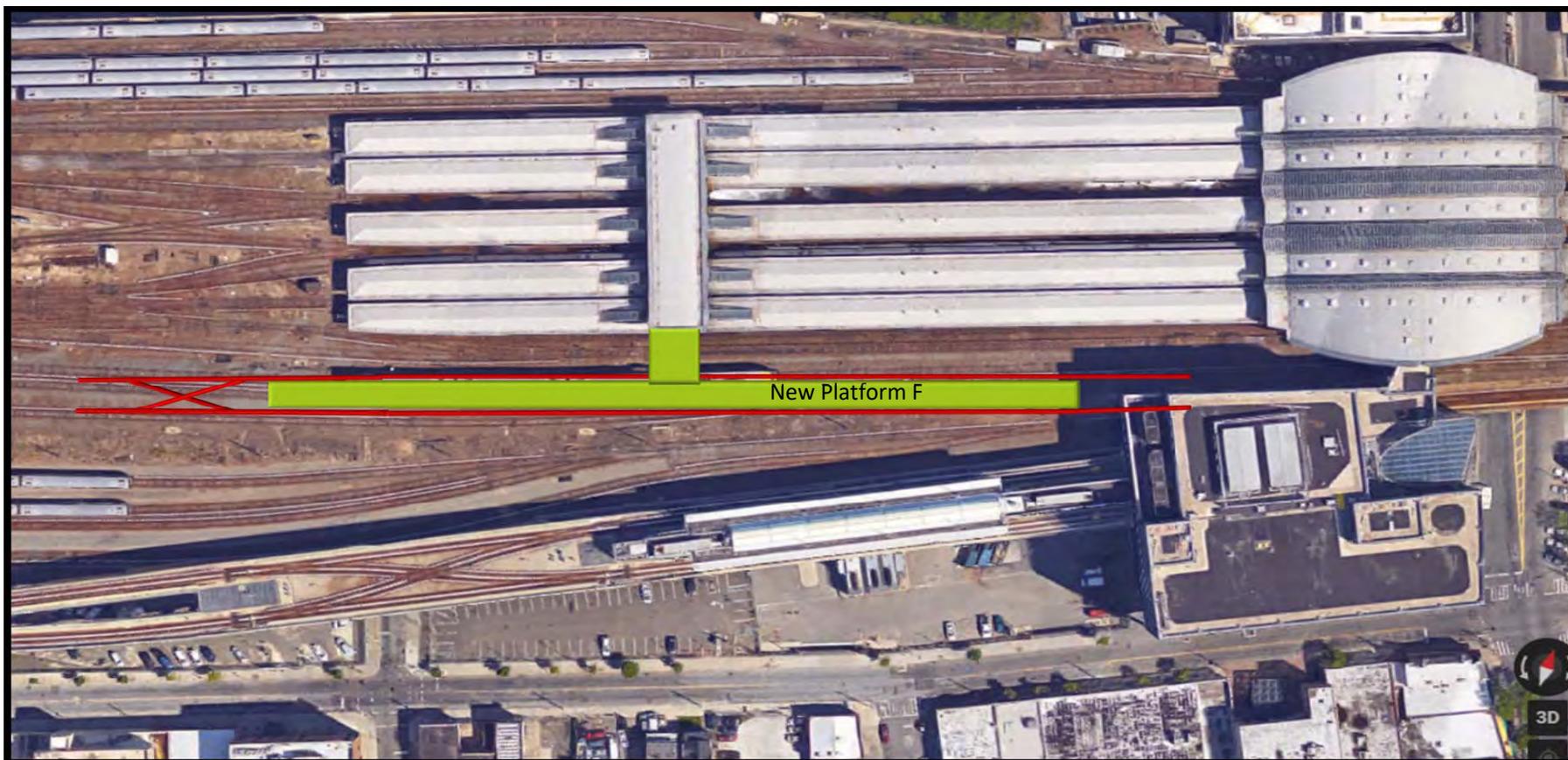
- **Risk Management - Top Risks as of September 2018:**
 - Long Lead Special Trackwork
 - Track Outage Availability & Coordination
 - PSEG Power Feeders for DC Traction Power Substation



Mid-Suffolk Yard



Jamaica Capacity Improvements - Phase I



Jamaica Capacity Improvements - Phase I

❑ Schedule:

- ❑ Platform F Construction (3rd Party)
 - ❑ Award: September 2016 (A)
 - ❑ Completion: 3rd Qtr 2019 (F)
- ❑ Installation of 3-Crossover at Dunton Interlocking (Force Account)
 - ❑ Forecasted Completion (including cutover): 4th Qtr 2018 (F)
- ❑ Universal Crossovers (Force Account): Union, Metropolitan and Beaver
 - ❑ Completion 3rd Qtr 2021 (F)

❑ Budget & EAC:

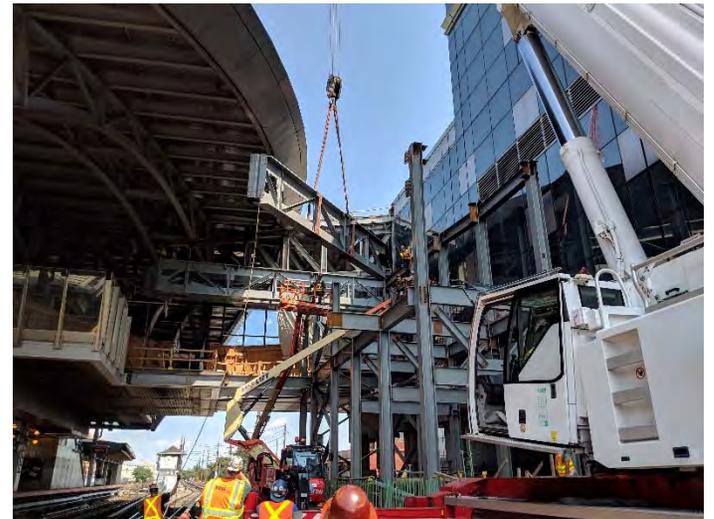
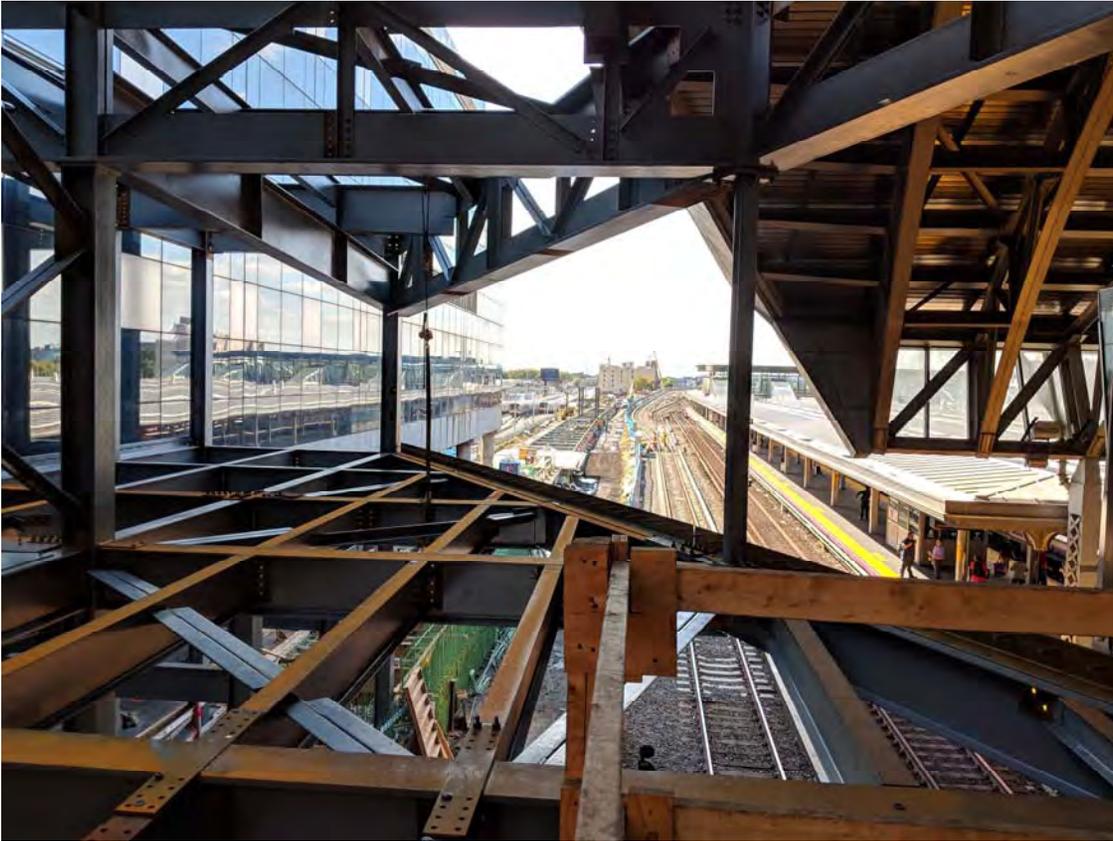
- ❑ Budget: \$301.6M
- ❑ Current: EAC \$301.6M
- ❑ Percent Complete: 42%

❑ Risk Management – Top Risks as of September 2018:

- ❑ 3rd Party Contractor and LIRR Force Account Coordination
- ❑ Force Account Availability
- ❑ 3rd Party Material Procurement



Jamaica Capacity Improvements - Phase I



Portal Bridge Structural Steel Installation

Jamaica Capacity Improvements - Phase I

Installation of Insulated Joints and New Signal Conduits by LIRR Forces



Installation of New Impedance Bond by LIRR Forces



Jamaica Capacity Improvements – Phase II

- ❑ Schedule:
 - ❑ Design Award: December 2017(A)
 - ❑ Design Completion: December 2020 (F)
 - ❑ Construction Start: TBD

- ❑ Budget:
 - ❑ Design & LIRR Support: \$77.5M
 - ❑ Current EAC: \$77.5M
 - ❑ Construction: TBD
 - ❑ Design Percent Complete: 5 %

- ❑ Project Update:
 - ❑ JCI Phase II commenced in Dec of 2017 and is currently in design. Initial survey, data collection, and preliminary design activities are underway.



October 2018 CPOC IEC Project Review

Morris Park Locomotive Shop



Budget and Schedule Review

□ Budget

- The IEC's review shows that the project is currently on Budget.

□ Schedule

- The IEC's review show that the project is currently on Schedule.
- The project management team is working to mitigate a minor delay of contractor mobilization, due to lack of access to the project site.



Risk

- As of September 2018 top project risks are:
 - Long Lead Equipment Approval
 - Contractor Interface with agency and Force Account Services

- In the opinion of the IEC, the agency is taking appropriate steps in mitigating project risks.



October 2018 CPOC IEC Project Review

Mid Suffolk Yard



Budget and Schedule Review

□ Budget

- The IEC's review shows that the project is currently on Budget.

□ Schedule

- The IEC's review shows that the project is on schedule for substantial completion in February 2020.
- The project management team is working to mitigate minor utility installation delays.



Risk

- As of September 2018 top project risks are as follows:
 - Long Lead Track Equipment
 - General Order and Track Outages
 - Delay in PSEG Providing Power to new DC Substation, before end of 2019

- In the opinion of the IEC the agency is being proactive in mitigating project risks.



October 2018 CPOC IEC Project Review

Jamaica Capacity Improvements – Phase I



Schedule and Budget Review

□ Schedule

- The Platform F (3rd Party) contract remains on schedule.
- There have been critical path delays to the signal installation and testing caused by a shortage in force account (FA) manpower caused by other competing priority projects.

□ Budget

- The IEC's review shows that the project remains on budget.



