



Metropolitan Transportation Authority

Capital Program Oversight Committee Meeting

April 2018

Committee Members

J. Lhota, Chair

F. Ferrer

A. Albert

N. Brown

I. Greenberg

S. Metzger

J. Molloy

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, 4/23/2018
1:30 - 3:00 PM ET**

1. PUBLIC COMMENTS PERIOD

2. APPROVAL OF MINUTES MARCH 19, 2018

- Minutes from March '18 - Page 3

3. COMMITTEE WORK PLAN

- 2018 - 2019 CPOC Committee Work Plan - Page 6

4. QUARTERLY MTA CAPITAL CONSTRUCTION COMPANY UPDATE

- Progress Report on East Side Access - Page 8

- IEC's Project Review on East Side Access - Page 46

5. NYCT CAPITAL PROGRAM UPDATE

- Progress Report on Signals and Train Control Division - Page 54

- IEC's Project Review on Signals and Train Control - Page 74

- Progress Report on Systems and Security Division - Page 85

- IEC's Project Review on Systems and Security Program - Page 99

- IEC's Project Review on Bus Radio System - Page 102

- IEC's Project Review on Bus Command Center - Page 105

6. CAPITAL PROGRAM STATUS

- Commitments, Completions, and Funding Report - Page 109

Date of next meeting: Monday, May 21, 2018 at 2:00 PM

MINUTES OF MEETING
MTA CAPITAL PROGRAM OVERSIGHT COMMITTEE
March 19, 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. Susan Metzger
Hon. Mitchell Pally
Hon. Lawrence Schwartz (in Executive Session)
Hon. Polly Trottenberg (in Executive Session)
Hon. Peter Ward
Hon. Carl Weisbrod
Hon. Carl Wortendyke

MTA CPOC members not present:

Hon. John Molloy
Hon. James Vitiello
Hon. Neal Zuckerman

MTA Board member present:

Hon. Charles Moerdler (in Executive Session)
Hon. Veronica Vanterpool (in Executive Session)

MTA staff present:

Veronique Hakim
Michael Jew-Geralds
Donald Spero

MTACC staff present:

Dan Creighton
Tim Gianfrancesco
Janno Lieber
Mark Roche

Independent Engineering Consultant staff present:

Joe DeVito
Dianne Rinaldi

* * *

Chairman Lhota called the March 19, 2018 meeting of the Capital Program Oversight Committee to order at 1:55 P.M.

Public Comments Period

There were no public speakers in the public comments portion of the meeting.

Meeting Minutes

Upon motion duly made and seconded, the CPOC members approved the minutes to the previous meeting held on February 20, 2018.

Committee Work Plan

Mr. Spero announced that MTACC would be providing updates on all their projects except for East Side Access, which will be taken up in April. In addition, the Executive Session that had been scheduled for April would instead be held today.

MTACC Second Avenue Subway Phase 2 Update

Mr. Gianfrancesco provided an overview of the project, including current status of the following: design (including being on schedule to complete the extended preliminary design by the third quarter of 2018); cost containment and lessons-learned (included maximizing use of design-build and alternate project delivery); and the Environment Re-evaluation Document (including the fact that Community Outreach efforts are on schedule to support design, NEPA and New Starts efforts). 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

Mr. Lieber provided an update on current project activities, including project planning and engineering (specifically, proposals in response to the General Engineering Consultant RFP have been received and contract award is scheduled for summer 2018), and that the Planning Agreement with Amtrak has been extended. He then outlined the following next steps: continued development of Federal Environmental Review documentation (expected to result in a Finding of No Significant Impact at the end of 2018); continued meetings with the City and State regarding Transit Oriented Development and Value Capture initiatives; and execution of a project MOU with Amtrak, as well as initiation of discussions with CSX. 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

In his Project Overview, Mr. Roche stated that this roughly \$2.5 billion project, which was awarded in December 2017 and is scheduled for substantial completion in mid-2023, will provide the following benefits: create more resiliency; avoid cascading delays; unlock capacity growth made possible by other projects; improve repair and maintenance capacity; and enable reverse commute at peak hours. He then cited the numerous components, including grade crossings, bridges, retaining/sound barrier miles, and track miles that comprise the project. Among the key elements in the Project Look Ahead are the development of design, cost and detailed schedule information, as well as an update of the project risk register. 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.

Cortland Street #1 Line Update

Mr. Creighton reported that the current Substantial Completion Date is December 2018 and that the project budget stands at \$181.8 million. He then provided highlights of ongoing construction activities, and cited an overall upward trend in monthly contractor performance. In its Project Review, the IEC confirmed that the project budget is \$181.8 million and that risks to the project budget remain low, with 41% of third party work and 42% of third party contingency remaining. Further, the IEC noted that the contractor has achieved a rate of productivity required to meet December 2018 substantial completion, and that the increased productivity was sustained in each of the most recent 4 months of billing. According to the IEC, major risks to the project schedule include completion of the Testing & Commissioning Program and obtaining full systems acceptance, as well as completion of the elevator at the Vesey Street entrance. In addition, the IEC noted that delays by the Port Authority continue to pose the highest risk to the Agency's ability to complete the station reconstruction. Among its Observations, the IEC stated that the following is

required in order to achieve December 2018 Substantial Completion: the contractor must sustain the current level of productivity and coordinate and execute the remaining work in accordance to the schedule; and issues related to completion of the Vesey Street entrance must be resolved by MTACC, the Port Authority and the Contractor. Finally, the IEC stated its support for the timely implementation of a “station turnover task force” to prepare for the anticipated countdown to service for the Cortlandt Street #1 Line station. 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.

MTA Capital Program Commitments & Completions and Funding

Ms. Hakim noted that in 2018, agencies plan to commit a total of \$7.3 billion (including 43 major commitments), and agencies plan a total of \$6.3 billion in completions (including 39 major completions) that will be tracked throughout the year. By year end, the MTA forecasts meeting its 2018 commitments and completions goal.

Capital Core Program Traffic Light Report

Mr. Spero reported on the Traffic Light Report for the 4th Quarter 2017. A total of 314 projects were reviewed: 62 in design and 252 in the construction phase. Of the 314 projects reviewed, 62% (195) were designated green; 15% (46) were designated yellow; and 23% (73) were designated red. For each of the 73 Core projects designated red this quarter the agencies have prepared a one-page report stating the problem and corrective action. Mr. Spero then reported on the Sandy-related Traffic Light Report. A total of 94 active projects were reviewed: 8 in Design, 21 in Post-Design to Construction, and 65 in the construction phase. Of the 94 projects reviewed, 64% (60) were designated green; 25% (24) were designated yellow; and 11% (10) were designated red. For each of the 10 Sandy projects designated red this quarter the agencies have prepared a one-page report stating the problem and corrective action.

Quarterly Capital Change Order Report (for information only)

Mr. Spero brought the Committee’s attention to the Quarterly Capital Change Order Report for the 4th Quarter 2017.

Executive Session

Upon motion duly made and seconded, Chairman Lhota adjourned the public CPOC meeting at 2:40 PM to go into Executive Session.

Adjournment

Upon motion duly made and seconded, Chairman Lhota adjourned the Executive Session, reconvened the public session and then immediately adjourned the March 19, 2018 meeting of the MTA Capital Program Oversight Committee at 2:55 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

May

LIRR Capital Program Update

- Jamaica Capacity Improvements
- Main Line Double Track
- Mid Suffolk Electric Yard
- Morris Park Locomotive Shop and Employee Facility

MNR Capital Program Update

- Harmon Shop Replacement
- Hudson Line Sandy Restoration
- Customer Information System

NYCT, LIRR, MNR Update on New Fare Payment System

June

Quarterly MTACC Capital Program Update

- Cortlandt Street Station
- East Side Access
- Second Avenue Subway
- Penn Station Access
- LIRR Expansion Project

LIRR and MNR Update on Positive Train Control (PTC)

Quarterly Change Order Report

Quarterly Traffic Light Reports

July

NYCT Capital Program Update

- Canarsie Tube Restoration
- Reconstruction of Clifton Shop
- Enhanced Stations Initiative

September

Quarterly MTACC Capital Program Update
Update on Minority, Women and Disadvantaged Business Participation
Update on Small Business Development Program
Update on Capital Program Security Projects (in Executive Session)
Quarterly Change Order Report
Quarterly Traffic Light Reports

October

LIRR and MNR Capital Programs Update
LIRR and MNR Joint Update on Rolling Stock
LIRR and MNR Update on Positive Train Control (PTC)

November

NYCT Capital Program Update
NYCT, LIRR, MNR Update on New Fare Payment System
CPOC Committee Charter Review

December

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

January

NYCT Capital Program Update

February

B&T Capital Program Update
Update on Minority, Women and Disadvantaged Business Participation