Risk

- The LIRR PM team performs continuous reviews of risk mitigation to manage key risk areas, such as:
 - Coordination between 3rd Party and Force Account crews
 - Force Account availability
 - 3rd Party material procurement, such as: tempered glass, escalator, and structural steel

- In the opinion of the IEC, the agency is taking appropriate steps in mitigating project risks.



October 2018 CPOC IEC Project Review

Main Line Double Track



Budget Review

- The Estimate at Completion (EAC) exceeded the project budget due to the following:
 - Additional Police, Bussing, Flagging and Force Account Labor to support track outages and accelerated schedule, and
 - Increase in scope such as, procurement and installation of three new motor generators including PSEG Service costs.



Schedule Review

- The Main Line Double Track Project successfully reached beneficial use on September 17, 2018 over a year earlier than initial project schedule
 - The IEC would like to congratulate the project team on working efficiently, and overcoming challenges to meet this accelerated schedule.



Capital Program Oversight Committee

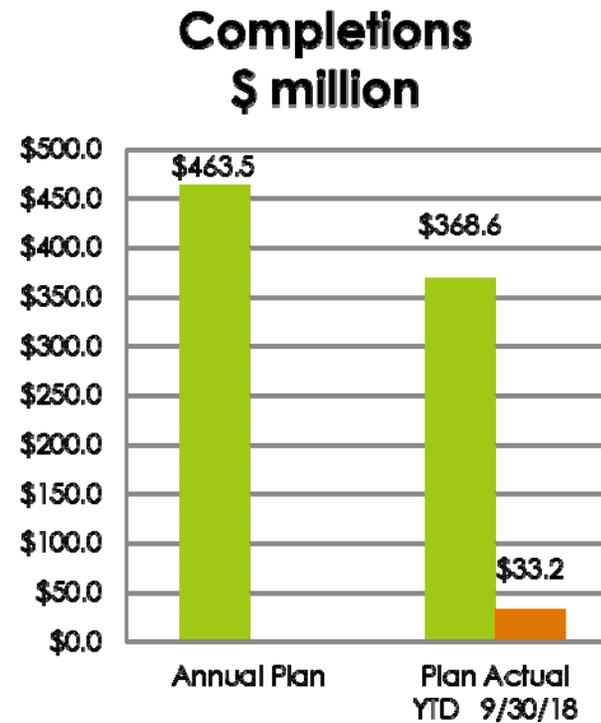
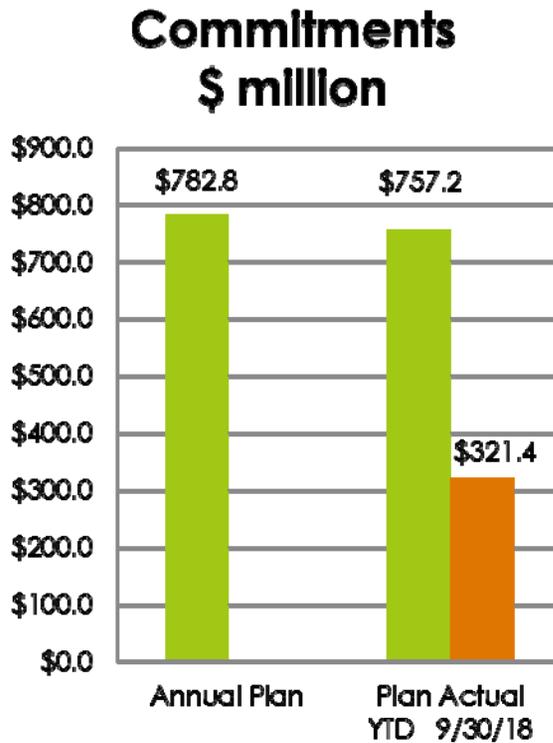
Major Projects - Status

October 2018



Metro-North Railroad

2018 Metro-North Capital Program Goals through September 30, 2018



Harmon Shop - Design-Build Phase V – Stage I

Budget \$316M

EAC: \$316M

% Complete: 96%

Completion: November 2018

Status

Consist Shop

- Pre-functional testing of the DC Bug and Stinger system has commenced
 - Facilitates powered movement of consist cars in and out of the shop.
- 700 Vdc substation pre-functional testing is completed and awaiting SCADA support prior to applying permanent power for final testing.

Electric Multiple Unit (EMU) Annex

- Industrial Equipment functional testing and commissioning is ongoing.
 - Select equipment not accepted as yet; discussions underway
- Functional testing of MEP, HVAC work is nearing completion in employee facilities including offices, lunchroom and locker rooms and shop areas.

Project is within budget

Substantial Completion is now projected to be November 2018

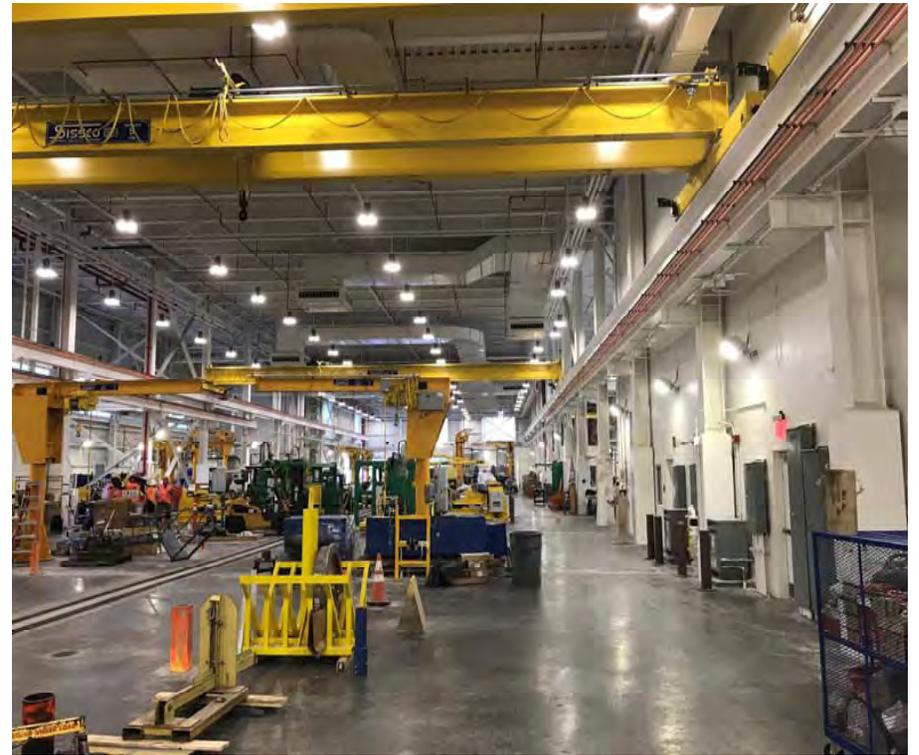
- Additional work for the installation of a temporary electronic shop
- Delay completing substation testing for permanent power



Harmon Shop - Phase V – Stage I Progress Photos



Consist Shop Facility



EMU Annex



Harmon Shop - Design-Build Phase V – Stage 2

Budget \$439M

EAC: \$439M

Award: October 2018

Completion: October 2022

Status

- Replacement of Electric Car Repair Facility
 - September 2018 board approval to Skanska-ECCO III JV.
 - The Award date was extended from August 2018 to October 2018 due to a delay in Stage 1 Substantial Completion.
 - Two (2) month delay is of minimal impact to the overall schedule since this contract is awarded to the same Design-Build firm currently working on Stage 1, who is already mobilized at the job site.
- Stage 2 Award totaling \$365.1million
- Risk Assessment
 - Review of submittals and commissioning problems are listed as the top two schedule risks. Lessons learned from Stage1 will be applied to mitigate these potential risks.



Customer Service Initiatives

Budget: \$220.0M

EAC: \$213.8M

Completion Date: January 2021

- The Customer Service Initiatives (CSI) program of work is a multi-phase project that includes upgrades to customer information systems at:
 - Grand Central Terminal, 19 Outlying passenger stations and other Metro-North facilities
 - Later phases at other New York State stations will be advanced in the 2020-2024 Capital Program.



Customer Service Initiatives

- The program is complemented by Outfront through an MTA-wide advertising concessionaire approved in September 2017
- Eight (8) contracts awarded fall 2017
- Spring 2019: Public Address Central Control and GCT Big Boards to come on line; phased completion of GCT gate curtains at outlying stations will begin
- Project is on schedule and within budget



Customer Service Initiatives

■ Top Risks and Mitigation:

- Multiple interfaces between all contractors and Metro-North
 - **Mitigation:** Construction Manager has prepared an integrated schedule
- Unforeseen site conditions
 - **Mitigation:** Validation of conduit routes and performed surveys; work ongoing
- Metro-North project support
 - **Mitigation:** Integrated schedule to optimize use of Metro-North forces completed; ongoing challenge to coordinate and prioritize forces on MNR Projects



Station Improvement Initiative

The Station Improvement Initiative is a \$135.6 million investment awarded at the end of 2017 to Halmar:

Station	Budget	Completion
White Plains	\$91.3M	12/31/20
Crestwood	\$10.6M	10/31/19
Riverdale	\$9.5M	9/30/18 (A)
Port Chester	\$13.2M	1/31/19
Harlem-125 th St	\$11M	1/31/19

September 30th Deliverables Completed:

- White Plains – Improvements at Mott, Main and Hamilton entrances
Improvements at southern 3rd of island platform
- Riverdale - Kiss and Ride and Overpass
- Port Chester – Westchester Avenue Bridge Painting



Station Improvement Initiative White Plains – Phase 1



Station Improvement Initiative Riverdale



Station Improvement Initiative

Ongoing Work:

- ❑ White Plains – Phase 2
 - ❑ Northern 3rd of island platform including new bathrooms

- ❑ Port Chester:
 - ❑ New Kiss and Ride Plaza with Canopy; with Wi-Fi
 - ❑ Parking Lot Rehabilitation

- ❑ Harlem-125th Street:
 - ❑ New Bathrooms, Ticket Selling Facility
 - ❑ Lobby Improvements with Wi-Fi
 - ❑ Platform Improvements



Port Chester Kiss and Ride



Note: Crestwood to commence in 2019

30 Mile Hudson Line Power/Communication & Signal Two Phase Design-Build - Judlau/TC Electric JV

Budget: \$324 M EAC \$324M % Complete – Phase I - 68%; Phase II - 6% Completion: March 2021

Status

Phased installation of C&S and Power infrastructure, cross-track conduits; elevated platforms for select systems

Phase IA - Croton-Harmon to Tarrytown work is complete with ongoing local commissioning.

Phase IB – Tarrytown to Greystone

- ❑ Phase 1B Completion forecast is April 2019, 22 months behind schedule
- ❑ Project forecasts Track 4 returned to service mid-November. Will progress across Track 2 then Track 1 with weekend outages on Track 3 to complete track conduit crossings and (2) equipment platforms

Phase II – Mott Haven to Greystone

- ❑ Construction drawings complete; non-outage work advancing with Phase 1B work
- ❑ Phase II (Final) Completion forecast is March 2021, a 20-month delay



30 Mile Hudson Line Power/Communication & Signal Two Phase Design-Build - Judlau/TC Electric JV

Overall Budget

- Budget: \$324M - Phase I: \$187M; Phase II: \$137M
 - Phase I Budget increased to account for scope increase to Gannet Fleming contract to replace HAKS for CSI services
 - Phase II budget impact under review for quantity adjustment increases based on approved construction drawings
 - Time impact analysis for Phase 1A submitted by JV under discussion as well as for the remainder of Phase I impacts
- Mitigation strategies implemented that will continue:
 - Maintain elevated flag support 16 (33%) where available
 - Review of outage sequencing and system routing for efficiency and to protect service

Budget



30 Mile Hudson Line Power/Communication & Signal Two Phase Design-Build -- Judlau/TC Electric JV



Conduit system installation



Installation of signal power manhole at Hasting



Trough installation at North of Greystone



Conduits installation at Ardsley station underneath the platform



Side by side trough and duct bank



4" PVC conduit installation for Signal and Power



Sandy Hudson Line Substation Restoration Replace 3 Hudson Line Substations - Verde/ECCO

Budget: \$45M

EAC: \$45M

% Complete: 88%

Completion: April 2019

Status

- Croton-Harmon, Riverdale and Tarrytown
 - Final commissioning and power cut-over.
 - Completion: April 2019
- Delay incurred: Protracted Testing & Commissioning
 - Testing and commissioning of the Supervisory Control and Data Acquisition system
 - Coordination with Con Edison
 - Limited Force Account resources available (e.g. - Power, Comm & Signal) to cover multiple significant projects, (PTC install, multiple Cable Express projects)



Sandy Hudson Line Substation Restoration Replace 3 Hudson Line Substations- Verde/ECCO



Installation of ladder at the platform at Croton-Harmon substation



Termination of cables at Croton-Harmon substation



SCADA Testing at Tarrytown



Water testing at Riverdale substation

October 2018 CPOC IEC Project Review

MNR Harmon Consist Shop Replacement
Phase V, Stages 1 & 2



Stage 1 Review

□ Schedule

- The Stage 1 schedule issues the agency described will not affect the completion of the overall Croton Harmon program.
- Minor additional delays are still possible due to the uncertain nature of testing and commissioning.

□ Budget

- The project is currently within budget. Based on the IEC's review of the budget, there is still a small amount of contingency remaining until the end of the year.



Stage 2 Review

- Phase V – Stage 2 design/build contract is scheduled to be awarded in October 2018, two months later than previously forecast.
 - The 48-month project duration remains the same.
 - The Stage 2 design/builder is the same as Stage 1 making for an efficient transition.
 - Coordination between stages is required for moving personnel out of the existing building to not delay demolition.
- The negotiated cost was below the estimate allowing the inclusion of one of the option items and reducing the overall budget.



Stage 2 Risk Discussion

- The project team is working on mitigation strategies for the key project risks as follows.
 - The overall risk results were presented in last month's CPOC book.
- The top schedule risks are:
 - Problems with building commissioning
 - Delays in the design/build submittal reviews.
 - Issues with pile installation.
- The top post-award cost risks are:
 - Excessive change orders
 - Extended overhead due to project delay
 - Owner driven design changes



October 2018 CPOC IEC Project Review

MNR - Customer Service Initiatives



Schedule and Budget Review

□ Schedule

- Based on our review the IEC concurs that the program is on schedule.
 - The IEC notes that access to GCT work areas and higher priority projects competing for MNR Flagging resources remain a challenge.

□ Budget

- Based upon our review the IEC agrees that the program is currently on budget.



Program Observations

- ▣ Observations
 - ▣ IEC notes that MNR is implementing the risk mitigations identified in the May 2018 CPOC presentation.



October 2018 CPOC IEC Project Review

MNR Hudson Line Sandy
Restoration/Resiliency



Schedule and Budget Review

□ Schedule

- The Phase I and II schedules are unchanged since the previous CPOC due to improved production rates in the current stage.
- In the IEC's opinion, the current Phase I and II schedules assume achievable production rates.

□ Budget

- The Phase I and II budget/EAC was increased since the previous CPOC due to additional soft costs needed for construction management due to the extended schedule. Based on the IEC's review of the schedule, there will likely be additional agency costs in Phase I and additional costs for anticipated quantity adjustments and change orders in Phase II.

IEC Observations

■ Schedule

- Based on the improved production rates and the forecast ones, the IEC believes that additional delays may be avoided, however, recovery of much of the existing delay is unlikely.

■ Risk Mitigation

- The agency has put risk mitigations in place for the major risks especially those that most impacted Phase IA. The IEC believes that force account will still be a challenge in the current and future phases.



LIRR M-9 and LIRR/MNR M-9A Railcar Procurements Briefing to CPOC October 2018



LIRR M-9 Railcar Procurement

□ Car Quantity

➤ Base Cars: 92

➤ Option Cars: 110

Total M-9 Cars: 202 (M-3 Replacement & Ridership Growth)

□ Budget

	<u>Base Order (92)</u>	<u>Option Cars* (110)</u>	<u>Total (202)</u>
□ Project Budget:	\$402.9M	\$331.3M	\$734.2M
□ Initial EAC:	\$375.0M	\$313.0M	\$688.0M
□ Current EAC:	\$402.9M**	\$318.0M	\$720.9M
□ Contingency:	\$0	\$ 13.3M	\$ 13.3M

* Negotiated Global Settlement for Option Cars: July 13, 2018

** Contains cost of settlement and impact due to project delays



M-9 Railcar Procurement Major Milestone Summary

Milestone	Current Schedule	Approximate Shift from 2017 CPOC
System Qualification Tests and FAls Complete	2 nd Quarter 2018	6 Months
Pilot Car testing in Pueblo and LIRR	Nov 2017 – April 2019	9 Months
92 Base Car Conditional Acceptance	May 2019 - Jan 2020	9 Months (total delay 15 Months)
110 Option Car Conditional Acceptance	Jan 2020 - Dec 2020	N/A



M9s at LIRR Hillside Test Site



M-9 Enhanced Customer Amenities

- ❑ Closed loop seat armrests
- ❑ Electrical outlets on both sides of car in each row of seats
- ❑ Consist car number display ("Car 2 of 6")
- ❑ Front of car exterior destination signs (visible as train approaches station)
- ❑ Powered B-End door
- ❑ ***Improved toilet doors***
- ❑ ***Additional coat hooks in toilet room***
- ❑ ***Additional toilet room air quality treatment***
- ❑ ***Toilet room design improves cleanliness and touch-less experience***
- ❑ ***High Velocity "no touch" toilet room hand drier***
- ❑ ***Scratch proof mirror***
- ❑ Four 32" multimedia screens in each car
- ❑ 4-6 Additional seats per married pair (217 seats/pair)
- ❑ Energy efficient LED lighting
- ❑ Improved ride quality from M-7
- ❑ Text-to-Speech service updates
- ❑ Suspension system flip seats (Prevents slamming)
- ❑ Quieter side doors which operate with less impact force and are easier to open manually in an emergency egress situation
- ❑ Slightly increased width of seats
- ❑ Increased window tint (reduces sun glare)



M-9 Armrest/Electrical Outlets



M-9 Car No. in Consist Feature/Head End Destination Sign



M-9 Pilot Car Interior



M-9 Safety and Security Enhancements

- Positive Train Control (PTC) Equipped
- CCTV - 1 forward facing, 1 in-cab camera and 8 passenger area cameras.
- Enhanced B-End carbody crashworthiness
- Additional speakers in vestibule for clearer public announcements
- Threshold illuminating lights at the side and end doors
- Additional emergency lighting if car batteries are exhausted
- Increased length and height of vestibule grab handles



M-9 Production Car

Kawasaki Motors Manufacturing (KMM), Lincoln Nebraska



Final Car Assembly



Car Interior Wiring Assembly



M-9 Final Assembly

Kawasaki Rail Car (KRC), Yonkers New York

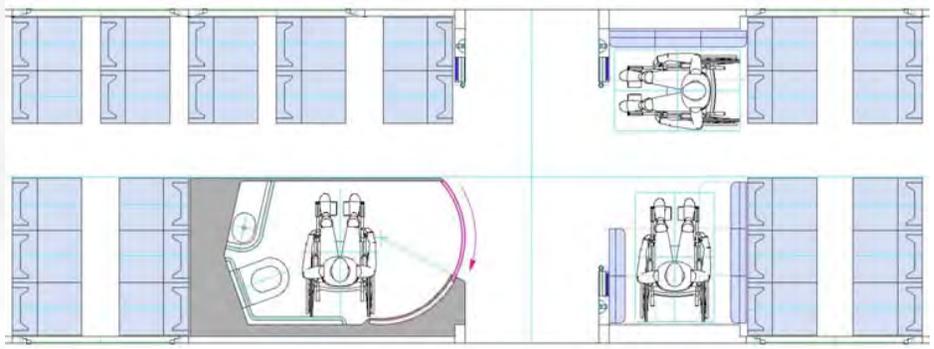
- ❑ Underfloor Equipment
- ❑ Underfloor Wiring
- ❑ Coupler
- ❑ Luggage Rack
- ❑ Seating
- ❑ Truck
- ❑ Function Test



LIRR M-9A Exterior Rendering



LIRR M-9A Interior Rendering



LIRR/MNR M-9A Car Requirements

□ M-9A

➤ LIRR Base Cars (up to):	100
➤ LIRR Option Cars:	114 (60 M-9A + 54 previously M-9 Cars)
➤ LIRR Option Coaches:	<u>30</u>
Total Cars LIRR	<u>244</u>
➤ MNR Option Cars:	200
➤ Total M-9A Cars:	<u>444</u>



LIRR/MNR M-9A Joint Railcar Procurement

- Phase I RFP (Pre-Qualification): October 2018
- Phase II RFP (Cost & Technical): January 2019
- Contract Award: 2nd qtr 2019
- Expedited RFP/Design/Manufacturing model will be pursued
- Contractors will be challenged to accelerate car deliveries to support ESA service, proposals will be evaluated based upon ability to deliver cars earlier and at an increased monthly rate



October 2018 CPOC IEC Project Review

LIRR M-9 Railcar Procurement



Schedule Review

- Delivery completion for the 92-car base order has slipped 9 months since last IEC report in October 2017.
 - The delay is primarily due to issues Kawasaki (KRC) had in delivering the pilot cars to LIRR.
 - The critical path is now being driven by the pilot cars delivery and site testing.



Budget Review

- The current M-9 budget of \$734.2M includes funding for the 110 option cars.
- LIRR and KRC have agreed to the terms and conditions of the GSA. The expeditious execution of the agreement can eliminate potential risk to the budget.



October 2018 CPOC MNR/LIRR PTC Project Update

October 22, 2018



LIRR/MNR Overall PTC Project Status

Item	Comments
Schedule	<ul style="list-style-type: none"> <li data-bbox="464 440 1619 483"><input type="checkbox"/> On target to meet all federal compliance requirements. <li data-bbox="464 553 1892 651"><input type="checkbox"/> RSD applications for both LIRR and MNR were submitted in September 2018. <li data-bbox="464 727 1871 889"><input type="checkbox"/> A new baseline of system software is required to address several core variances required for Revenue Service Demonstration (RSD), and is undergoing test. <li data-bbox="464 954 1850 1052"><input type="checkbox"/> MNR to start RSD on Hudson Line in November; LIRR to start RSD on Port Washington Line in December.
% Complete	<p data-bbox="464 1122 667 1166">LIRR - 84%</p> <p data-bbox="464 1187 682 1230">MNR - 82%</p>
Budget	<p data-bbox="464 1365 625 1409">\$1.037B</p>