March

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

East Side Access Capital Program Oversight Committee

April 23, 2018

There is real progress on East Side Access

Terminal Construction



Manhattan – Terminal Pre-Cast Platform and Mezzanine Levels

Track Installation



Manhattan – Track Installation

Concourse Escalators



Manhattan – High Rise Concourse Escalator

Modernization of Harold Interlocking

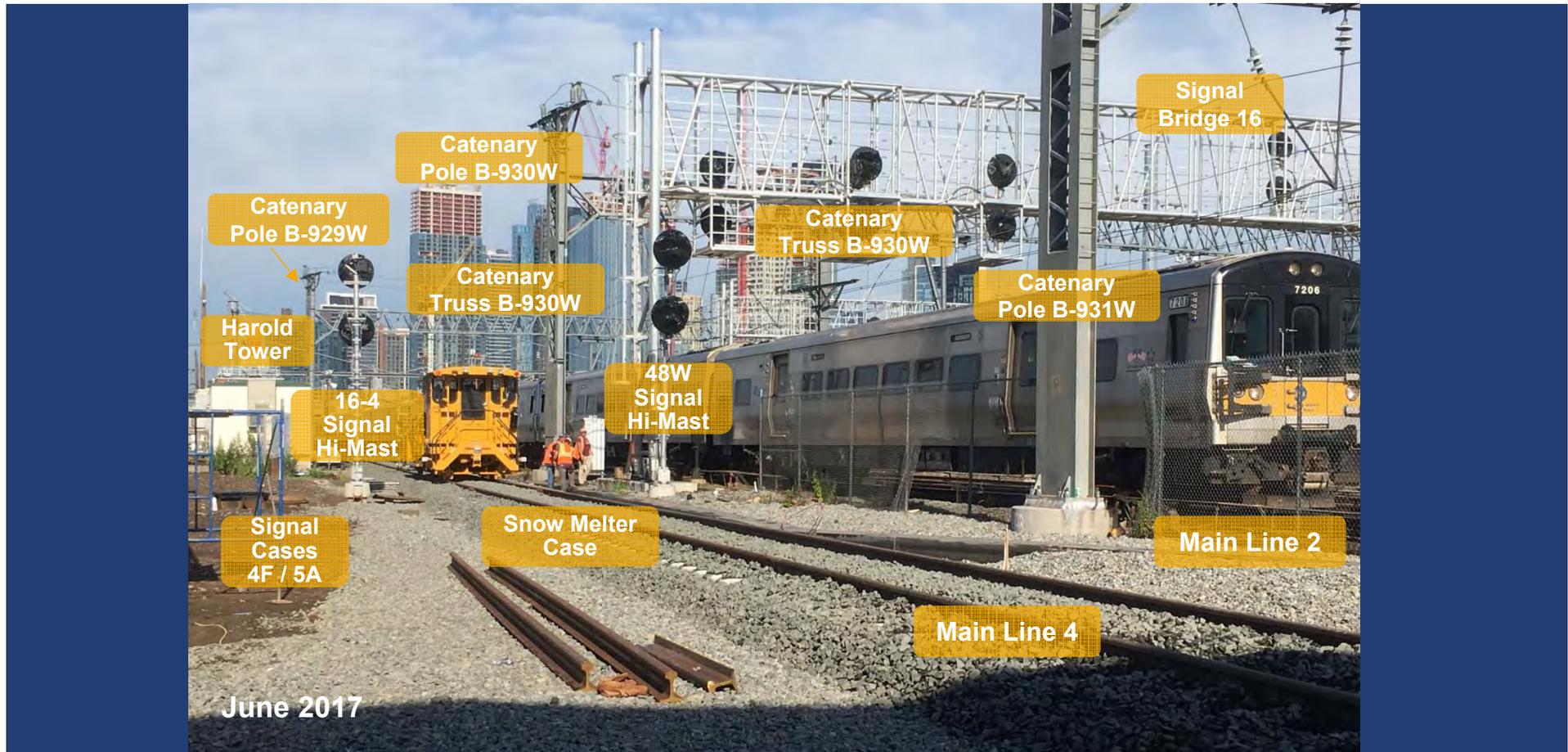


Modernization of Harold Interlocking

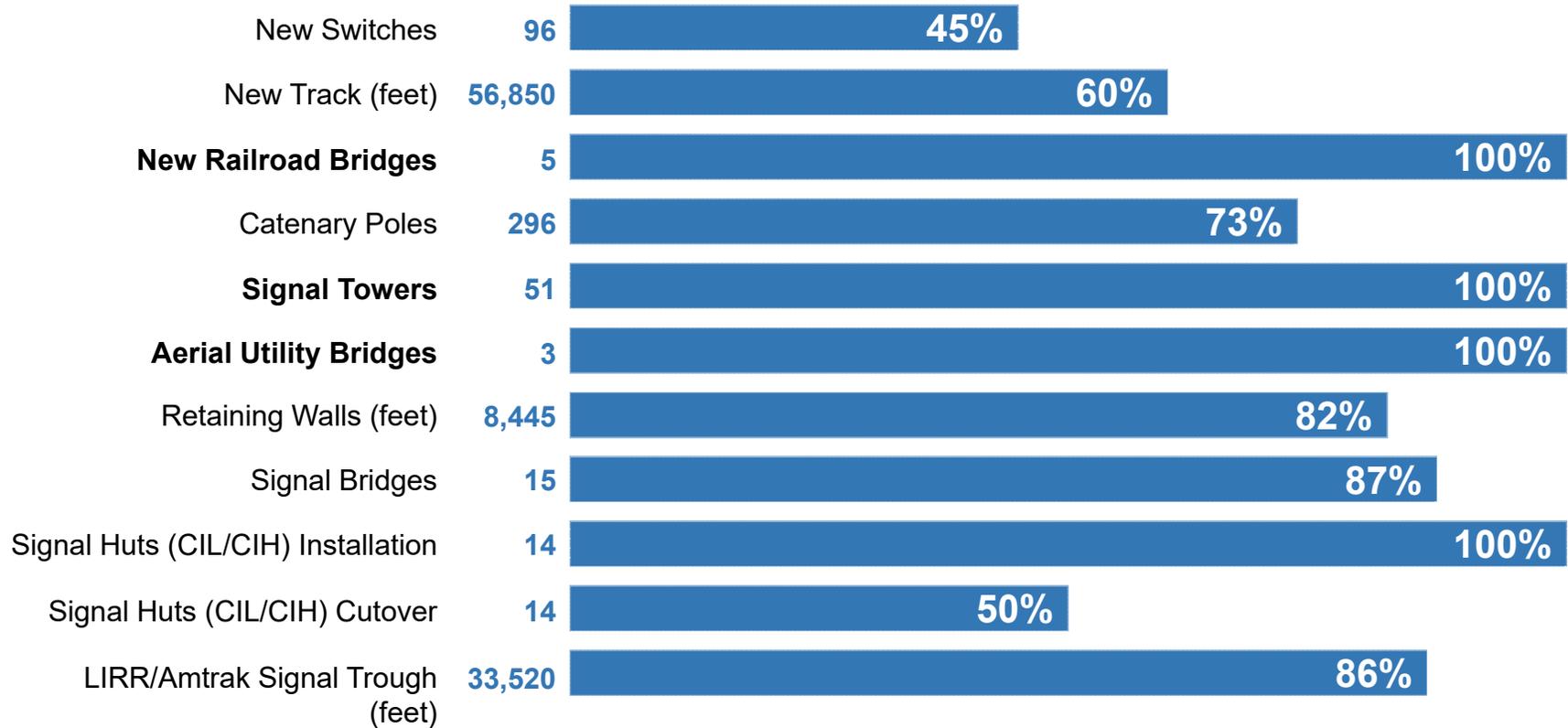


January 2007

Modernization of Harold Interlocking

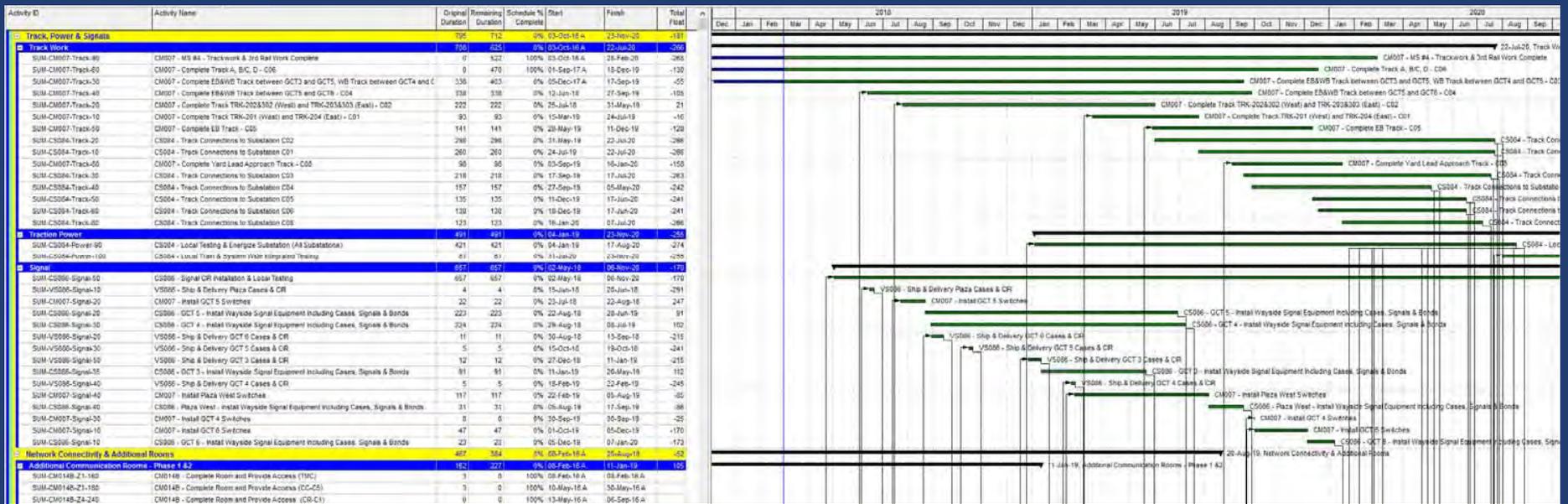


Modernization of Harold Interlocking



Previously Announced Changes

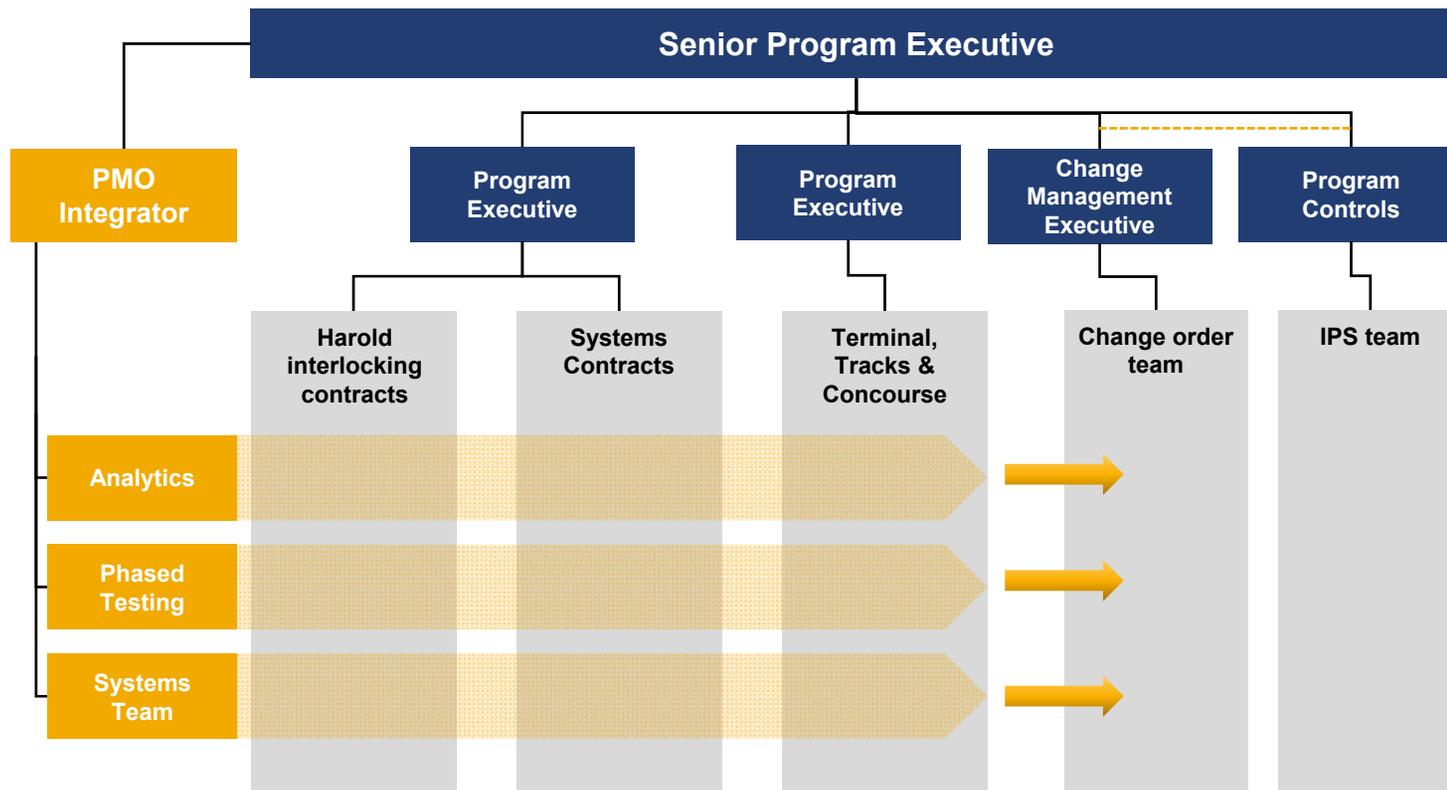
A new priority-based program scheduling methodology in place.



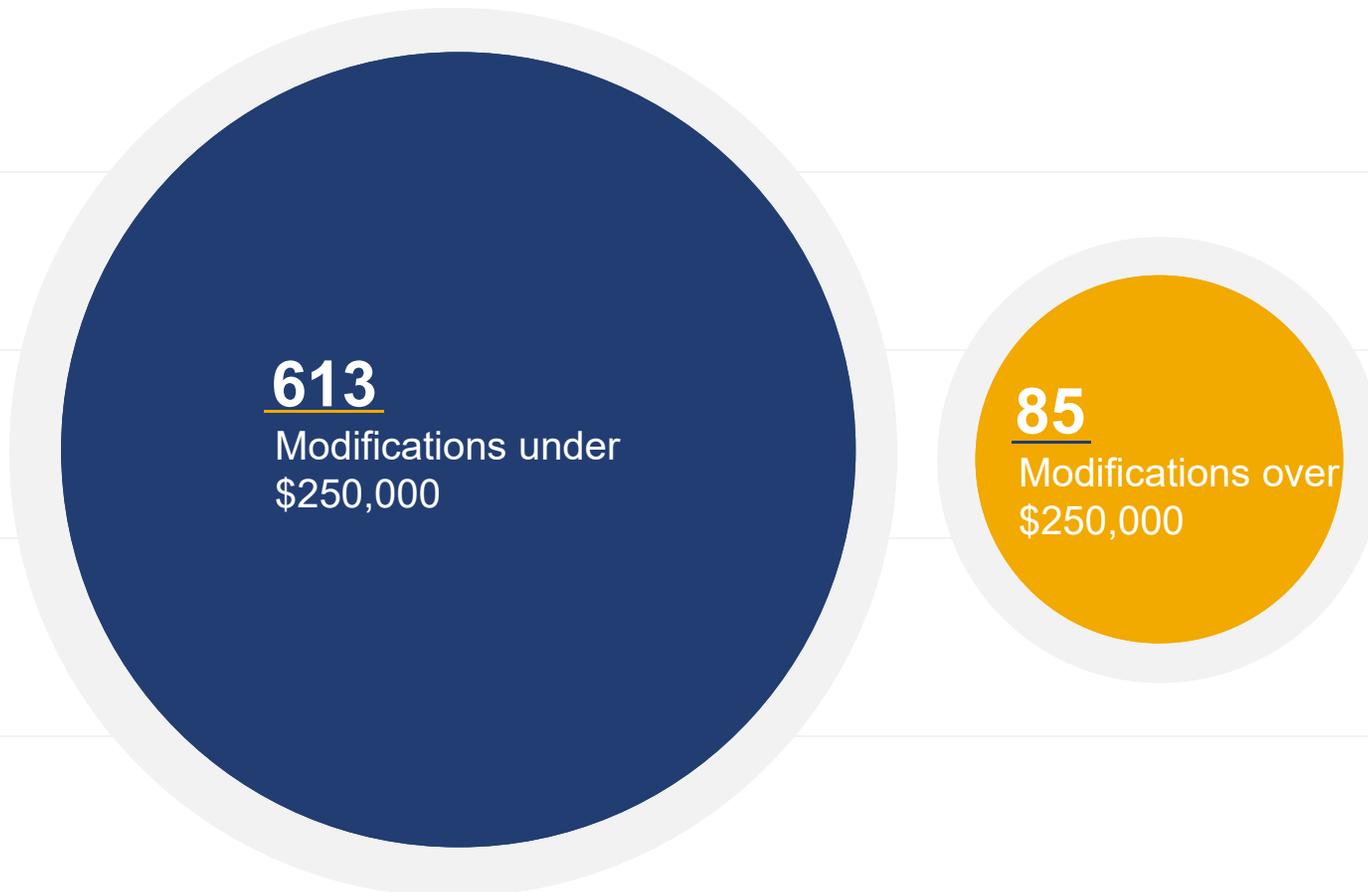
8,500 summary level activities to over 44,000 activities, coordination points and identified open issues



A new Program Management Organization will administer this new approach to schedule.



Our Project Managers will be empowered to act, and will be held accountable for outcomes.



A dedicated team has been created to manage the new streamlined change order process, focusing on schedule critical issues.