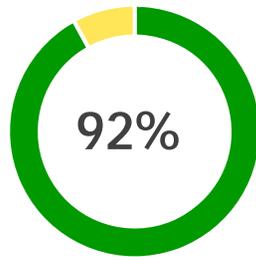
LIRR/MNR PTC Project Progress Dashboard

Long Island Rail Road

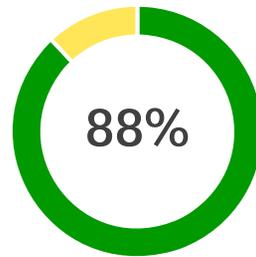
Radio Spectrum



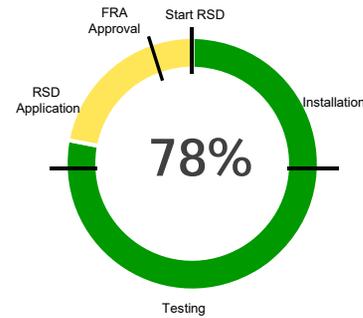
Installation of Hardware



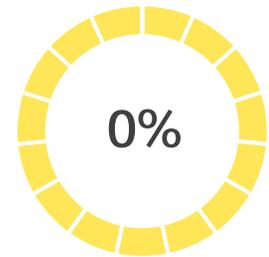
Employees Trained



PTC Operations (RSD) Pilot Lines



Extended RSD (ERSD) 15 Non-Pilot Segments

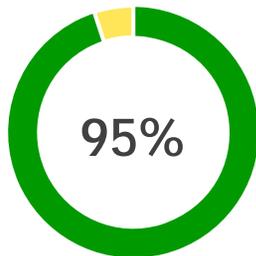


Metro-North Railroad

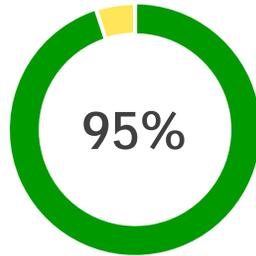
Radio Spectrum



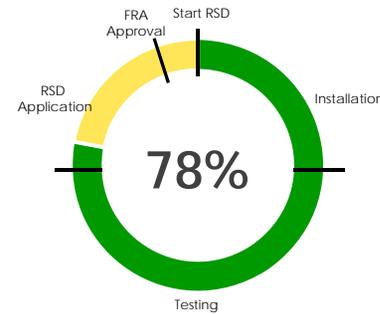
Installation of Hardware



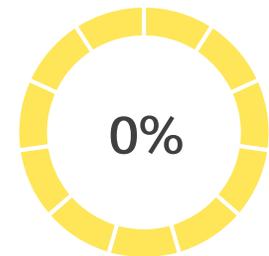
Employees Trained



PTC Operations (RSD) Pilot Lines



Extended RSD (ERSD) 11 Non-Pilot Segments



LIRR PTC – 2018 Hardware Installation Projections

PTC Subsystem	System Requirements	FRA Goals	Installs through September 2018	% Complete FRA Goal	Remaining to meet FRA Goals	18-Sep		18-Oct	18-Nov	18-Dec
						Forecast	Actual	Forecast	Forecast	Forecast
Transponders	3367	3367	2761	82%	606	400	229	606	0	0
WIUs	162	151	151	100%	0	6	6	0	0	11*
C-Cases	111	108	108	100%	0	1	1	0	3*	0
M7	418 **	240	414	100%	0	0	0	0	0	0
DE/DM	45 ****	30	43	100%	0	2	0	2	0	0
C3	23	17	23	100%	0	0	0	0	0	0
E15	16	5	10	100%	0	3	1	2	2	2
***NYAR	10	6	4	67%	2	3	2	2	2	2
M3	44	N/A	1	N/A	N/A	1	1	4	12	19

Data date September 30, 2018

* For future PTC in ESA tunnels

** Four M7 pairs are out of service and installs will be completed prior to return to service.

*** NYAR numbers have been included in our most recent PTCIP RFA per FRA clarification.

**** Two (2) DE/DM locomotives are long term out of service and installs will be completed prior to return to service.

NOTE: The transponder quantities are final count as reflected in our most recent PTCIP RFA.

 Month when FRA goal is met



MNR East of Hudson PTC – 2018 Hardware Installation Projections

PTC Subsystem	System Requirements	FRA Goals	Installs through Sep 2018	% Complete FRA Goal	Remaining to meet FRA Goals	18-Sep		18-Oct	18-Nov	18-Dec
						Forecast	Actual	Forecast	Forecast	Forecast
Transponders	2931	2931	2700	92%	231	143	0	143	88	0
WIUs	84	84	83	98%	1	1	3	1	0	0
Radio Cases	107	107	100	93%	7	4	1	4	3	0
M7	167	167	167	100%	0	0	0	0	0	0
M3	69	32	60	100%	0	12	13	9	0	0
P32	31	23	20 complete	87%/100%	3	3	2	4	4	3
			31 Partial (OBC)							
Cab Cars	51	35	35 complete	100%/100%	0	6	6	6	6	4
			41 Partial (OBC)							
M8	190	106	140 Complete	100%/100%	0	24	18	20	20	10
			190 Partial (OBC)							
BL20	12	9	1 complete 12 Partial	11%	8	2	1	4	4	3
GP35	8	4	1 complete 7 Partial	25%	3	1	0	2	2	3

 Month when FRA goal is met



MNR Port Jervis Line Hardware Installation Projections

PTC Subsystem	System Requirements	FRA Goals	Installs through Sep 2018	% Complete FRA Goal	Remaining to meet FRA Goals	Sep 2018		18-Oct	18-Nov	18-Dec
						Forecast	Actual	Forecast	Forecast	Forecast
Transponders	254	240	162	67%	78	90	100	78	0	0
WIUs	10	10	0	0%	10	0	0	5	5	0
Radio Cases	11	11	11	100%	0	4	9	0	0	0

Note : Port Jervis Line Wayside Hardware Installation Schedule is dependent on NJ Transit PTC Contractor design and deliveries.



Month when FRA goal is met

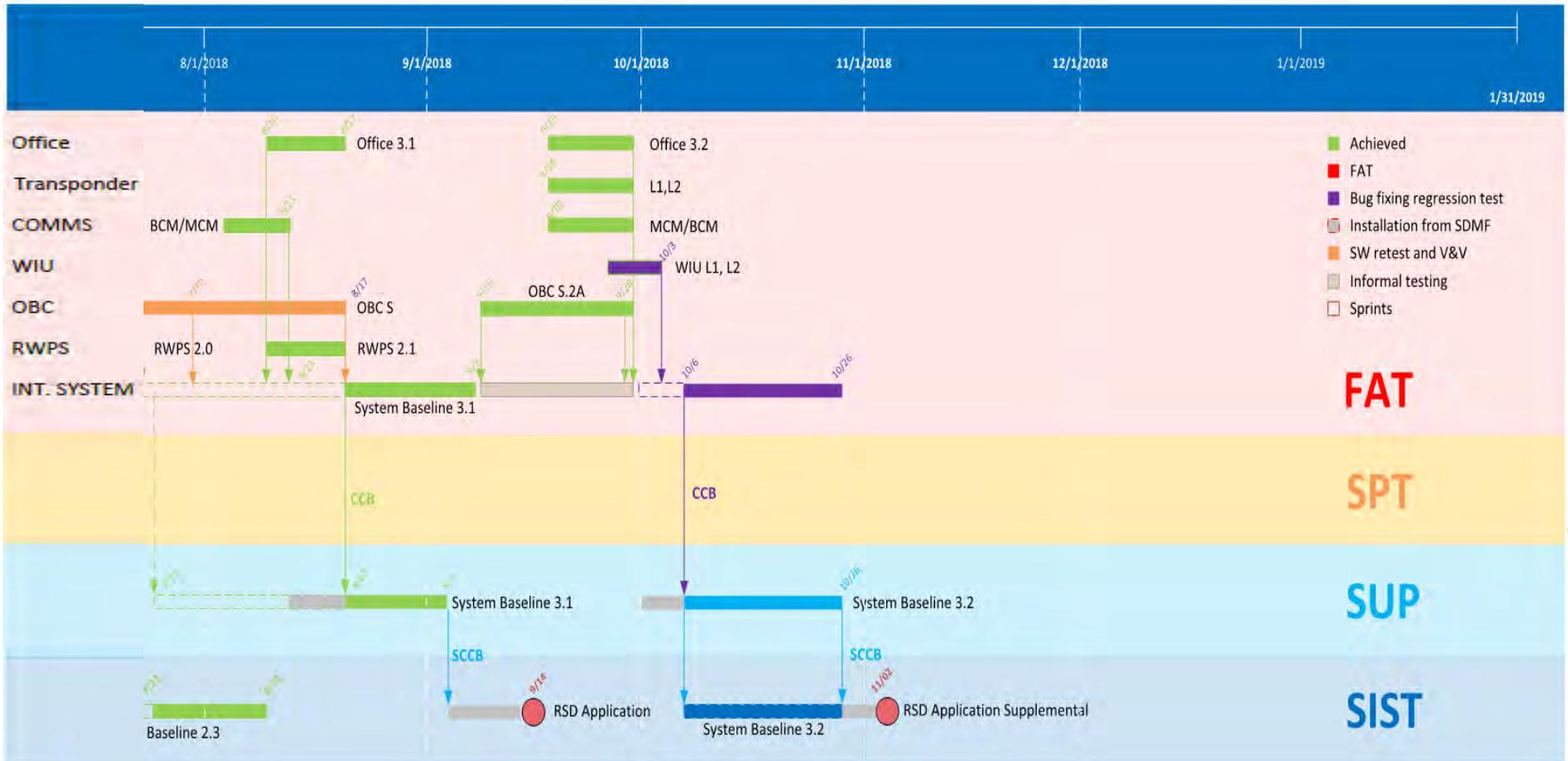
MNR/LIRR Project Update (July to September 2018)

- LIRR/MNR completed regression testing of all PTC subsystems including Office, On-Board, Wayside Interface Units, Communications and Transponders in preparation for Integrated System FAT (ISF).
- LIRR/MNR completed Integrated System FAT using System (Baselines 3.0 and 3.1) with open core variances.
- LIRR/MNR completed Integrated System Pre-FAT for System Baseline 3.2 for RSD.
- LIRR/MNR continued repeatability testing of PTC functions on pilot lines to provide data to support RSD Application.
- LIRR/MNR submitted RSD applications to the FRA for approval.
- LIRR/MNR continued installations of wayside and on-board equipment.
- LIRR/MNR continued training of required employees.
- MNR continues to operate Civil Speed Enforcement (CSE) on all rolling stock.
- LIRR completed installation of PTC radio antenna cables in Atlantic Tunnel.



LIRR/MNR Schedule Software/System Development & Test

- Start of LIRR RSD on Port Washington Line – December 2018 (previously October)
- Start of MNR RSD on Hudson Line – November 2018 (previously October)



SPT = Site Performance Tests
SIST = Site Integrated System Test

SUP = Site Update Period
RSD = Revenue Service Demonstration

CCB = Change Control Board
SCCB = Safety CCB

LIRR/MNR Project Risks and Concerns

- Completion of the project depends on timely resolution of interoperability issues with Amtrak.
- The SI continues to have resource limitations to support both LIRR and MNR.
- LIRR/MNR continue to closely monitor the deliveries of transponder designs and on-board equipment from the SI to complete all their hardware installations.
 - Weekly conference calls to coordinate and communicate real time information.
- LIRR/MNR are working with the SI to address identified software variances which may impact the non-pilot segments.



LIRR/MNR Look Ahead (October to December 2018)

- Complete all onboard and wayside installations.
- Complete all required PTC training to support RSD.
- Complete Integrated System FAT Baseline 3.2 for RSD.
- MNR to complete RSD interoperability testing with AMTRAK/CSX.
- Initiate RSD on pilot segments.
- Meet PTC Compliance at the end of the year.
 - Revise and update PTC Implementation Plans with Alternative Schedule .
 - Submit *Notification and Certification of Compliance* to the FRA to demonstrate that LIRR/MNR have met the statutory criteria for PTC Compliance and qualify for an Alternative Schedule.
- Start Site Performance testing on the non-pilot segments.
- Continue to prepare LIRR/MNR PTC Safety Plans.
- Develop schedule to complete Interoperability with tenant Railroads.
- Obtain approval of RFP for additional spectrum at October Board.



LIRR/MNR PTC Timeline and Look-ahead

July 2018

- ✓ LIRR/MNR started Integrated System FAT (Baseline 3.0).

August 2018

- ✓ Systems Integrator (SI) completed delivery of Train-the-Trainer courses to LIRR.
- ✓ LIRR/MNR completed Integrated System FAT (Baseline 3.0) for RSD with open variances.
- ✓ LIRR/MNR completed the testing of System (Baseline 3.1) for RSD.
- ✓ LIRR/MNR completed Site Update and Regression testing for the RSD segments.

September 2018

- ✓ LIRR/MNR submitted their RSD applications for pilot lines to the FRA for approval.
- ✓ MNR completed loading updated M8 CSE E5 software.



LIRR/MNR PTC Timeline and Look-ahead

October 2018

- ❑ LIRR/MNR to complete Integrated System FAT (Baseline 3.2) for RSD
- ❑ LIRR to complete all on-board and wayside installations of PTC hardware.
- ❑ LIRR/MNR to complete training of all required employees.
- ❑ LIRR/MNR to continue to perform interoperability testing with tenant railroads.
- ❑ MNR to complete uploading updated CSE QL Software to all their on-board equipment.
- ❑ MNR to complete retrofitting of M3s at Arch Street.
- ❑ LIRR to meet conditions for FRA's approval of Substitute Criteria request.



LIRR/MNR PTC Timeline and Look-ahead

November 2018

- LIRR/MNR to complete regression testing to obtain supplemental test data for RSD application.
- MNR to begin RSD on Tarrytown to Croton-Harmon pilot segment (Hudson Line).
- MNR to complete all on-board and wayside installations of PTC hardware.
- LIRR/MNR to update their PTC Implementation Plans (with Alternative Schedule).
- LIRR/MNR to submit *Notification and Certification of Compliance* to FRA stating that LIRR has met all statutory criteria for an Alternative Schedule.

December 2018

- LIRR to initiate RSD on Port Washington line.
- LIRR/MNR to start Site Performance Testing on non-pilot segments.

After January 2019

- LIRR/MNR to submit their PTC Safety Plans to FRA for approval.
- LIRR/MNR to place non-pilot segments in PTC Operations (ERSD).



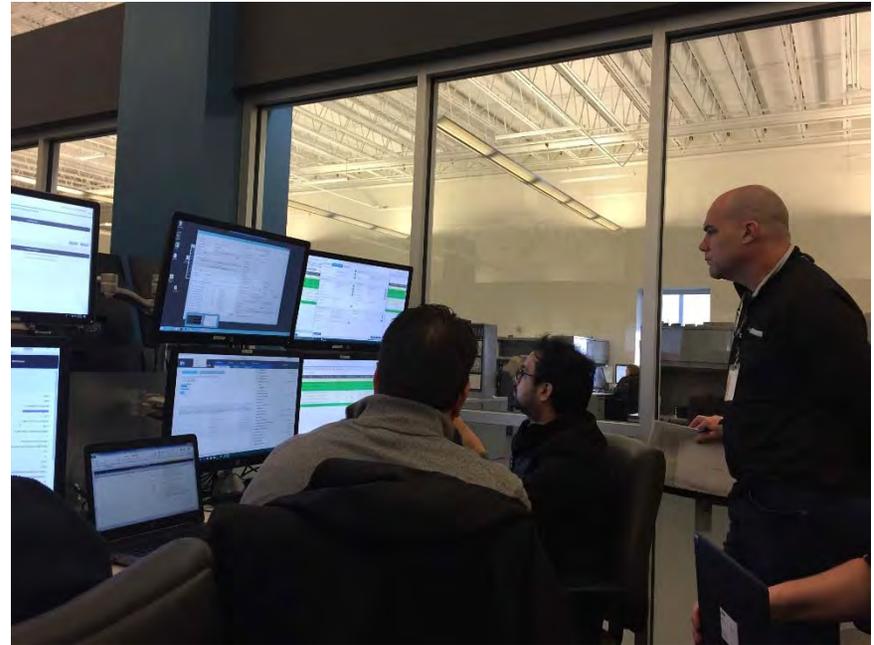
PTC Testing Photos

LIRR FRA-witnessed Regression Testing

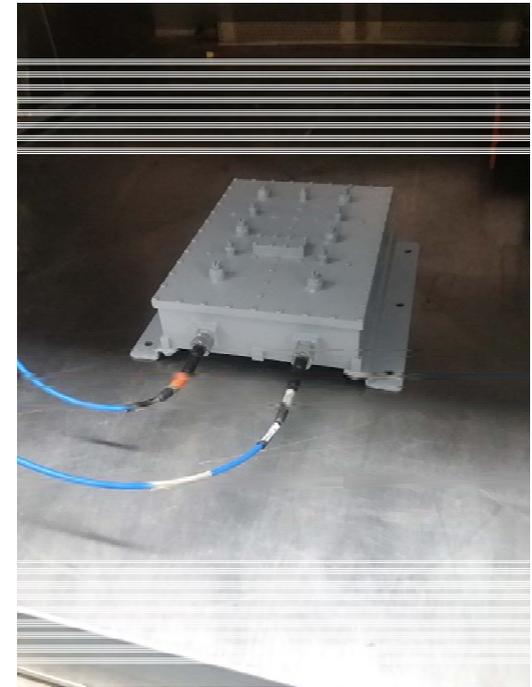


PTC Testing Photos

LIRR/MNR Factory Acceptance Testing



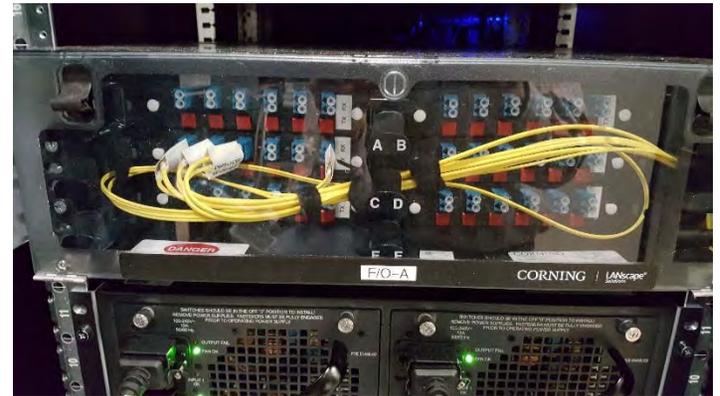
PTC Equipment



Performing Environmental Testing (Temp/Humidity) On-Board Filter



PTC Equipment



Office Safety Servers located at MNR ECC



October 2018 CPOC IEC Project Review

Positive Train Control



Budget Review

- The current project budget is \$1,037M:
 - No change since last report to CPOC in July



Schedule Review

- Successful completion of Integrated System FAT 3.1 was not achieved. A new software release (version 3.2) was developed and is currently under test.
 - The Railroads mitigated this delay by submitting RSD applications to the FRA concurrently with the development of Version 3.2
 - The performance and duration of Revenue Service Demonstration are dependent on successful completion of Version 3.2
- Extended Revenue Service Demonstration (ERSD) for non-pilot lines is now scheduled to start in 2019.



IEC Observations

- Equipment installation and employees training are mostly progressing as planned.
- The project team is developing an “Alternative Schedule” for PTC implementation on non-pilot segments. This requires extensive analysis and coordination and careful planning of track outages.
- Extensive testing activities, including data verification, for non-pilot segments is needed beyond December 2018, in order to achieve project completion.



Project Risks

- The current schedule of starting RSD in December 2018 is predicated on the timely FRA approval of the RSD applications.
- Extended RSD duration may be required in the event the System Integrator is not successful in resolving all variances.
- Additional resources at the Railroads and System Integrator may be required in order to support and provide coverage for the testing and commissioning of simultaneous non-pilot segments.



MTA Capital Program Commitments & Completions

through September 30, 2018

Capital Projects – Major Commitments – September 2018

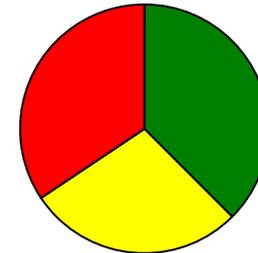
In 2018, agencies plan for a goal of \$7.3 billion in overall commitments with 43 major commitments planned.

Through September, agencies have committed \$4.1 billion versus a \$5.8 billion YTD goal. The shortfall was partly due to delays in the awards of NYCT’s Culver Line Interlocking & CBTC (\$424M), Time Square Reconstruction & ADA Phase 3 (\$259M), ADA: 59th Street/4th Ave (\$45M), MNR’s Harmon Shop Replacement (\$388M), and MTA CC’s Harold Structures (\$100M). Delays with other non-major commitments, such as \$139M in LIRR Expansion Project support costs, \$46M in East Side Access support costs and \$158M of NYCT’s Sandy-related commitments contributed to the balance of the shortfall. Nearly all will be achieved by year-end.

Twelve major commitments were made on time or early, nine were delayed but have now been committed, and eleven other major commitments remain delayed. The delays are explained on the following pages.

By year end, the MTA currently forecasts meeting or exceeding its overall \$7.3 billion goal although doing so is increasingly challenging.

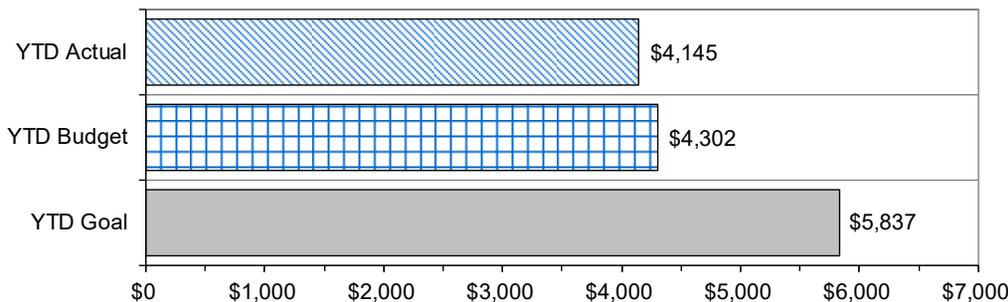
Year-to-Date Major Commitments



	Count	Percent	Change from Prior Month
GREEN = Commitments made/forecast w within Goal	12	38%	-
YELLOW = Commitments delayed beyond Goal (already achieved)	9	28%	-
RED = Commitments delayed beyond Goal (not yet achieved)	11	34%	↑ 2
Total	32	100%	↑ 2

Budget Analysis

2018 Annual Goal	\$7,337	(\$ in millions)
2018 Forecast	102%	of Annual Goal
Forecast left to Commit	45%	(\$3,339)



Year-to-Date Agency Breakdown

2018 Goals	Prior month variance		
	GREEN	YELLOW	RED
New York City Transit			
4 GREEN, 4 YELLOW, 6 RED	---	---	+2 RED
Long Island Rail Road			
4 GREEN, 1 YELLOW	---	---	---
Metro-North Railroad			
2 GREEN, 1 YELLOW, 1 RED	---	---	---
Bridges and Tunnels			
2 GREEN, 1 YELLOW, 1 RED	---	---	---
Capital Construction Company			
1 GREEN, 1 RED	---	---	---
MTA Bus Company			
2 YELLOW	---	---	---
MTA Police Department			
1 RED	---	---	---