11 UNIQUE APPROVALS
↓
REDUCED TO
4 UNIQUE APPROVALS

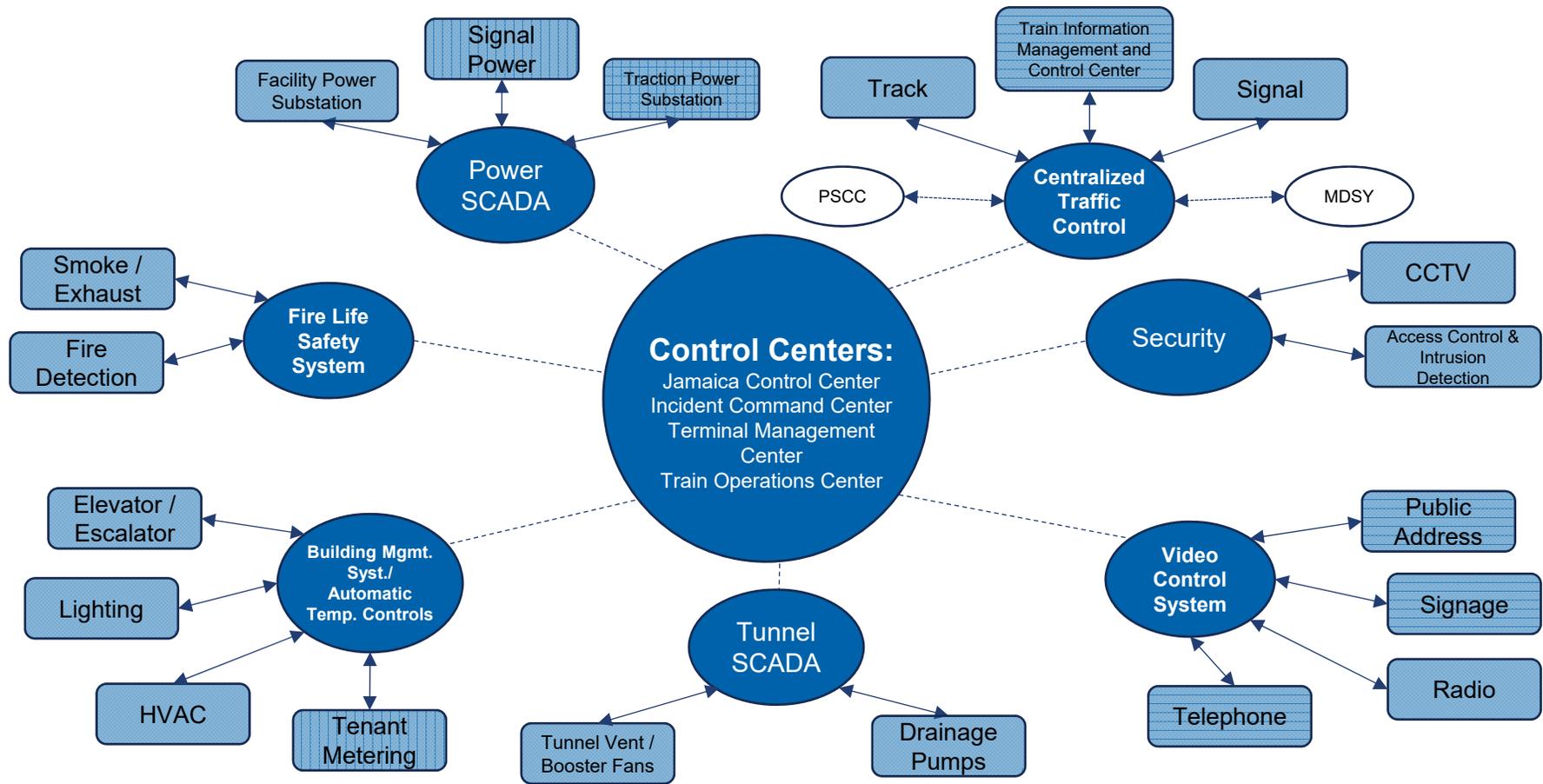
17 POINTS OF HANDOVER
↓
REDUCED TO
4 POINTS OF HANDOVER

AVERAGE DURATION PROJECTED TO DECREASE FROM
290 DAYS
↓
BETWEEN
60-90 DAYS

An integrated team will speed up preparations for opening day service.

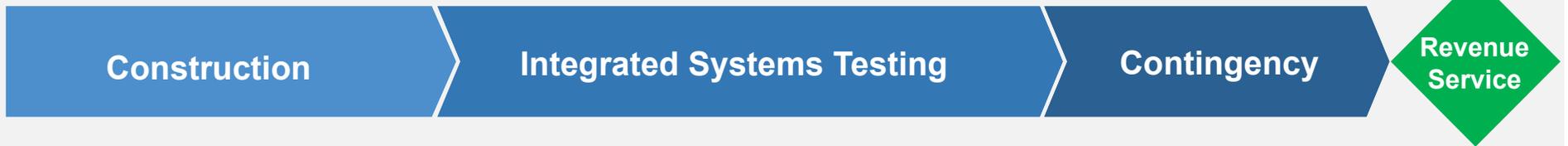


Systems Program – Control / Non-Control Systems

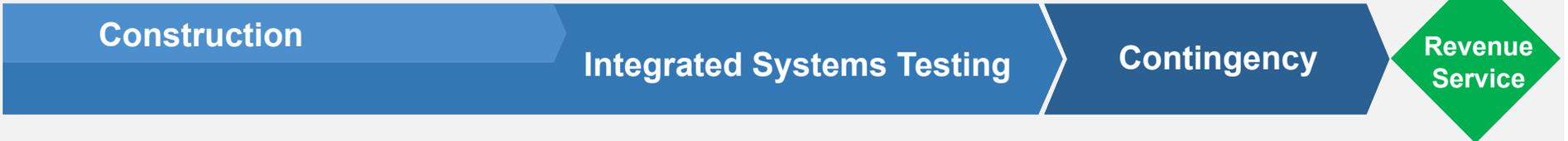


Shift to Incremental Integrated Systems Testing

Current Approach (Sequential)



New Approach – Incremental Integrated Systems Testing

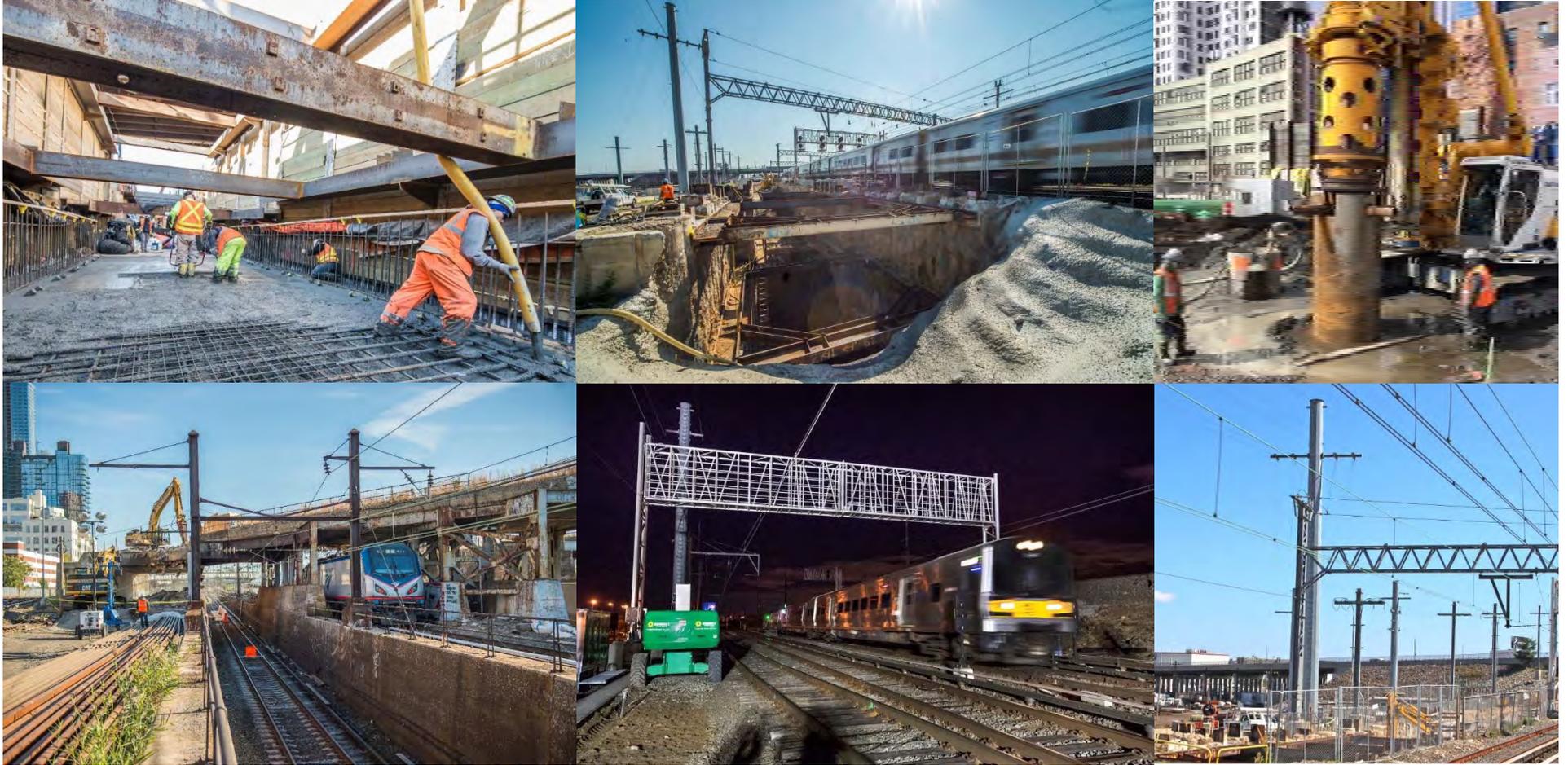


Not to scale

Challenges & Mitigations

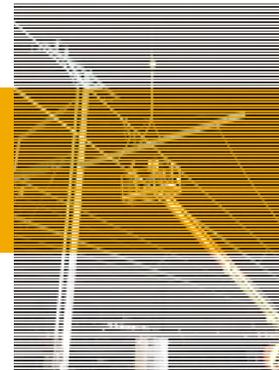
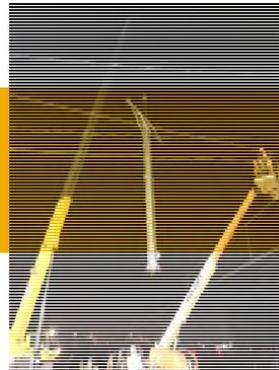
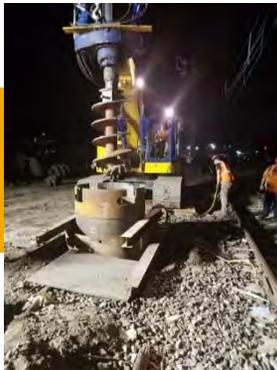
Amtrak Resource Issues

Harold Interlocking Work



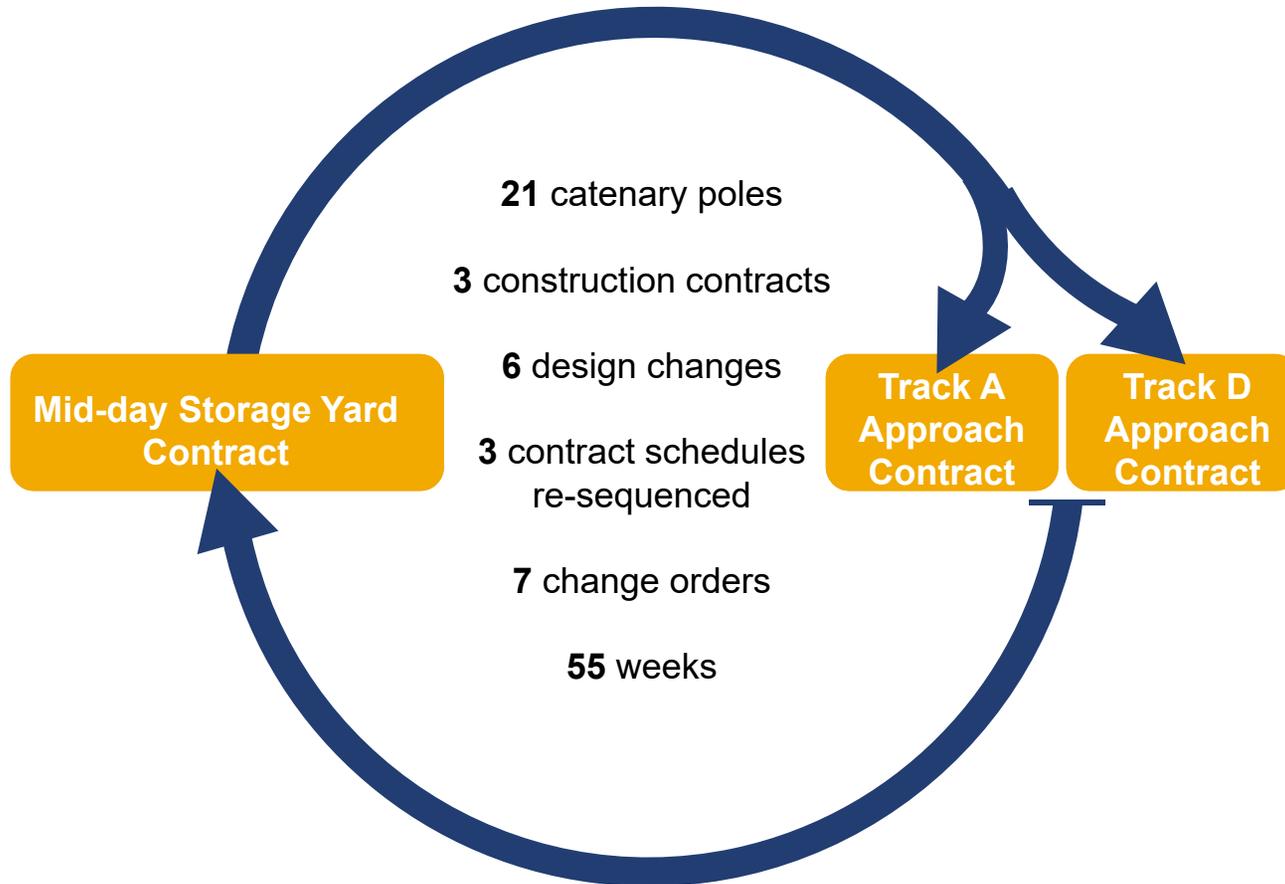
Required Amtrak Involvement

	1	2	3	4	5
	Install New Catenary Foundations	Install New Catenary Structure	Relocate Existing Catenary Wire	Demolish Old Catenary Structure	Demolish Old Catenary Foundation
ESA	WORK	WORK	HOLD	WORK	WORK
AMTRAK	OUTAGES, ACCESS & PROTECTION	OUTAGES, ACCESS & PROTECTION	WORK, OUTAGES, ACCESS & PROTECTION	OUTAGES, ACCESS & PROTECTION	OUTAGES, ACCESS & PROTECTION