Capital Projects – Major Commitments – September 2018 – Schedule Variances

Project	Commitment	Goal	Forecast	Project	Commitment	Goal	Forecast
11 All-Agency Red Commitments (2 new this month)							
NYCT				LIRR			
<i>Passenger Stations</i>				<i>Power</i>			
Times Square Reconstruction & ADA, Phase 3 - Shuttle	Construction Award	Jun- 18	Dec- 18	Sub Station Components	Construction Award	Jun- 18	Oct- 18
		\$259.3	\$285.2			\$13.6	\$13.6
Award re- scheduled due to additional time needed to review and approve final design estimate. Request to advertise is in process. Project cost increased due to additional scope, changes to construction phasing, and extension of construction duration by 3 months.				Project delayed for rebid due to vendor disqualification. A new advertisement was progressed in July 2018.			
ADA: 59 Street / 4th Avenue	Construction Award	Jul- 18	Oct- 18	MNR			
		\$44.9	\$55.1	<i>Shops & Yards</i>			
Design completion delay due to NYC DOT Office of Construction Mitigation and Coordination performing a User Cost Benefit Analysis to provide concurrence to the recommended maintenance and protection of traffic scheme taking longer than expected.				Harmon Shop Replacement - Phase V	Construction Award	Jul- 18	Oct- 18
						\$388.4	\$388.4
				Due delays with the completion of Harmon Shop Replacement Stage 1, the start date for Stage 2 will now be October 2018.			
<i>Track</i>				B&T			
Mainline Track & Switch Program (6 Projects) - 3rd Qtr	Construction Award	Aug- 18	Apr- 19	Tower Pier Rehab/Construct Mooring Platform/Elevator Rehabilitation	Construction Award	Jul- 18	Oct- 18
		\$44.0	\$44.0			\$27.2	\$27.2
Five of the six projects remain uncommitted at this time. Award of the Flushing line Switches re-scheduled to April 2019 due to track access issues.				Technical proposals was not ready for the July Board meeting. There was no August meeting, so it will be presented at the September Board meeting.			
<i>Traction Power</i>				MTA CC			
Low-Resistance Contact Rail & Negative Cables / QBL	Construction Award	Jun- 18	Oct- 18	<i>East Side Access</i>			
		\$25.5	\$63.2	Harold Structures - Part 3A: B/C Approach (CH058A)	Construction Award	Jul- 18	Oct- 18
Project schedule delayed due to a budget modification staff summary required to fund budget shortfall. Project cost reflects latest estimates at advertisement with increases to the bid estimate and support costs.						\$100.2	\$78.5
<i>Signal Modernization</i>				Advertisement was delayed to align contract with rail road resource availability, and as a result, award date was impacted.			
Culver Line Interlockings & CBTC (New Item)	Construction Award	Sep- 18	Dec- 18	MTA Police			
		\$424.0	\$430.3	SI County District Office	Construction Award	Aug- 18	Oct- 18
Project award re- scheduled due to several bid postponements to review and answer bidders questions. Project Cost increased slightly reflecting estimate at advertisement.						\$9.0	\$9.0
<i>Shops & Yards</i>				The commitment delay is due to contractors' requests for additional time to review the project. In order to maximize vendor interest these accommodations were made and the bid opening was rescheduled to September.			
207 St Maintenance & Overhaul Shop Roof & Component Repair (New Item)	Construction Award	Sep- 18	Oct- 18				
		\$66.3	\$57.6				
Project award delayed due to several bid postponements. Project cost decreased reflecting favorable bids received.							

Capital Projects – Major Commitments – September 2018 – Schedule Variances

Project	Commitment	Goal	Actual	Project	Commitment	Goal	Actual
9 All-Agency Yellow Commitments (0 new this month)				B&T			
NYCT				Roadways and Decks			
<i>Passenger Stations</i>				Reconstruct Manhattan Toll Plaza Structure & Ramps			
ADA: Eastern Parkway-Brooklyn Museum / EPK	Construction Award	May- 18	Aug- 18 (A)	Construction Award		Jul- 18	Aug- 18 (A)
		\$39.3	\$39.2		\$21.0	\$21.0	
Project award re-scheduled due to delay in advertisement.				Delay due to advertisement date being extended for final design approval.			
MTA Bus Company				Bus Company Projects			
<i>ADA: Gun Hill Rd / Dyre</i>				53 Articulated Buses			
ADA: Gun Hill Rd / Dyre	Construction Award	Mar- 18	Apr- 18 (A)	Fleet Procurement		Apr- 18	Jun- 18 (A)
		\$37.8	\$52.0		\$53.2	\$50.2	
Delayed due to final procurement activities. Project cost increased reflecting unfavorable bids received as well as additional scope items.				Award was revised due to an audit for Buy America adherence.			
<i>ADA: Bedford Park Boulevard / Concourse</i>				Bus Digital Information Screens (DIS)			
ADA: Bedford Park Boulevard / Concourse	Construction Award	Mar- 18	Apr- 18 (A)	Construction Award		Apr- 18	Jun- 18 (A)
		\$37.8	\$29.7		\$11.7	\$7.5	
Delayed due to several bid extensions and final procurement activities. Project cost reflects favorable bids received.				Schedule was pushed out 2 months due to a lengthy award process.			
<i>Replace 12 Traction Elevators / Broadway- 7th Avenue</i>							
Replace 12 Traction Elevators / Broadway- 7th Avenue	Construction Award	Mar- 18	Apr- 18 (A)				
		\$88.1	\$97.9				
Delayed due to final procurement activities. Project cost increased due to scope changes and unfavorable bids.							
MNR							
<i>Signals & Communications</i>							
<i>Harlem Cable Installation</i>							
Harlem Cable Installation	Construction Award	Feb- 18	Mar- 18 (A)				
		\$47.7M	\$47.7M				
The delay in award was due to pre- award activities required to comply with the contract's diversity compliance goals.							
MTACC							
<i>East Side Access</i>							
<i>Harold Structures - Trackwork (CH057D)</i>							
Harold Structures - Trackwork (CH057D)	Construction Award	Mar- 18	Apr- 18 (A)				
		\$48.5	\$36.4				
Award was delayed due to the contractor's delay in finalizing administrative elements required by procurement to award the contract. Award value reflects good bid savings.							

Capital Projects – Major Completions – September 2018

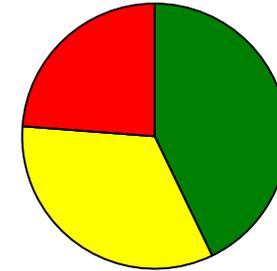
In 2018, agencies plan for a goal of \$6.3 billion in overall completions, with 39 major completions.

Through September, agencies have completed \$2.4 billion versus a \$3.8 billion YTD goal. The shortfall is partly due to delays with MNR's completion of Harmon Shops Improvements (\$316M), the NYCT 34th Interlocking/6th Ave (\$165M), West 4th St Interlocking/6th Ave (\$154M), the acceptance of 62 B-Division R179 Cars (\$153M), and the completion of assorted mainline track replacement projects (\$256M), most of which are forecast for achievement by year end.

Nine major completions were made on time or early, seven major completion were delayed but have now been completed, and five major completions remain delayed. The delays are explained on the following pages.

By year end, the MTA currently forecasts meeting 93% of its overall \$6.3 billion completion goal with 23 commitment forecast for 3rd Quarter. This shortfall is primarily due to two Sea Beach stations project (\$393) slipping into 2019.

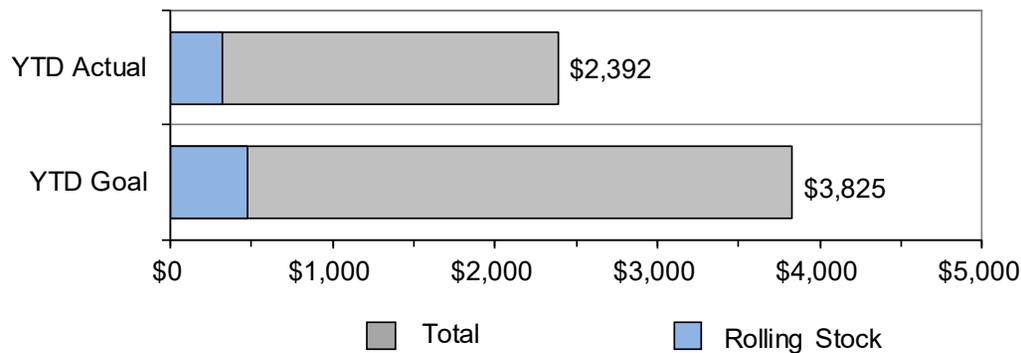
Year-to-Date Major Completions



	Count	Percent	Change from Prior Month
GREEN = Completions made/forecast w ithin Goal	9	43%	↑ 1
YELLOW = Completions delayed beyond Goal (already achieved)	7	33%	↑ 3
RED = Completions delayed beyond Goal (not yet achieved)	5	24%	-
Total	21	100%	↑ 4

Budget Analysis

2018 Annual Goal \$6,299 (\$ in millions)
 2018 Forecast 93% of Annual Goal
 Forecast left to Complete 59% (\$3,460)



Year-to-Date Agency Breakdown

2018 Goals	Prior month variance		
	GREEN	YELLOW	RED
New York City Transit			
1 GREEN, 3 YELLOW, 2 RED	----	+1 YELLOW	+1 RED
Long Island Rail Road			
2 GREEN, 3 YELLOW	+1 GREEN	+2 YELLOW	-2 RED
Metro-North Railroad			
1 GREEN, 1 RED	----	----	----
Bridges and Tunnels			
4 GREEN, 1 RED	----	----	----
Capital Construction Company			
1 GREEN, 1 RED	----	----	+1 RED
MTA Bus Company			
	----	----	----
MTA Police Department			
1 GREEN	----	----	----

Capital Projects – Major Completions – September 2018 – Schedule Variances

Project	Completion	Goal	Forecast	Project	Completion	Goal	Forecast
5 All-Agency Red Completions (3 new this month)							
NYCT							
<i>Signal Modernization</i>							
34th St Interlocking / 6th Avenue (New Item)	Construction	Sep- 18	Nov- 18				
		\$164.8	\$172.1				
Project schedule delay due to unfinished work involving the decommissioning of the old tower and the in-service of the new dispatcher's office. Project cost includes reserves for additional TA Labor and engineering services							
West 4 St Interlocking / 6th Avenue (New Item)	Construction	Sep- 18	Dec- 18				
		\$153.7	\$165.9				
Project schedule delay due to unfinished work involving the decommissioning of the old tower and the place in-service of the new dispatcher's office. Project cost includes reserves for additional TA Labor and engineering services							
MNR							
<i>Shops and Yards</i>							
Harmon Shop Improvements	Construction	Jun- 18	Oct- 18				
		\$315.6	\$315.6				
Scheduled completion is now projected to be October 2018 due to a delay performing SCADA testing for permanent power, equipment deliveries, and testing of the Consist Shop DC substation and Bug and Stinger system.							
B&T							
<i>Tunnels</i>							
Queens Midtown Tunnel - Vent Building Electrical Upgrades/Flood Mitigation - Equipment Relocation	Construction	Jul- 18	Oct- 18				
		\$57.4	\$57.4				
Additional time required for motor modifications critical to the vent building.							
MTACC							
<i>7 Line Extension</i>							
Construction: (Site P) Core & Shell (New Item)	Construction	Sep- 18	Nov- 18				
		\$102.2	\$102.2				
Although the secondary entrance opened on September 1, 2018, Substantial Completion is delayed due to longer than expected duration to complete administrative items, such as As-Built submittals for all critical systems.							

Capital Projects – Major Completions – September 2018 – Schedule Variances

Project	Completion	Goal	Actual
7 All-Agency Yellow Completions (3 new this month)			
NYCT			
<i>Line Equipment</i>			
Vent Plant: 46th Street- Northern Blvd / Queens Blvd Line	Construction	May- 18 \$80.9	Aug- 18 (A) \$78.9
Project completion schedule was extended by three months due to testing issues.			
<i>Signals and Communications</i>			
2 Interlockings: Union Turnpike & 71 Av	Construction	May- 18 \$297.8	Jun- 18 (A) \$306.0
Delay due to new scope added to the project. An additional work order was issued for the installation of a communication component.			
<i>Buses</i>			
Purchase 92 Articulated Buses (Nova) (New Item)	Fleet Procurement	Mar- 18 \$83.9	Sep- 18 (A) \$82.2
All buses delivered except one single pilot bus being retrofitted. Additional technical requirements, processed post-award, have resulted in a longer turn-around time for Nova's overall production of each bus.			
LIRR			
<i>Signals and Communications</i>			
New Elevators - Flushing - Main St	Construction	Jun- 18 \$ 14.9	Jul- 18 (A) \$ 14.9
Delay due to vandalism at elevator site. Repairs are complete.			
<i>Track Improvement</i>			
Main Line Double Track Ph 2 (Signal Equipment) (New Item)	Construction	Apr- 18 \$30.0	Sep- 18 (A) \$30.0
Delay due to additional signal modifications required of the manufacturer.			
Main Line Double Track Ph 2 (Track and Systems) (New Item)	Construction	Jun- 18 \$71.0	Sep- 18 (A) \$73.3
Budget increase due to 3rd party construction change orders.			

Project	Completion	Goal	Actual
MTA CC			
<i>East Side Access</i>			
Harold Tunnel A Cut and Cover Structures (CH061A)	Construction	May- 18 \$42.0	Aug- 18 (A) \$42.0
Contractor productivity was less than expected. Resource shortages limited ability to mitigate delays.			

MTA Capital Program Commitments & Completions Quarterly Report of Prior Years' Delays

Prior Years' Major Commitments – Quarterly Update: September 2018

The status of 2014 through 2017 major commitments delayed beyond 2017 are tracked until committed and reported to CPOC quarterly.

In 2014, agencies set an overall MTA commitments goal of \$6.5 billion including 54 major commitments. In 2014, \$5.8 billion was committed, including 39 major commitments. NYCT's Rutgers Tube restoration has been rescheduled until 2022 and is no longer being tracked by this report. To date, \$7.2 billion has been committed against the original \$6.5 billion goal.

In 2015, agencies set an overall MTA commitments goal of \$3.2 billion including 34 major commitments. In 2015, 25 major commitments and a total of \$2.9 billion were made. The final two projects were committed this year. To date, \$3.6 billion has been committed against the original \$3.2 billion goal.

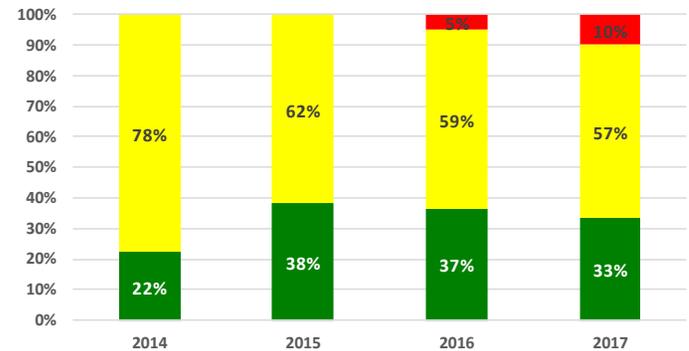
In 2016, agencies set an overall MTA commitments goal of \$6.6 billion including 41 major commitments. In 2016, 27 major commitments and a total of \$5.0 billion were made. Of the remaining projects, two remain delayed. One is forecast for award in 2018 and one in the first quarter in 2019. To date, \$6.3 billion has now been committed.

In 2017, agencies set an overall MTA commitments goal of \$7.3 billion including 51 major commitments. In 2017, the MTA achieved 100% of its \$7.3 billion commitments goal, including 39 major commitments. One project will no longer be progressed at this time, and will not be tracked by this report. Of the remaining projects, three were awarded to date in 2018, three are forecast for award in the 4th quarter of 2018, and two projects are forecast for award beyond 2018.

Actual		MTA-Wide Prior Years' Major Commitments														Post 2018
Goal	Total	On Time	Achieved Late	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	
	180															
2014	54	12	42													
2015	34	13	19				1		1							
2016	41	15	23									1			1	1
2017	51	17	22		2		2	1		1		1	1		2	2

This chart tracks when all major commitments are forecast/achieved versus original goal, starting with those that were committed within 2014, 2015, 2016 and 2017, followed by those that slipped beyond 2017. Green represents projects that were achieved on-time, yellow represents projects that were delayed but have since been committed, and red represents projects that are still delayed. Projects that are red will become yellow when they are committed.

% of Project Status by Year



GREEN = Commitments made/forecast w ithin Goal **YELLOW** = Commitments delayed beyond Goal (already achieved) **RED** = Commitments delayed beyond Goal (not yet achieved)

Prior Year Major Commitments – September 2018 – Schedule Variances
Actual Results Shaded

Project	Commitment	Goal	Forecast
7 All-Agency Red Commitments			
NYCT			
<i>Passenger Stations</i>			
ADA: 68 St- Hunter College / Lexington	Construction Award	Sep-16 \$66.8M	Mar-19 \$116.3M
Award Schedule delayed to 2019 due to pending resolution of real estate issues at adjacent properties. Project cost increased because of added architectural , structural, electrical and utility relocation work. The complexity of the utility relocation under the street work with limited space constraints requires multiple construction phasing to keep the street open to both vehicular and pedestrian traffic throughout construction.			
Access Improvements: Grand Central: Phase 2	Construction Award	Jul- 17 \$66.7M	Jul- 19 \$66.7M
Procurement will be done through multiple phases reflecting the various activities in the project.			
<i>Service Vehicle</i>			
Purchase Locomotives	Purchase Award	Dec- 17 \$128.3M	Dec- 18 \$128.3M
Responses to NYCT's industry outreach necessitated changes to the technical specifications in order to comply with New York State Department of Labor requirements regarding workers' exposure to diesel exhaust emissions.			
<i>Misc.</i>			
Livingston Plaza Electrical and Mechanical System Improvements	Construction Award	Dec- 17 \$62.7M	Jan-20 \$62.6M
The project is split into 2 parts (Contract A, the redundant Dry Coolant System for the 4th Floor Data Center and Contract B for the remainder scope). Contract A was awarded in July, 2018 while design for contract B started in July as well. Award of contract B is not expected until early 2020.			
MNR			
<i>Sandy</i>			
Power and Signal Mitigation	Construction Award	Nov- 17 \$20.6M	Oct- 18 \$20.6M
Due to procurement challenges, contract was readvertised in February 2018 and is scheduled to be awarded in October 2018.			

Project	Commitment	Goal	Forecast
MTA CC			
<i>Penn Station Access</i>			
GEC Design	Construction Award	Dec- 17 \$37.0M	Dec- 18 \$33.5M
Delay due to change in procurement strategy. Award may be delayed due to the need to obtain Amtrak agreement.			
MTA PD			
<i>Communications</i>			
Penn Station / Atlantic Tunnel Radio Upgrade	Construction Award	Dec-16 \$25.0M	Dec-18 \$25.0M
The continuing schedule delay is due to ongoing MOU negotiations between users of the radio system as well as for considerations of other construction work at Penn Station external to this project.			

Prior Year Major Commitments – September 2018 – Schedule Variances
Actual Results Shaded

Project	Commitment	Goal	Actual
10 All-Agency Yellow Commitments (3 new this month)			
NYCT			
<i>Subway Cars</i>			
Purchase 525 R211 Cars & 10 Open Gangway	Construction Award	Jun- 17 \$1534.5M	Feb- 18 \$1735.9M
Contract awarded in February, but Board approved in 12/2017. Bids were higher than goal, but lower than the July 2017 Capital Program Amendment's revised budget.			
<i>Signals and Communications</i>			
ISIM- B Module 3: Rail Traffic Systems (New Item)	Construction Award	Aug- 17 \$91.7M	Jul- 18 \$98.5M
Project award extended further due to protracted negotiations for this RFP contract			
<i>Sandy</i>			
Sandy: 148th Yard Long- Term Perimeter Protection & Power Cable	Construction Award	Nov-15 \$135.1M	Apr-18 \$88.7M
Delayed from August 2017 to April 2018 due to delay in obtaining the necessary easement agreement with an adjacent property owner. Project cost reflects favorable bids received.			
Sandy Mitigation: Upgrade Emergency Booth Comm System	Construction Award	Nov- 17 \$67.1M	Apr- 18 \$75.3M
Project awarded in April 2018. Award was delayed due to protracted RFP procurement process. Project cost increased reflecting negotiated amount.			
Sandy: 207th Yard Perimeter Protection & Power Cable (New Item)	Construction Award	Oct-16 \$222.7M	Sep-18 \$199.0M
Delayed to September 2018 due to rescheduling of bid opening to accommodate bidders' requests. Lower estimate for perimeter protection scope reduces the overall cost. Scope for yard signals, track and switches is included in 2018 goals for NYCT.			
<i>Work Equipment</i>			
Work Train & Special Equipment: 54 Flat Cars	Purchase Award	Dec-15 \$33.5M	Jun-18 \$45.2M
Awarded in June 2018. Project cost increased reflecting final negotiated price and the increased quantity from 54 to 65 flat cars			

Project	Commitment	Goal	Actual
B&T			
Electrical/Mechanical Rehab of HR Lift Span	Construction Award	Nov- 17 \$17.0M	May- 18 \$30.9M
Design/Build teams requested additional time to review RFP documents. The Design-Build contract was awarded May 2, 2018.			
MTA PD			
<i>Communications</i>			
Public Radio Phase 3	Construction Award	Feb-17 \$5.7M	Apr-18 \$5.4M
Motorola Radio Equipment originally assumed for purchase in 2017 was delayed to align the purchase with overall PD radio system upgrade progress.			
MTA Bus Company			
<i>Depot Projects</i>			
Security: JFK and Spring Creek	Construction Award	Sep-17 \$9.2M	Feb-18 \$8.5M
Award slipped due to a protracted procurement and a longer than expected award process following bidding.			
MTA CC			
<i>East Side Access</i>			
Systems Package 2 : Installation of Signals (New Item)	Construction Award	Jun- 17 \$44.9M	Sep- 18 \$60.9M
Additional time required for extended review and negotiation process.			

Prior Years' Major Completions – Quarterly Update: September 2018

The status of 2014 through 2017 major completions delayed beyond 2017 are tracked until achieved and are reported to CPOC quarterly.

In 2014, agencies set an overall MTA completions goal of \$5.7 billion including 46 major completions. In 2014, \$4.5 billion was completed, including 28 major completions. Of the remaining projects, one has been deferred and another is no longer being tracked. The final project was completed in June 2018. To date, \$6.5 billion has been completed against the original \$5.7 billion goal.

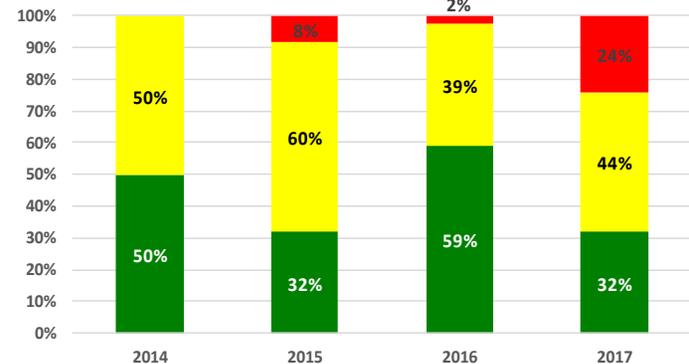
In 2015, agencies set an overall MTA completions goal of \$2.6 billion including 25 major completions. In 2015, 19 major completions totaling \$2.1 billion were made. Of the remaining projects, two remain delayed and are forecast for completion in 2018. To date, \$2.2 billion has been completed against the original \$2.6 billion goal.