Goal: Continuation of ESA Construction / Successor Work

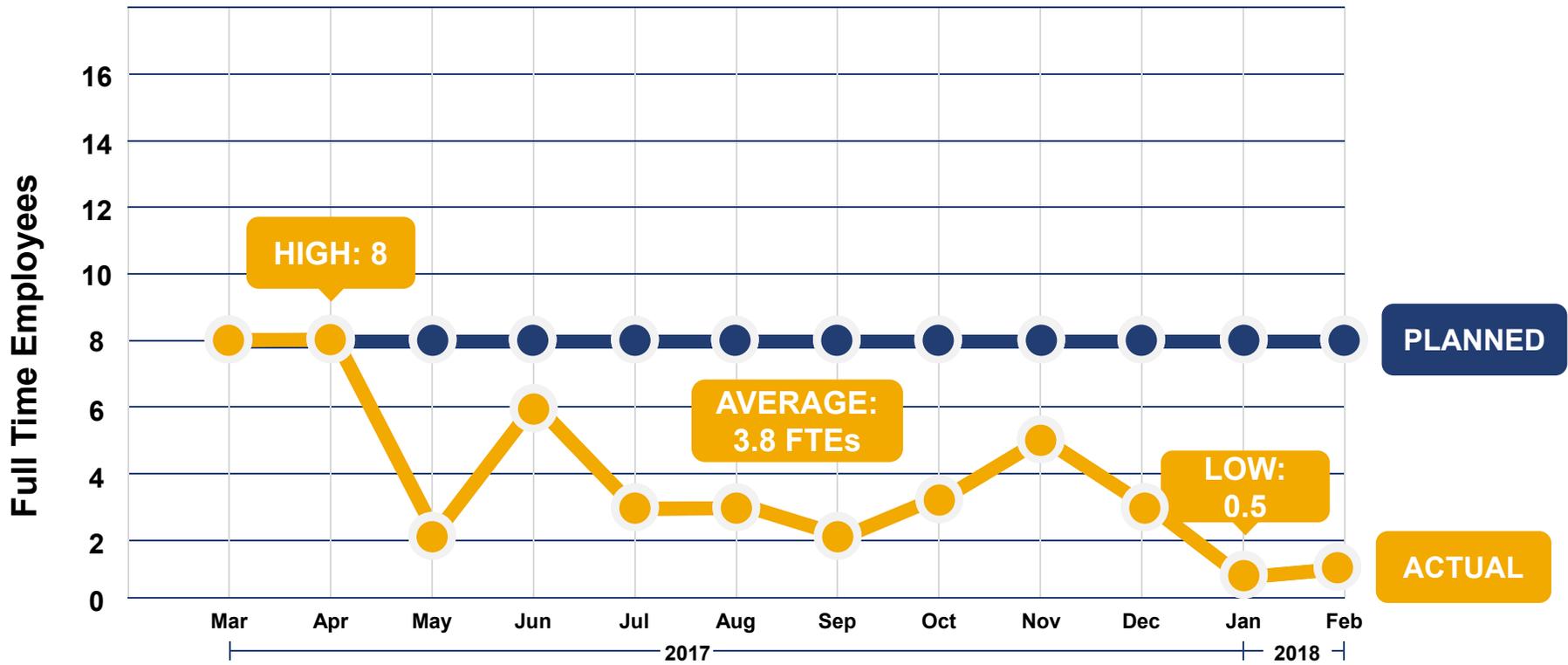
Mid-day Storage Yard – Catenary Pole Relocation



Amtrak's Failure to Deliver

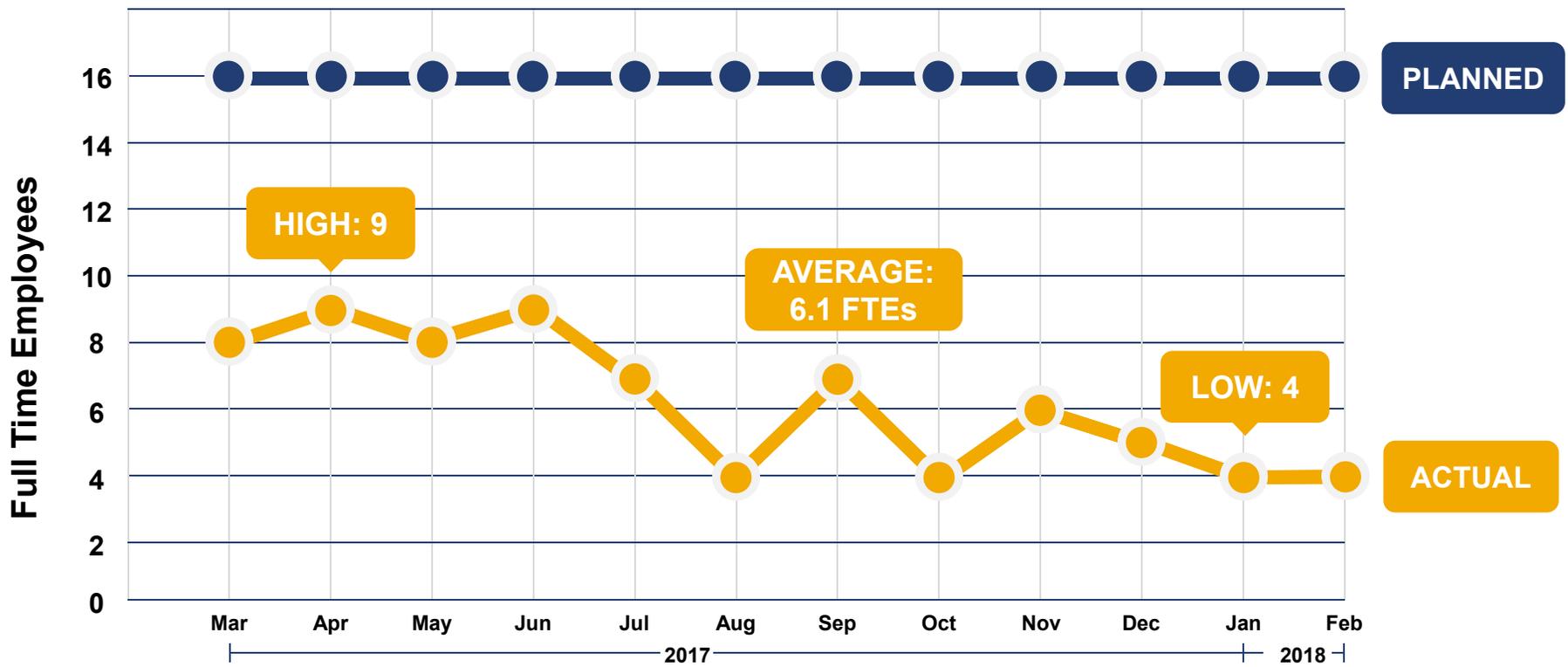
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Electric Traction (ET) Linemen Direct Work



Amtrak's Failure to Deliver

Electric Traction (ET) Linemen Access & Protection



Mitigations to Amtrak Resource Issues

**Hold
Amtrak
Accountable**

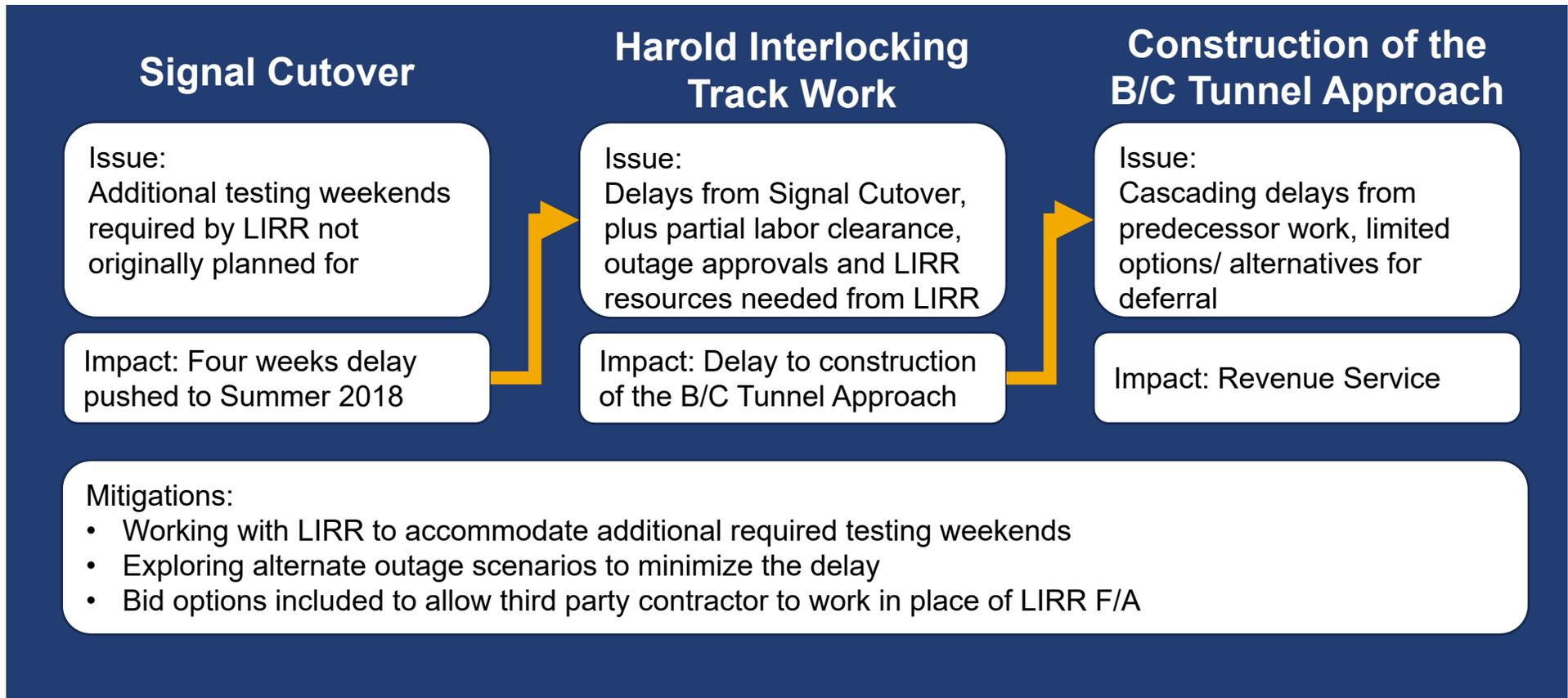


Challenges & Mitigations

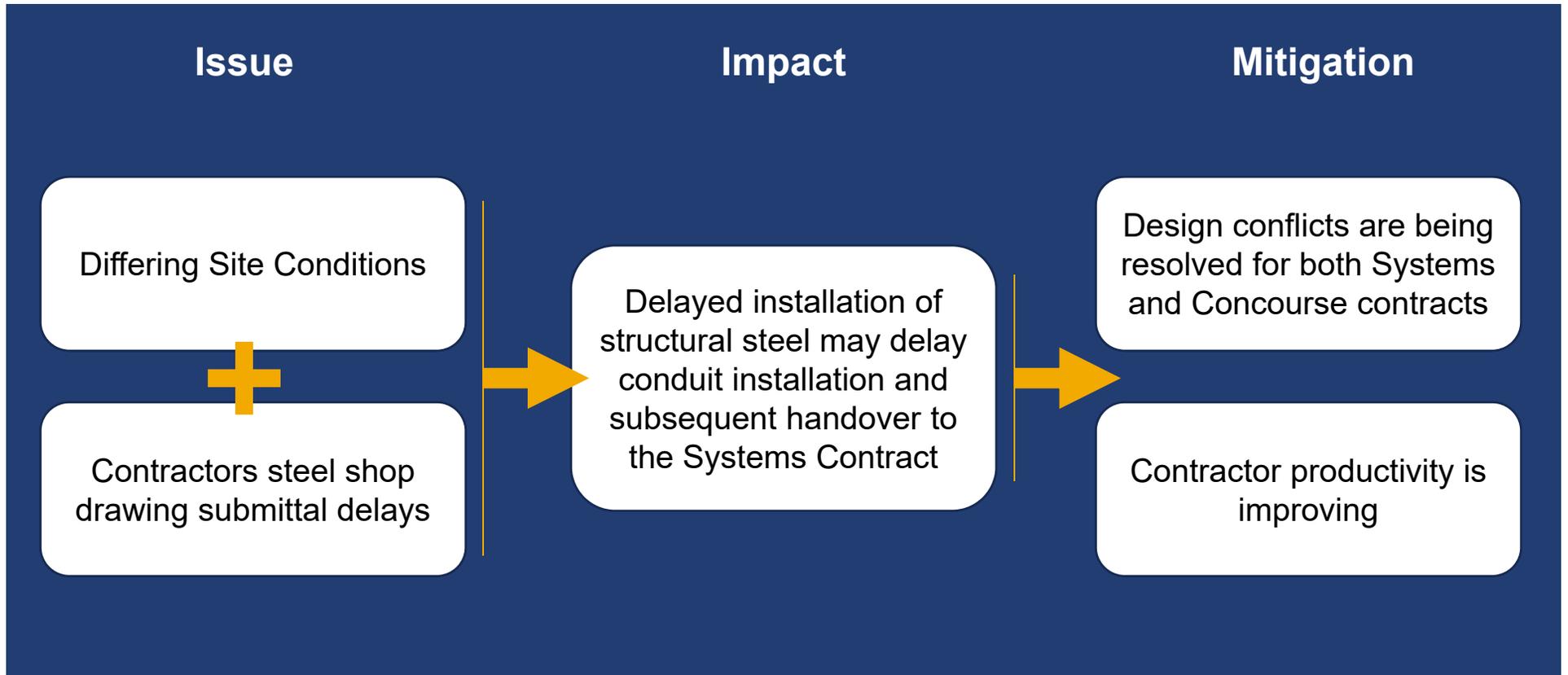
Agency & Programmatic Control

Harold Interlocking Critical Path

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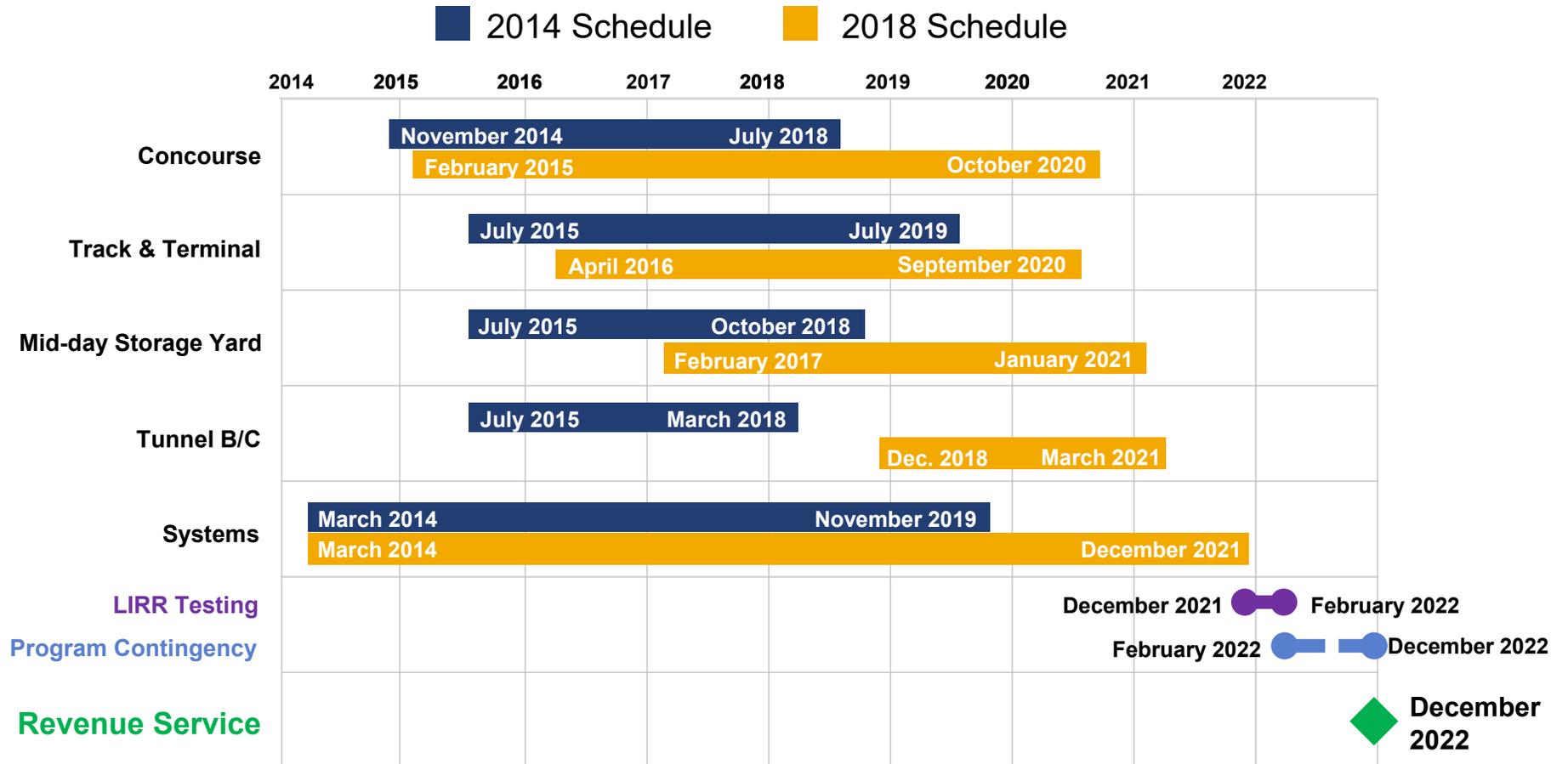


Concourse Steel

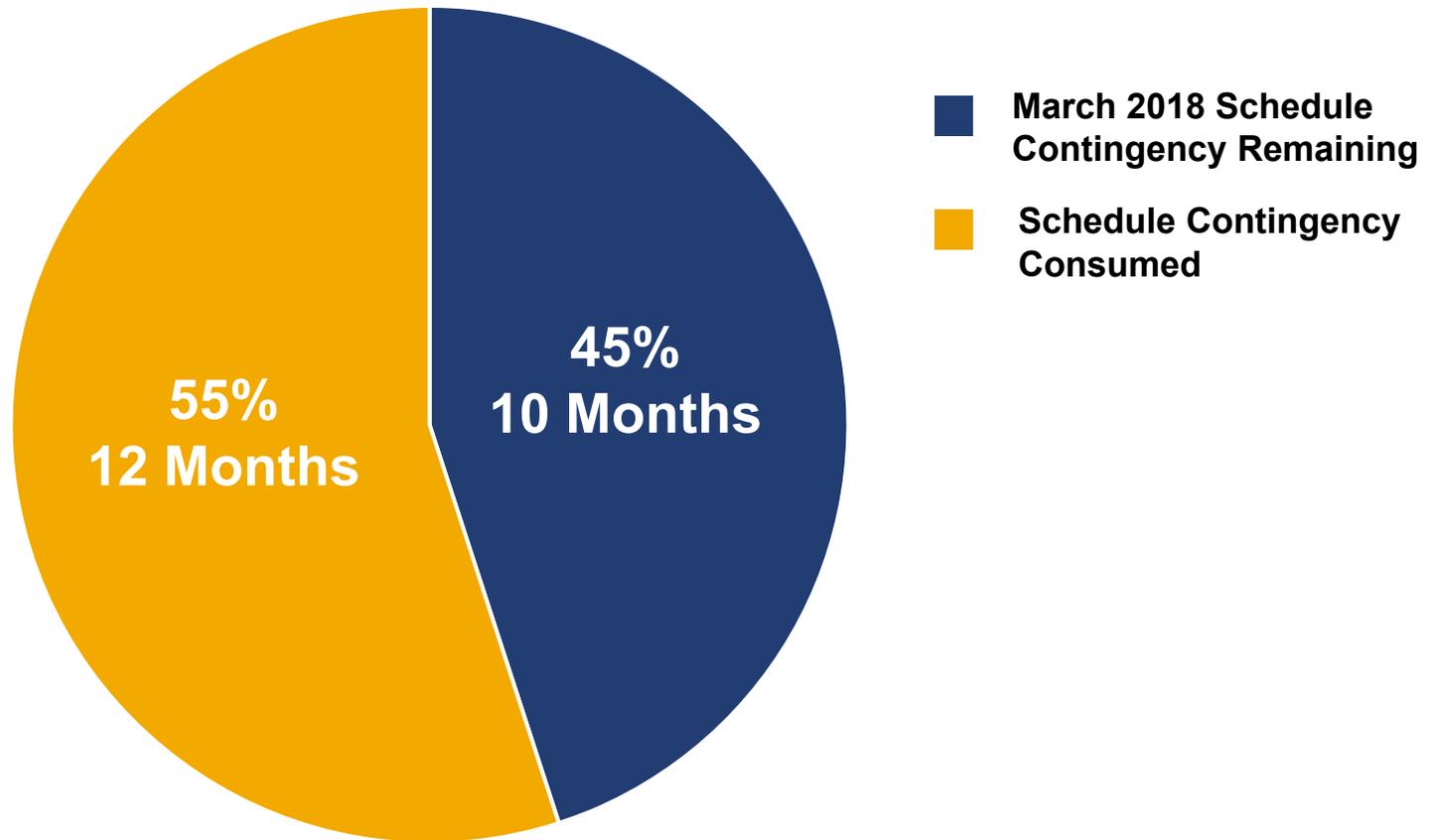


Program Schedule Forecast

The construction schedule has shifted



Program Schedule Contingency Has Been Reduced



Program Budget Forecast

2014 / 2018

Third Party Construction

2014 Replan	2018 Forecast	Difference	% Difference
\$6,619,612,577	\$7,054,319,805	\$434,707,228	6.6%

Cost Drivers

- Bid Variances
 Concourse
 Mid-Day Storage Yard
- Risk Based Contingencies for Remaining Work

Cost Containment Mitigation

- Revamped change order process
- Construction Management accountability, incentives and disincentives for performance
- No more discretionary changes

Force Account

2014 Replan	2018 Forecast	Difference	% Difference
\$759,684,129	\$959,794,239	\$200,110,110	26.3%

Cost Drivers

- Amtrak - \$116 Million
- LIRR - \$80 Million

Soft Costs – Engineering, Management, Real Estate

2014 Replan	2018 Forecast	Difference	% Difference
\$1,874,860,684	\$2,192,851,909	\$317,991,225	17%

Cost Drivers

- Extended duration of the project

Cost Containment & Mitigation

- GEC Initiatives
- PMC/CCM/GEC Staffing Reductions

Owner Controlled Insurance Program (OCIP)

2014 Replan	2018 Forecast	Difference	% Difference
\$282,613,620	\$457,352,203	\$174,738,583	61.8%

Cost Drivers

- Extended duration of the project
- Market conditions

Cost Containment & Mitigation

- Safety initiatives

Unallocated Contingency

2014 Replan	2018 Forecast	Difference	% Difference
\$439,000,000	\$267,000,000	(\$172,000,000)	-39.2%

Cost Drivers

- Percentage based on the remaining work
 - 2014 – 9.6% unallocated contingency based on the remaining budget of \$4.58 billion
 - 2018 – 9.5% unallocated contingency based on the remaining budget of \$3.13 billion

2018 Budget Forecast

	2014 Replan	2018 Forecast	Difference	% Difference
Third Party	\$6,619,612,577	\$7,054,319,805	\$434,707,228	6.6%
Force Account	\$759,684,129	\$959,794,239	\$200,110,110	26.3%
Soft Costs	\$1,874,860,684	\$2,192,851,909	\$317,991,225	17%
OCIP	\$282,613,620	\$457,352,203	\$174,738,583	61.8%
Unallocated Contingency	\$439,000,000	\$267,000,000	(\$172,000,000)	-39.2%
Rolling Stock	\$202,000,000	\$202,000,000	-	-
Total	\$10,177,771,010	\$11,133,318,156	\$955,547,146	9.4%

East Side Access Opening in 2022

Grand Central
Terminal

Harold
Interlocking

April 2018 CPOC IEC Project Review

East Side Access

The IEC believes that the project has taken the right steps in their plan to complete the remaining ESA work. The IEC, as is our role, will monitor the project's performance against this plan.



Overview

- The IEC recognizes the significant efforts performed by MTACC- ESA to help manage the project and achieve the planned revenue service
 - Revisions to the cost forecast
 - Development and implementation of project initiatives, specifically improvements to the project schedule and management structure



Budget Review

- Significant efforts have been made by MTACC and the ESA project team in revising the cost to support the Revenue Service Date of December 2022
 - Quantification of the cost impacts to date
 - Establishment of a realistic forecast for the remaining work
- The forecast increase to the allocated and unallocated contingencies reduces the risk of greater than anticipated impacts to third party and soft cost



Schedule Review – Manhattan/ Systems

- The new project schedule confirms that Manhattan/Systems is the critical path
- MTACC's new incremental testing approach, which calls for the overlap of local testing and a geographically phased Integrated Systems Testing (IST), will likely lead to the successful mitigation of existing delays to achieve the revenue service by December 2022
- Issues identified in the new project schedule are being addressed
- A detailed Incremental Test Plan and a refined project schedule are needed for the IEC to provide a full analysis of this approach and its risks



Observations – Harold

- Risks to Harold Completion
 - Further Central Instrumentation Locations (CILs) cutover delays would impact the Northeast Quadrant, Southeast Quadrant, and B/C Track Reconfiguration
 - Extended outages to perform the Southeast Quadrant, and B/C Track Reconfiguration work have yet to be secured
 - Competing projects may hinder the allocation of Force Account (FA) resources to ESA
 - Penn Station Rehabilitation and Moynihan – Amtrak resources
 - Positive Train Control and Mainline Double Track – LIRR resources



Observations – Enhanced Management

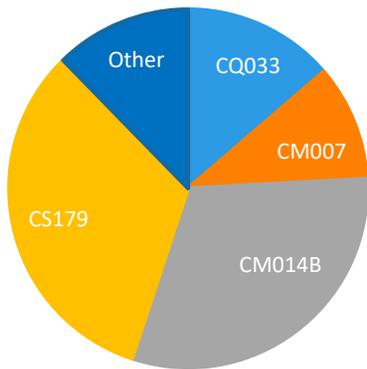
- The revised organization will likely result in more effective management of the project as the newly created positions continue to be filled
- A separate executive, designated to the Systems program area, would further strengthen management efforts for the remaining installation, testing and commissioning work
- The initiative to further integrate LIRR management, to assume a co-leadership role on the ESA project, will help strengthen LIRR readiness for opening day operations



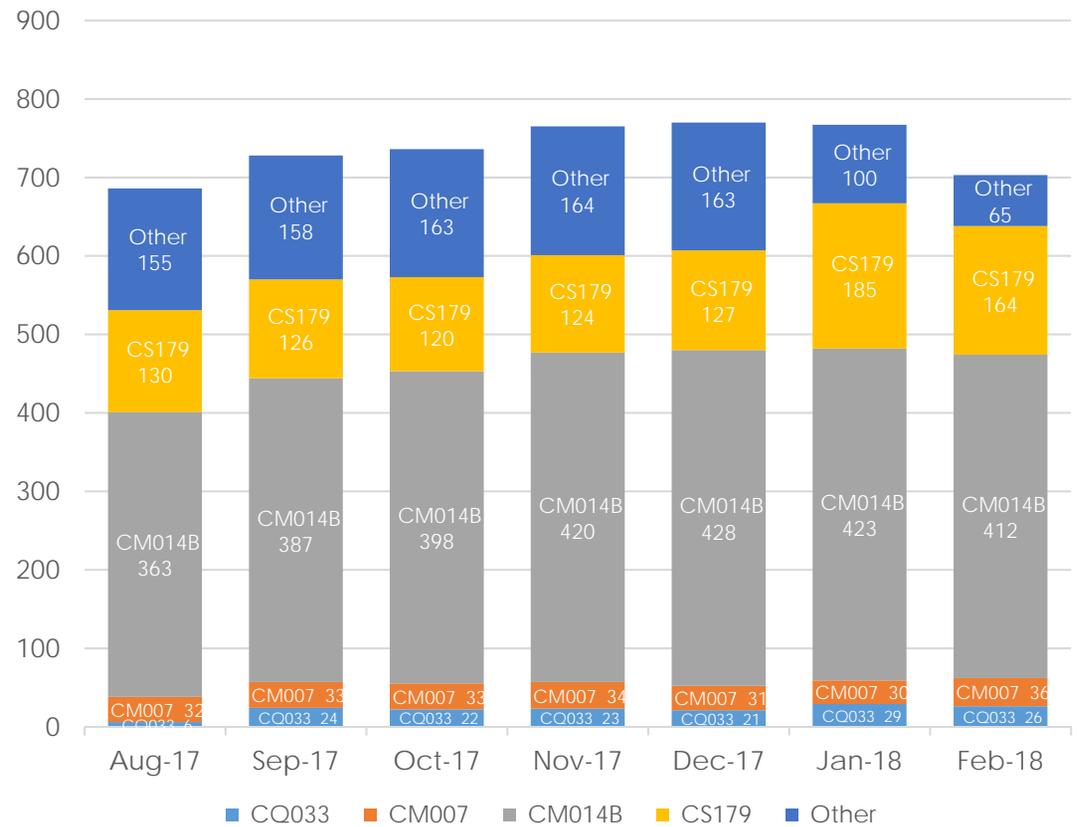
Observations – Change Orders

- Since the revised Modification Process Procedure was issued in December 2017, a decrease in the change order backlog is observed
- With the addition of the Change Management Group, it is expected that the backlog will be further reduced

[Relative Cost Share per Contract]



Possible, Pending & Potential Modifications
[Count by Contract]



Data as of February 2018



Recommendations

- Appoint a separate executive for the Systems program area
- Perform a Systems Risk Assessment and identify mitigations based on the incremental testing approach
- Reestablish Key Performance Indicators (KPIs) for the revised cost and schedule
- Manage in-house Force Account (FA) to balance resources between East Side Access and other projects



Signals and Train Control Program

Capital Program Oversight Committee

Signals and Train Control

Robert Gomez, P.E.