In 2016, agencies set an overall MTA completions goal of \$4.6 billion including 43 major completions. In 2016, 36 major completions were made including several MTACC contracts associated with 2nd Ave Subway Phase 1 which achieved beneficial use in December 2016. One remaining project is now forecast for completion in the 4th quarter of 2018. To date, over \$4.5 billion has been completed.

In 2017, agencies set an overall MTA completions goal of \$5.0 billion including 34 major completions. In 2017, twenty-four major completions were achieved. Two projects were completed in the first quarter, and seven remain delayed.

Actual Goal	MTA-Wide Prior Years' Major Completions														Post 2018	
	On Time	Achieved Late	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18		
Total	148															
2014	46	23	22					1								
2015	25	8	15									1	1			
2016	43	26	15						1		1			1		
2017	34	16	8	1		1						3			3	2

% of Project Status by Year



This chart tracks when all major completions are forecast/achieved versus original goal, starting with those that were completed within 2014, 2015, 2016, and 2017 followed by those that slipped beyond 2017. Green represents projects that were achieved on-time, yellow represents projects that were delayed but have since been completed, and red represents projects that are still delayed. Projects that are red will become yellow when completed.

GREEN = Completions made/forecast within Goal **YELLOW** = Completions delayed beyond Goal (already completed) **RED** = Completions delayed beyond Goal (not yet achieved)

Prior Year Major Completions – September 2018 – Schedule Variances

Project	Completion	Goal	Forecast	Project	Completion	Goal	Forecast
11 All-Agency Red Completions				MNR			
NYCT				Sandy			
<i>Signals and Communications</i>				Power Infrastructure Restoration - Substations			
PA/CIS at 45 Stations - Install Cable	Construction Completion	Dec-15	Dec-18			Aug-17	Dec-18
		\$56.1M	\$56.0M			\$43.8M	\$44.4M
Project delayed to 2018 due to slow progress of work. In-house forces were diverted to address other safety sensitive projects.				The completion date has been pushed back to accommodate Con Edison's utility cut-over schedule. Final commissioning, testing, and acceptance phase will immediately follow.			
<i>CBTC Flushing Line</i>				<i>Power</i>			
CBTC Flushing Line	Construction	Nov-17	Dec-18	Substation Bridge 23 - Construction	Construction	Oct-17	Oct-18
		\$505.2M	\$563.6M			\$41.7M	\$41.7M
Project is delayed due to hardware and software issues that need to be addressed to achieve system stability and system performance. The project cost was increased due to higher force account costs, car equipment installation, increased costs for 3rd rail power removal, and additional cost for Consultant Construction Administration & Independent Safety Assessor (ISA).				Delay due to fabrication of the substation equipment taking longer than expected. Additional time was required for system integration to ensure all equipment were compatible.			
<i>Subway Cars</i>				MTACC			
Accept 62 R179 Rail Cars	Fleet Purchase	Dec-17	Mar-19	<i>East Side Access</i>			
		\$162.8M	\$162.8M	Plaza Substation and Structures (CQ032)	Construction Completion	Aug-16	Dec-18
No cars were accepted in 2017. 236 cars are now scheduled to be accepted throughout 2018, while the remaining 64 cars (including these 62 cars) are scheduled in 1st Qtr 2019.				Completion of final work items has taken longer than expected. Resolution of leaks and duct bench issues have taken longer than expected.			
<i>Depots</i>				Manhattan Northern Structures (CM006)			
Bus Command Center Construction	Construction	Nov-17	Oct-18		Construction	Jun-17	Dec-18
		\$51.4M	\$57.2M			\$361.6M	\$361.6M
Substantial Completion is delayed to August 2018 due to delay in installing components for building enclosure, interference of sprinkler heads with other components in the operating theater, delay in the installation of elevator, fabrication of shaft glass curtain wall, energizing Switch Gear and Panels, and obtaining gas service				Completion of final work items has taken longer than expected. Additionally, need to resolve remaining commercial issues.			
LIRR				BUS COMPANY			
<i>Signals and Communications</i>				<i>Bus Company Projects</i>			
Centralized Traffic Control	Construction Completion	Jun-15	Nov-18	Bus Command Center - MTA Bus	Construction	Dec-17	Oct-18
		\$12.9M	\$12.9M			\$17.1M	\$17.3M
Due to an extended design schedule, add'l time was needed for the procurement process and legal review.				Substantial Completion is delayed to August 2018 due to delay in installing components for building enclosure, interference of sprinkler heads with other components in the operating theater, delay in the installation of elevator, fabrication of shaft glass curtain wall, energizing Switch Gear and Panels, and obtaining gas service			
<i>Track</i>							
Massapequa Pocket Track	Construction	Nov-17	Apr-19				
		\$19.6M	\$19.6M				
Delay due to lack of available force account resources in the signals area.							

Prior Year Major Completions – September 2018 – Schedule Variances

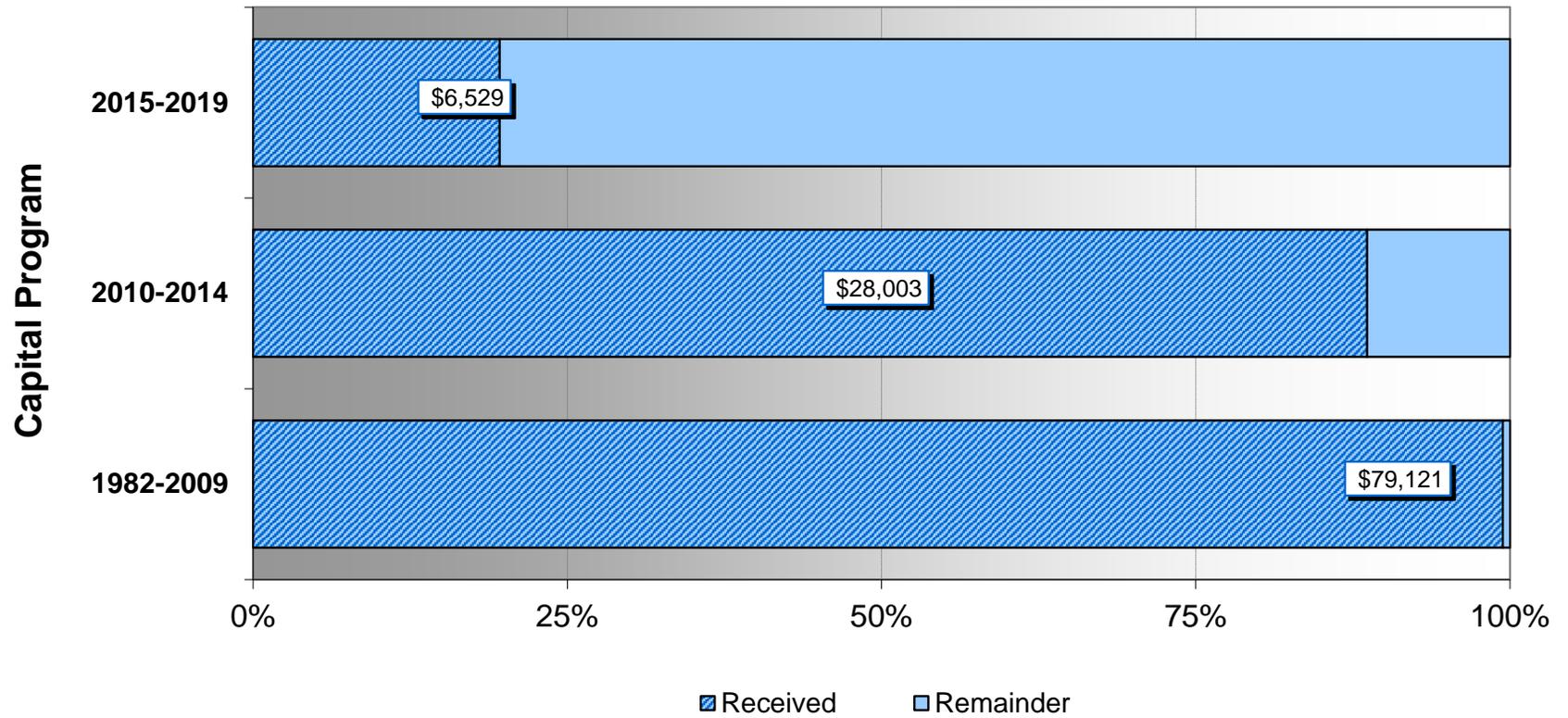
Actual Results Shaded

Project	Completion	Goal	Actual
5 All-Agency Yellow Completions (2 new this quarter)			
NYCT			
<i>Bus Replacement</i>			
Purchase 139 Articulated Buses	Fleet Purchase	Nov- 17 \$120.3M	Jan- 18 \$120.2M
The delay was due to required testing for the fleet's braking systems.			
MNR			
<i>Stations</i>			
GCT Leaks Remediation Phase II (New Item)	Construction	Dec- 16 \$18.6M	Sep- 18 \$18.6M
Substantial completion was achieved in September 2018.			
B&T			
MPB / CBB Master Plan & Resiliency Needs	Construction	Dec- 17 \$10.0M	Mar- 18 \$10.0M
Additional time required for structural data collection and traffic analysis			
MTACC			
<i>East Side Access</i>			
GCT Councourse Finishes Early Work	Construction Completion	Apr- 14 \$56.7M	Jun-18 \$60.0M
Completion of final work items has taken longer than expected. Final agreement is being negotiated and substantial completion has been issued. Budget value is being aligned with final costs.			
<i>Second Avenue Subway</i>			
Systems Contract (C6) (New Item)	Construction Completion	Dec- 16 \$320.0M	Jul-18 \$341.0M
Budget increased to reflect acceleration agreement and additional contingency based on the analysis of current and future additional work order needs. Completion of final work elements progressed slower than expected.			

Status of MTA Capital Program Funding

Capital Funding (September 2018)

\$ in millions



Capital Funding Detail (September 30, 2018)

\$ in millions

	Funding Plan	Receipts		
	Current	August	This month	Received to date
1992-1999 Program	18,099	18,099	-	18,099
2000-2004 Program	21,691	21,691	-	21,691
2005-2009 Program	24,401	23,940	-	23,940

	Funding Plan	Receipts		
	Current	August	This month	Received to date
2010-2014 Program				
Federal Formula, Flexible, Misc	\$5,853	\$5,826	\$14	\$5,839
Federal High Speed Rail	295	295	-	295
Federal New Start	1,257	1,257	-	1,257
Federal Security	189	100	-	100
Federal RIFF Loan	-	-	-	-
City Capital Funds	719	608	-	608
State Assistance	770	400	-	400
MTA Bus Federal and City Match	132	108	-	108
MTA Bonds (Payroll Mobility Tax)	11,483	11,176	-	11,176
Other (Including Operating to Capital)	1,314	1,187	-	1,187
B&T Bonds	2,025	2,025	-	2,025
Hurricane Sandy Recovery				
<i>Insurance Proceeds/Federal Reimbursement</i>	6,329	4,795	4	4,800
<i>PAYGO</i>	235	81	-	81
<i>Sandy Recovery MTA Bonds</i>	758	2	-	2
<i>Sandy Recovery B&T Bonds</i>	230	124	-	124
Total	31,589	27,985	18	28,003

	Funding Plan	Receipts		
	Current	August	This month	Received to date
2015-2019 Program				
Federal Formula, Flexible, Misc	\$6,704	\$912	\$2,171	\$3,084
Federal Core Capacity	100	-	-	-
Federal New Start	500	-	-	-
Federal Security	3	3	-	3
State Assistance	8,640	365	38	403
City Capital Funds	2,666	503	62	565
MTA Bonds	7,968	12	-	12
Asset Sales/Leases	1,018	297	-	297
Pay-as-you-go (PAYGO)	2,145	1,691	-	1,691
Other	592	-	-	-
B&T Bonds & PAYGO	2,936	475	-	475
Total	33,273	4,258	2,271	6,529