Program Officer



April 2018

Signals & Train Control Projects

Project Name

- ❑ CBTC Flushing Line
- ❑ CBTC Queens Blvd Line – Design and Furnish
- ❑ CBTC Queens Blvd Line – Installer
- ❑ CBTC Equipment Supplier Interoperability
- ❑ ISIM-B: Module 1 – Train Position Monitoring System
- ❑ ISIM-B: Module 3 – Large Scale Display at RCC and Data Warehouse
- ❑ 2 Interlockings: Union Turnpike & 71st Ave, QBL
- ❑ Dyre Avenue Line Signals
- ❑ 34th Street Interlocking
- ❑ W. 4th Street Interlocking
- ❑ Kings Highway Interlocking, Culver Line
- ❑ CBTC 8th Ave / 2 Interlockings 30th St & 42nd St
- ❑ CBTC Culver Line

Phase

Construction
Construction
Construction
Construction
Construction
Procurement

Construction
Construction
Construction
Construction
Construction
Design
Design



CBTC Flushing Line

- ❑ Awarded: June 16, 2010
- ❑ Contractor: Thales Inc.
- ❑ Project Description: Project will overlay new CBTC system on the Flushing Line between Main St. and the new 34th St. /Hudson Yards Terminal. Modernize 1st Ave. and Times Square Interlockings and equip fleet with CBTC carborne equipment.



April 2018

CBTC Flushing Line

Overall Status

Item	Comments
Schedule	92% complete. NYCT does not agree with and has not accepted Thales' recent schedule submission.
Cost	Within current budget of \$588M

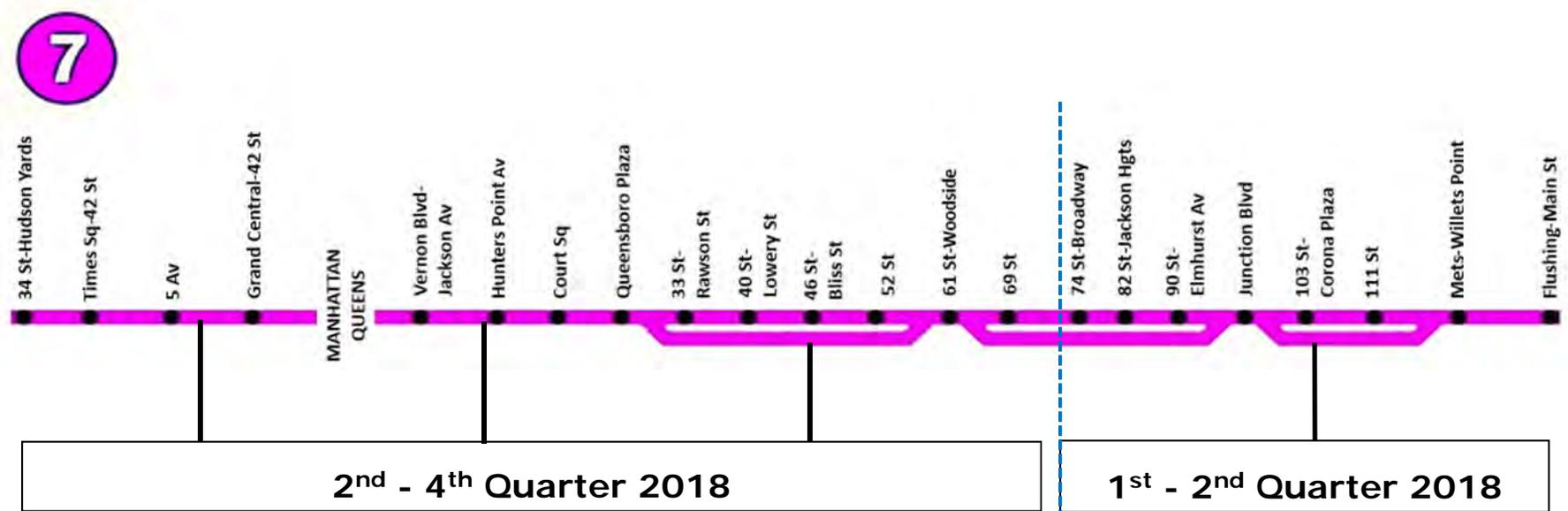
Highlights

Progress	<ul style="list-style-type: none">❑ Trains running in CBTC mode from Main St. to 74th St. on weekends, off-peak days and nights, and on a limited basis during rush hour❑ Completed RTO Train Operator training❑ Several software releases addressed previously identified software issues however other issues remain
180 Day Look Ahead	<ul style="list-style-type: none">❑ Complete monitoring CBTC system software stability from Main St. to 74th St❑ Complete CBTC testing From 74th St. to 34th St.-Hudson Yards❑ Aggressively work with Thales to identify and correct issues❑ Complete CBTC in-service from 74th St. to 34th St.-Hudson Yards



CBTC Flushing Line

Projected Dates for CBTC Cutover



CBTC Flushing Line

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
● Green	Resolve remaining hardware issues	4 th Qtr. 2017	Previous hardware issues have been corrected and will not impact CBTC in-service.
● Red	CBTC Software Stability	May 2018	Reliable and stable system software is needed. Multiple software releases have corrected previously identified issues and improved overall system performance, safety and stability.
● Red	CBTC Testing and Commissioning	Now through 4 th Qtr. 2018	Completing the system stability period and achieving in-service performance metrics are necessary prior to the start of commissioning
● Yellow	G.O., Work Train, and Flagging Availability	Now through November 2018	Availability of weekend GOs to place CBTC in-service is being assessed.

●	Red	Significant impacts with potential impacts on Revenue Service Date, Cost, or Customer Benefit Milestones
●	Yellow	Impacts which can lead to cost increases or schedule delays on individual milestones or contracts.
●	Green	No Near Term Impact for Design, Procurement & Construction. Successful management of major activity to stay on schedule or budget.



CBTC Queens Blvd. Line (Phase 1) Design & Furnish

- ❑ Awarded: Siemens – August 24, 2015
Thales – August 31, 2015
- ❑ Project Description: Design and furnish two CBTC interoperable systems with Automatic Train Supervision (ATS) from Union Turnpike (Queens) to 50th St.–8th Ave. (Manhattan)



CBTC Queens Blvd. Line (Phase 1) Design & Furnish

Overall Status

Item	Comments
Schedule	42% complete; Substantial Completion March 2021 (on schedule)
Cost	Within current budget of \$238M

Highlights

Progress	<ul style="list-style-type: none">❑ Delivery of Wayside and Carborne equipment is 24% completed❑ Factory integration tests (Zone Controller, Carborne Controller, Automatic Train Supervision) is 60% complete❑ Completed CBTC Test Track at Jamaica Yard
180 Day Look Ahead	<ul style="list-style-type: none">❑ Start upgrade of the Integrated Test Facility (ITF) at 2 Broadway in June 2018❑ Complete conversion of the Coney Island Yard and East New York Yard CBTC test tracks❑ Complete environmental qualification test on Carborne equipment



CBTC Queens Blvd. Line (Phase 1) Design & Furnish

Critical Milestones and Issues

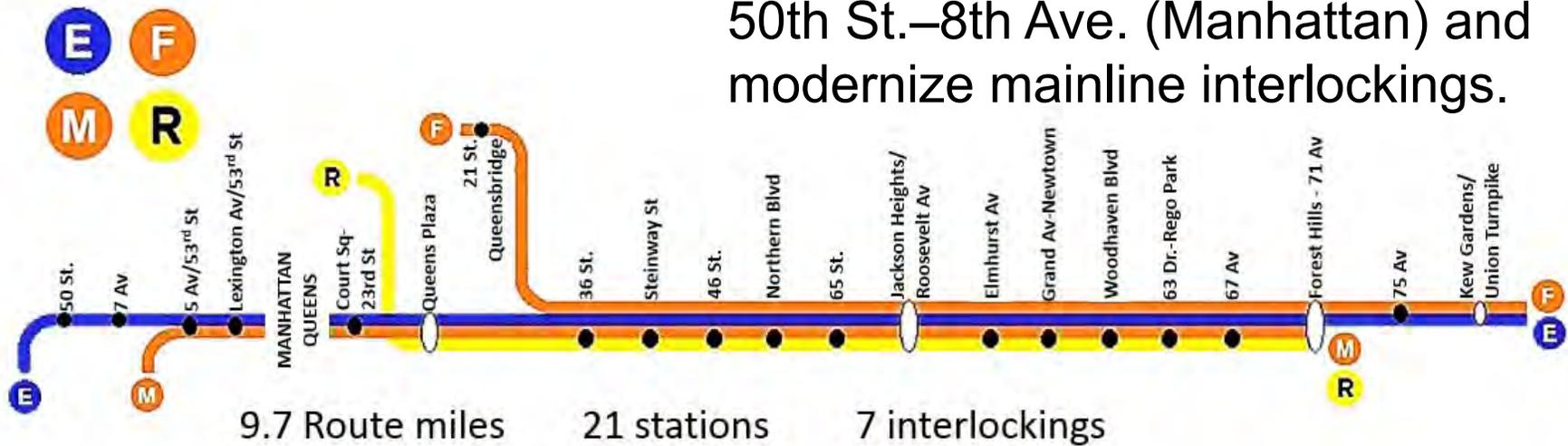
Status	Activity	Date Needed	Issues
● Green	Interoperability Verification	July 2018	Verification of interoperability between Siemens and Thales equipment.
● Green	CBTC Train Operator Simulator Training	December 2018	CBTC Train Operator Simulator Training must start by December 2018 in order to train approximately 50 train operators prior to the CBTC intermediate cutover
● Green	CBTC Equipment Installation on R160 Cars	June 2020	The 309 R160 units will be equipped by June 2020. Installation is on schedule.

●	Red	Significant impacts with potential impacts on Revenue Service Date, Cost, or Customer Benefit Milestones
●	Yellow	Impacts which can lead to cost increases or schedule delays on individual milestones or contracts.
●	Green	No Near Term Impact for Design, Procurement & Construction. Successful management of major activity to stay on schedule or budget.



CBTC Queens Blvd. Line (Phase 2) Installer

- ❑ Awarded: December 22, 2016
- ❑ Contractor: L.K. Comstock & Co.
- ❑ Project Description: Install all CBTC equipment, support testing and in-service of the CBTC interoperable system including ATS from Union Turnpike (Queens) to 50th St.–8th Ave. (Manhattan) and modernize mainline interlockings.



CBTC Queens Blvd. Line (Phase 2) Installer

Overall Status

Item	Comments
Schedule	24% complete; Substantial Completion July 2022 (on schedule)
Cost	Within Current budget of \$424M

Highlights

Progress	<ul style="list-style-type: none">❑ Installation of all wayside CBTC equipment is on-going.❑ Continue installing fiber optic cable at Rail Control Center (RCC) and the Backup Control Center (BCC)❑ Started installation of messenger brackets and conduits❑ Completed all wayside installation surveys
180 Day Look Ahead	<ul style="list-style-type: none">❑ Continue installation of CBTC field equipment❑ Continue installation of messenger brackets and conduits❑ Continue installation of Data Communication System and Automatic Train Supervision cabinets at RCC❑ Start installation of zone controller cabinets in relay rooms.



CBTC Queens Blvd. Line (Phase 2) Installer

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
● Green	Construct and equip 3 Signal Power Rooms and equip 2 existing Relay Rooms	December 2018	Coordination with Suppliers to provide CBTC and signal equipment is on-going
● Yellow	G.O., Work Train, and Flagging Availability	Now through 2022	Several G.O.s were lost due to conflicts with other work. Operations Planning has agreed to provide additional G.O.s in the 3 rd and 4 th quarters to maintain the schedule.

●	Red	Significant impacts with potential impacts on Revenue Service Date, Cost, or Customer Benefit Milestones
●	Yellow	Impacts which can lead to cost increases or schedule delays on individual milestones or contracts.
●	Green	No Near Term Impact for Design, Procurement & Construction. Successful management of major activity to stay on schedule or budget.



CBTC Equipment Supplier Interoperability

- ❑ Awarded: September 25, 2015
- ❑ Contractor: Mitsubishi Electrical Power Products
- ❑ Project Description: Develop an interoperable CBTC system to meet NYCT's I2S standards and safety certify the interoperable system.



CBTC Equipment Supplier Interoperability

Overall Status

Item	Comments
Schedule	39% complete; Substantial Completion projected for October 2019
Cost	Within current budget of \$20M

Highlights

Progress	<ul style="list-style-type: none">❑ Preliminary Design Review (PDR) was approved in December 2017❑ Started final Design Review (FDR). Received 5 out of 24 submittals (with 2 approved as noted)
180 Day Look Ahead	<ul style="list-style-type: none">❑ The remaining 19 Final Design Review submittals to be submitted for approval❑ Approve Final Design Review



CBTC Equipment Supplier Interoperability

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
 Green	CBTC Sub-system Design for Wayside and Car Equipment-PDR	December 2017	Completed PDR.
 Green	CBTC Sub-system Design for Wayside and Car Equipment (FDR)	August 2018	Final Design Review documents to be submitted.

	Red	Significant impacts with potential impacts on Revenue Service Date, Cost, or Customer Benefit Milestones
	Yellow	Impacts which can lead to cost increases or schedule delays on individual milestones or contracts.
	Green	No Near Term Impact for Design, Procurement & Construction. Successful management of major activity to stay on schedule or budget.



ISIM-B Module 1: Train Position Monitoring System (TPMS)

- Awarded: November 17, 2015
- Contractor: Yonkers Electric Contracting & U.S. Information Systems JV
- Project Description: Furnish and install equipment at 26 locations on the B Division to acquire field data from the signaling system. This data is required for ISIM-B (Module 3) and for Automatic Train Supervision (ATS) outside of CBTC territory

Overall Status

Status	Item	Comments
	Schedule	49% complete. Substantial Completion December 2018 (on schedule)
Green	Cost	Within budget of \$56M



ISIM-B Module 3: Large Scale Display at RCC and Data Warehouse

- Projected Award: 2nd Quarter 2018
- Project Description: Furnish and install large scale display at RCC and develop a data warehouse. In addition, this project will furnish and install workstations at RCC

Overall Status

Status	Item	Comments
<div style="text-align: center;">  Red </div>	Schedule	Project Award delayed to 2 nd quarter of 2018 due to extended technical and cost negotiations
	Cost	Total project budget - \$103M



Interlockings

Contract No.	Description	Schedule	Budget	Status
S-32769	2 Interlockings, QBL	Substantial Completion May 2018	Current Budget: \$298M Additional Contingency and TA Labor funds required to complete the project.	Y
S-32773	Dyre Avenue	Substantial Completion December 2017 (Actual)	Current Budget: \$237M	G
S-32764	34 th Street	Substantial Completion September 2018	Current Budget: \$185M Additional TA Labor funds required for 4-track weekend shutdowns used to increase contractor's productivity and prevent schedule delays. This will be funded from savings within the project.	G
S-32765	West 4 th Street	Substantial Completion September 2018	Current Budget: \$174M Additional TA Labor funds required for 4-track weekend shutdowns used to increase contractor's productivity and prevent schedule delays.	Y
S-32176	Kings Highway	Substantial Completion May 2021	Current Budget: \$183M	G



CBTC 8th Ave / 2 Interlockings – 30th St. & 42nd St.

- ❑ Projected Award: 1st Quarter 2019
- ❑ Project Description: Modernize 30th St and 42nd St Interlockings with Solid State Interlocking (SSI) technology and overlay the 8th Ave Line with CBTC from 59th St - Columbus Circle to High Street

Item	Comments
Schedule	Design Completion: June 30, 2018
Cost	Total Project Budget: \$681M



CBTC Culver Line

- ❑ Projected Award: 3rd Quarter 2018
- ❑ Project Description: Modernize Avenue X and Ditmas Ave Interlockings with Solid State Interlocking (SSI) technology and overlay the Culver Line in Brooklyn with CBTC from Church Ave to W. 8th St.

Item	Comments
Schedule	Design Completion April 30, 2018
Cost	Total Project Budget: \$446M



April 2018 CPOC IEC Project Review

CBTC NYCT Signals & Train Control Division

Communication Based Train Control (CBTC) Flushing Line

CBTC Queens Blvd Line (QBL) Queens Blvd Line

CBTC Equipment Supplier Interoperability



CBTC Flushing Line

IEC Summary Assessment

Progress was made in expanding CBTC revenue service north of 74th Street. However, system performance issues and lack of system stability are impacting the project team's ability to extend CBTC operation to the remaining section of the Line.



CBTC Flushing Line

- **Schedule:** NYCT is currently evaluating a revised schedule for remaining commissioning activities that was recently submitted by Thales.
 - The IEC is of the opinion that completion of in-service activities in the 2nd Quarter (as was reported to the Board in December) is no longer achievable.
 - System performance within the next few weeks will determine when CBTC operation can expand to the entire line.
- **Budget:** The project remains within the approved budget. The project has \$5M in reserve. However, additional funds may be required in the event of further delays to in-service activities.



CBTC Flushing Line

■ IEC Observations:

- Progress was made in expanding CBTC passenger service operation between Main Street & 74th Street to AM, PM and limited rush hours.
- The contractor has implemented a number of software modifications to address identified CBTC system issues.
- System performance issues continue to delay CBTC migration south of 74th Street
- The project team implemented an interim fix for damages to speed sensor hardware that caused speed measurement failures
 - A permanent fix based on a redundant architecture is planned for after completion of in-service activities



CBTC Flushing Line

■ IEC Concerns:

- Communication issues continue to impact system performance. The root cause of communication failures has not been determined
- Additional design/software modifications are required
- Software updates are needed to address Automatic Train Supervision (ATS) failures
- System issues are causing system interruptions
- Rescheduling of General Orders to support commissioning activities south of 74th Street could be challenging

Recommendation:

The IEC recommends a third party comprehensive, in-depth review of the Data Communication System (DCS) design



CBTC Flushing Line

■ Project Risks

- Remaining system issues continue to delay critical project milestones (achieving full CBTC service North of 74th Street & achieving CBTC system stability), which continue to impact full revenue service & Substantial Completion
- Migrating CBTC operation to south of 74th Street requires a high level of system stability
 - Limited existing wayside signals to support passenger service in the event of CBTC failure



CBTC-QBL Design and Furnish

- **Schedule:** The overall project remains on schedule
- **Budget:** The project remains within budget. AWO to add ATS work transferred from ISIM-B was approved. However, funding remains in ISIM-B project



CBTC-QBL Design and Furnish

■ IEC Observation:

- Project team is progressing the delivery and installation of CBTC equipment
- Completed prototyping of Thales carborne equipment
- Approved AWO to expand ATS to remaining lines on Division B
- A critical project milestone to verify interoperability between Siemens and Thales equipment is scheduled for July 2018

■ IEC Concern:

- The lack of an Integrated Project Schedule (IPS) may affect the project team's ability to coordinate between various QBL projects, identify schedule conflicts and measure progress

Recommendation:

The IEC continues to recommend that the project team establish an Integrated Project Schedule



CBTC-QBL Install

- **Schedule:** A review of project schedule documents indicate that the project is on schedule.
- **Budget:** The project remains within the current budget.



CBTC-QBL Install

■ IEC Observations

- Contractor completed all wayside installation surveys
- Contractor is progressing CBTC equipment installation, including transponders, radio and other communication equipment

■ IEC Concern:

- Lack of GO availability could impact the installation of equipment required to complete the pilot section, which is on the critical path for the project



CBTC Equipment Supplier Interoperability

- **Schedule:** The Third Supplier continues to progress the design of an interoperable CBTC system. However, the project remains 13 months behind schedule.
- **Budget:** The project remains within current budget



Systems & Security Program

Capital Program Oversight Committee

Systems & Security
Mark Bienstock, P.E.
Program Executive

April 2018



Projects

- Flushing Line Public Address System
- B Division Train Arrival
- Bus Radio System
- Bus Command Center



Flushing Line Public Address System

- ❑ Awarded: December 30, 2016
- ❑ Contractor: TC Electric
- ❑ Project Description: Furnish and install new Public Address and Customer Information Screens with real time train arrival information on the Flushing Line. Relies on Flushing CBTC/ATS for train tracking and arrival information. This project is Module 2 of the ISIM-B Program.



Flushing Line Public Address System

Overall Status

Item	Comments
Schedule	Substantial Completion is scheduled for March 2019
Cost	Total Project Budget is \$53.12M

Highlights

Progress	<ul style="list-style-type: none">Placed in service train arrival sub-system at 22 stations.
180 Day Look Ahead	<ul style="list-style-type: none">Complete Factory Acceptance Test of PA cabinets at 21 stations.Complete commissioning of PSLAN at two stations.



B Division Train Arrival

- ❑ Awarded: December 30, 2016
- ❑ Contractor: NYCT Department of Subways
MTA Information Technology
Transit Wireless, LLC.
- ❑ Project Description: This project will install new LCD screens in 271 B-Division Subway Stations and display train arrival information.



B Division Train Arrival

Overall Status

Item	Comments
Schedule	Original Substantial Completion date was March 31, 2018 – completed ahead of schedule in December 2017.
Cost	Within Budget of \$95M

Highlights

Progress	<ul style="list-style-type: none">• All 162 underground and 109 aboveground stations have been completed.• The Train Arrival system is live on all B Division Lines.• Completed Pre-Final inspection of 68 stations.
180 Day Look Ahead	<ul style="list-style-type: none">• Conduct Pre-Final inspections at remaining stations.• Submit as-built drawings.



B Division Train Arrival



34 Street Herald Square



39th Avenue/Astoria Line



Bus Radio System

- ❑ Awarded: March 2, 2016
- ❑ Contractor: Parsons Transportation Group
- ❑ Project Description: This project will design, furnish, and install a new digital radio system for NYCT and MTA Bus.



Bus Radio System

Overall Status

Item	Comments
Schedule	Substantial Completion forecast is January 2, 2021 – on schedule
Cost	Within Budget of \$272M

Highlights

Progress	<ul style="list-style-type: none">• Continued environmental surveys at base station sites.• Reviewed shop drawings for the pilot sites.• Developed bus equipment installation drawings.• Coordinated BRS work at new BCC with BCC Contractor
180 Day Look Ahead	<ul style="list-style-type: none">• Construct 2 Broadway, Transition Center, and other pilot radio sites.• Survey remaining base station sites.• Approve critical design review.• Conduct precast shelter First Article Inspection.• Conduct System Verification Review.



Bus Radio System

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
 Red	Critical Design Review	April 2018	A few technical issues are pending from the Critical Design Review. Completion of CDR has progressed and resolution is expected by April 2018.
 Green	Factory Acceptance of Base Stations	June 2018	None
 Yellow	Retrofit and Testing of 200 Buses for Staten Island Pilot	August 2019	The FAA is taking a longer than expected to approve the location of the monopole antenna at Todt Hill on Staten Island. Existing East New York Tower can not support additional antenna load. A new tower will be built. A budget modification is approved to fund the new tower.
 Green	Retrofit All Remaining Buses	August 2020	None
 Green	Substantial Completion	January 2021	None
 Red	Significant impacts with potential impacts on Revenue Service Date, Cost, or Customer Benefit Milestones		
 Yellow	Impacts which can lead to cost increases or schedule delays on individual milestones or contracts.		
 Green	No Near Term Impact for Design, Procurement & Construction. Successful management of major activity to stay on schedule or budget.		



Bus Command Center

- ❑ Awarded: June 26, 2015
- ❑ Contractor: MPCC Corp.
- ❑ Project Description: Design and construct a new, modern, secure command center for NYCT and MTA Bus operations.



Bus Command Center

Overall Status

Item	Comments
Schedule	Substantial Completion (SC) forecast is August 31, 2018 (previously reported February 28, 2018)
Cost	Current EAC is \$81.2 (an increase of \$4.6M over the current budget)

Highlights

Progress	<ul style="list-style-type: none">• Completed precast concrete wall panels, and majority of curtainwall system.• Completed green roof over operating theater, and began roof at remainder of building• Installed roof top units and emergency generators• Started elevator installation
180 Day Look Ahead	<ul style="list-style-type: none">• Complete curtainwall system and roofing• Complete installation of major systems• Start testing and commissioning activities



Bus Command Center

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
 Red	Permanent Power	April 2018	Due to a change in the size of the gas-fed generator (specified model no longer available) the gas service layout had to be modified, with the inclusion of additional equipment.
 Red	Building Enclosed and Weather-tight	April 2018	Delays due to slow productivity on installation of the curtainwall, and detailing issues. There was also a delay in the fabrication of the specialized bulletproof glazing for the elevator shaft due to the fabricator's workload.
 Red	Substantial Completion (SC)	August 2018	The current contractual SC is May 29, 2018. The SC date is forecast for August 31, 2018 due to delays associated with enclosing the building, permanent power and heating, and required change orders.

	Red	Significant impacts with potential impacts on Revenue Service Date, Cost, or Customer Benefit Milestones
	Yellow	Impacts which can lead to cost increases or schedule delays on individual milestones or contracts.
	Green	No Near Term Impact for Design, Procurement & Construction. Successful management of major activity to stay on schedule or budget.



Progress Photo



April 2018 CPOC IEC Project Review

Systems & Security Program

- Flushing Line Public Address
- B Division Train Arrival



Flushing Line Public Address System Schedule and Budget Review

- **Schedule:** The IEC review of the current project schedule finds that there is sufficient time to meet substantial completion March 2019. However, the IEC is concerned that the integration between the Flushing Automatic Train Supervision (ATS) System and the Public Address System may affect the substantial completion date.
- **Budget:** Our review of project budget documents finds that the outstanding work is in line with the remaining budget.



B Division Train Arrival Schedule and Budget Review

- **Schedule:** The IEC confirmed that the project has achieved substantial completion three months ahead of schedule with only punch list items and final inspections still outstanding.
- **Budget:** Our review of the project documents that there is sufficient funds to complete the original scope.



April 2018 CPOC IEC Project Review

BUS RADIO SYSTEM



IEC Observations and Concerns

- East New York Radio Tower repair:
 - A new tower is needed and the foundation work must be complete by the end of the pilot phase or the project schedule could be impacted.
 - The project has yet to contract with a structural engineering firm to perform the work.
 - Remedial work still remains for the existing ENY radio tower.
- Constructability issues with some base station sites may have schedule and cost impacts.
- Potential schedule and cost impacts exist if the project is unable to resolve contractor issues with respect to the turnover of the Bus Command Center and finalizing the Critical Design Review.



Budget and Schedule Review

□ Budget:

- For the current scope, the project is within budget. However, it does not reflect the funding needed for the new East New York Tower. Necessary additional funding for East New York Tower has been approved.

□ Schedule:

- Certain project risks if realized, will impact the ability of the project team to meet substantial completion.
- The project is working to mitigate delays to interim milestones:
 - Deployment of System Installation Work for Complete Command Center.
 - Deployment of Remaining Radio Base Station Sites.
 - Radio Base station Site Acceptance Testing.



April 2018 CPOC IEC Project Review

Bus Command Center



Bus Command Center

IEC Summary Assessment

- A budget increase will be required to bring the project to completion.
- Outstanding change order work required to complete the Bus Command Center will likely result in additional delays to the projected completion date.
- Building enclosure has been delayed by ongoing design issues with the glass curtainwall.
- Anticipated turn over of the Operating Theater to the Bus Radio contract is no longer progressing ahead of the rest of the building.



Bus Command Center

Schedule

- Notice to Proceed: June 2015
- Current contract completion date: February 2018
- Projected completion date: August 2018
- Critical milestones driving schedule delays:
 - Building Enclosed/Weather Tight
 - Permanent Power
 - Turn Over Operating Theater to Bus Radio Contract
 - Complete Elevator Installation
- Schedule status does not include the potential impact of un-negotiated change orders.



Bus Command Center

Budget

- Current Project Budget: \$76.6 M
- Current Estimate to Complete: \$81.2 M
- Contingency:
 - Remaining Construction Contingency: \$0.5 M
 - Remaining Programmatic Contingency: \$0.6 M
- Change Orders:
 - 58 AWO's totaling approx. \$2.0M have been approved and added to the construction contract.
 - Approximately 45 additional AWO's remain to be approved and added to the construction contract.



MTA Capital Program Commitments & Completions

through March 31, 2018

Capital Projects – Major Commitments – March 2018

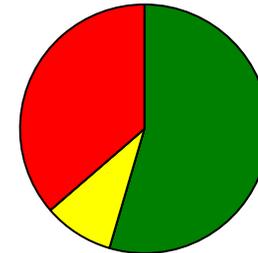
In 2018, agencies plan for a goal of \$7.3 billion in overall commitments with 43 major commitments planned.

Through March, agencies have committed \$1.7 billion versus a \$1.4 billion YTD goal. The favorable result was partly due to the awards of ESI Packages #4 and #8, which were not part of the original 2018 commitments goals. YTD actuals were below budget due in part to good bids savings of NYCT's Coney Island Yard Project.

Six major commitments were made on time or early, one was delayed but has now been committed, and four other major commitments remain delayed. The delays are explained on the following pages.

By year end, the MTA forecasts meeting or exceeding its overall \$7.3 billion goal.

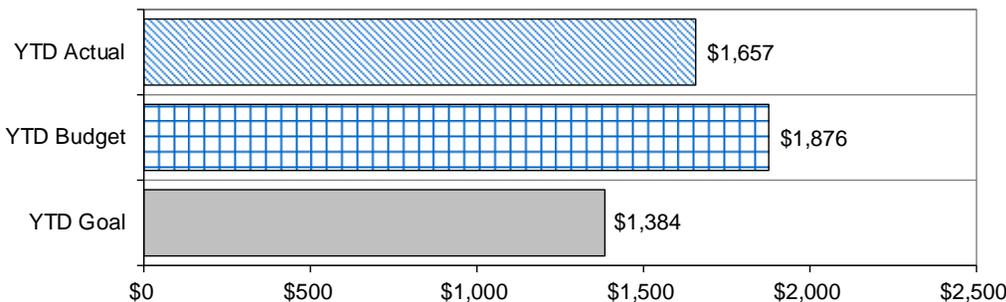
Year-to-Date Major Commitments



	Count	Percent	Change from Prior Month
GREEN = Commitments made/forecast within Goal	6	55%	↑ 3
YELLOW = Commitments delayed beyond Goal (already achieved)	1	9%	↑ 1
RED = Commitments delayed beyond Goal (not yet achieved)	4	36%	↑ 3
Total	11	100%	↑ 7

Budget Analysis

2018 Annual Goal	\$7,337	(\$ in millions)
2018 Forecast	106%	of Annual Goal
Forecast left to Commit	79%	(\$6,143)



Year-to-Date Agency Breakdown

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

Capital Projects – Major Commitments – March 2018 – Schedule Variances

Project	Commitment	Goal	Forecast
---------	------------	------	----------

4 All-Agency Red Commitments (4 new this month)

NYCT

Passenger Stations

ADA: Gun Hill Rd / Dyre (New Item)	Construction Award	Mar- 18	Apr- 18
		\$37.8	\$52.0

Delayed due to final procurement activities, but was awarded in early April. Project cost increased reflecting unfavorable bids received, as well as additional scope items.

ADA: Bedford Park Boulevard / Concourse (New Item)	Construction Award	Mar- 18	Apr- 18
		\$37.8	\$29.7

Delayed due to several bid extensions and final procurement activities. Project cost reflects favorable bids received. Award expected in April 2018.

Replace 12 Traction Elevators / Broadway-7th Avenue (New Item)	Construction Award	Mar- 18	Apr- 18
		\$88.1	\$97.9

Delayed due to final procurement activities, but was awarded in early April. Project cost increased due to scope changes and unfavorable bids.

MTACC

East Side Access

Harold Structures - Trackwork (CH057D) (New Item)	Construction Award	Mar- 18	Apr- 18
		\$48.5	\$48.5

Award is delayed due to the contractor's delay in finalizing administrative elements required by procurement to award the contract.

Capital Projects – Major Commitments – March 2018 – Schedule Variances

Project	Commitment	Goal	Actual
1 All-Agency Yellow Commitments (1 new this month)			
MNR			
<i>Signals & Communications</i>			
Harlem Cable Installation (New Item)	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.			

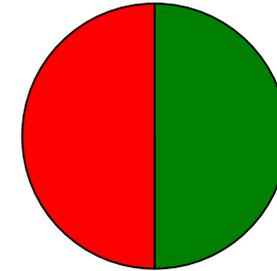
Capital Projects – Major Completions – March 2018

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

Through March, agencies have completed \$604 million versus a \$992 million YTD goal. The shortfall is due to delays with NYCT completions including R179 deliveries (\$93M), various track work (\$164M) and the purchase of 92 articulated buses (\$82M), all of which are forecast for achievement in the second quarter of 2018.

By year end, the MTA forecasts meeting or exceeding its overall \$6.3 billion completion goal.

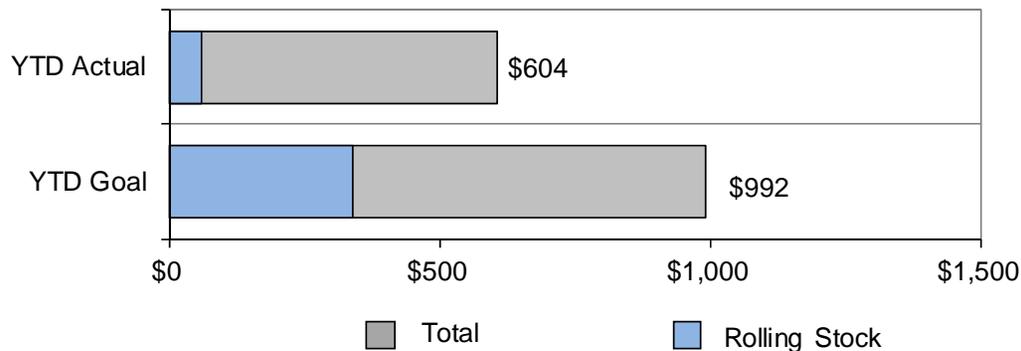
Year-to-Date Major Completions



	Count	Percent	Change from Prior Month
GREEN = Completions made/forecast within Goal	1	50%	↑ 1
YELLOW = Completions delayed beyond Goal (already achieved)	0	-	-
RED = Completions delayed beyond Goal (not yet achieved)	1	50%	↑ 1
TOTAL	2	100%	↑ 2

Budget Analysis

2018 Annual Goal \$6,299 (\$ in millions)
 2018 Forecast 101% of Annual Goal
 Forecast left to Complete 91% (\$5,772)



Year-to-Date Agency Breakdown

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

Capital Projects – Major Completions – March 2018 – Schedule Variances

Project	Completion	Goal	Forecast
1 All-Agency Red Completion (1 new this month)			
NYCT			
<i>Buses</i>			
Purchase 92 Articulated Buses (Nova) (New Item)	Fleet Procurement	Mar- 18	May- 18
		\$83.9	\$83.9
<p>Deliveries will be completed in May 2018. Additional technical requirements, processed post-award, have resulted in a longer turnaround time for the vendor's overall production of each bus.</p>			

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

Prior Years' Major Commitments – Quarterly Update: March 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 55 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. Of the remaining projects, two remain delayed and are forecast for award for April 2018. To date, \$3.5 billion has been committed against the original \$3.2 billion goal.

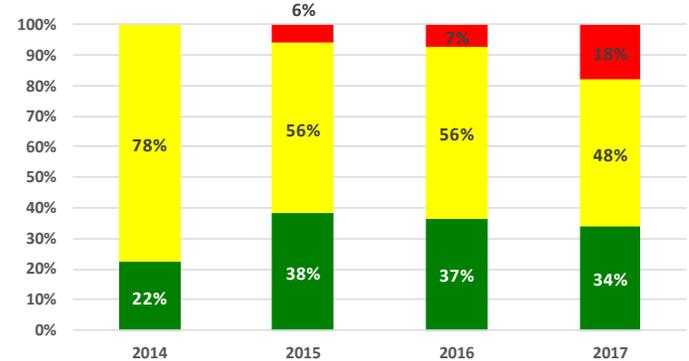
In 2016, agencies set an overall MTA commitments goal of \$6.6 billion including 41 major commitments. In 2016, 27 major commitments and a total of \$5.0 billion were made. Of the remaining projects, three remain delayed and are forecast for award in 2018. To date, \$6.3 billion has now been committed.

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, two were awarded in the first quarter of 2018, eight are forecast for award in 2018, and one multi-phase project has its final award activities scheduled for 2019.

Actual Goal	MTA-Wide Prior Years' Major Commitments														Post 2018	
	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	180															
2014	54	12	42													
2015	34	13	19				2									
2016	41	15	23						1						2	
2017	51	17	22		2		1	4	2						1	1

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 within Goal **YELLOW** = Commitments delayed beyond Goal (already achieved) **RED** = Commitments delayed beyond Goal (not yet achieved)

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

Project	Commitment	Goal	Forecast
14 All-Agency Red Commitments (9 new this quarter)			
NYCT			
<i>Sandy</i>			
Sandy: 148th Yard Long-Term Perimeter Protection & Power Cable	Construction Award	Nov-15	Apr-18
		\$135.1M	\$88.8M
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: 207th Yard Perimeter Protection & Power Cable	Construction Award	Oct-16	Jun-18
		\$222.7M	\$675.7M
Delayed to June 2018 due to the need to redesign the perimeter wall to address a DEP concern, which is to avoid interferences with a major water main. Also, CPM is combining the signal and track work which was prepared as a separate project with the perimeter wall and portal work to make it all one project. Cost reflects combined projects including Yard Signals, Yard Track & yard Switches			
Sandy Mitigation: Upgrade Emergency Booth Comm System (New Item)	Construction Award	Nov- 17	May- 18
		\$67.1M	\$75.0M
Project award extended to May 2018 due to protracted RFP procurement process. Project cost increased reflecting negotiated amount.			
<i>Stations</i>			
ADA: 68 St- Hunter College / Lexington	Construction Award	Sep-16	Dec-18
		\$66.8M	\$116.3M
Award Schedule delayed to 2018 pending resolution of Real estate issues. Hunter College issues were resolved but the Imperial House issues remain unresolved. Project cost increased due additional scope that resulted in additional architectural , structural, electrical and utility relocation work, The complexity of the utility relocation work with limited space constraints requires multiple construction phasing to keep the street open to both vehicular and pedestrian traffic throughout construction.			

Project	Commitment	Goal	Forecast
NYCT (Continued)			
<i>Work Equipment</i>			
Work Train & Special Equipment: 54 Flat Cars	Purchase Award	Dec-15	Apr-18
		\$33.5M	\$33.5M
Award re- scheduled to April 2018. Procurement has re- issued a new Request for Proposal (RFP) to prospective proposers . Three (3) proposals have been received. One prospective proposer was eliminated.			
<i>Signals & Communications</i>			
ISIM- B Module 3: Rail Traffic Systems (New Item)	Construction Award	Aug- 17	Jun- 18
		\$91.7M	\$108.1M
Project award delayed to 2nd quarter of 2018 due to extended technical and cost negotiations during procurement.			
<i>Passenger Stations</i>			
Access Improvements: Grand Central: Phase 2 (New Item)	Construction Award	Jul- 17	Jul- 19
		\$66.7M	\$66.7M
Procurement will be done through multiple phases reflecting the various activities in the project.			
<i>Service Vehicle</i>			
Purchase Locomotives (New Item)	Purchase Award	Dec- 17	Dec- 18
		\$128.3M	\$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 (New Item)	Construction Award	Dec- 17	May- 18
		\$62.7M	\$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).			

Prior Year Major Commitments – March 2018 – Schedule Variances				Actual Results Shaded			
Project	Commitment	Goal	Forecast	Project	Commitment	Goal	Actual
MNR				2 All-Agency Yellow Commitments (2 new this month)			
<i>Sandy</i>				NYCT			
Power and Signal Mitigation (New Item)	Construction Award	Nov- 17 \$20.6M	Jun- 18 \$20.6M	Purchase 525 R211 Cars & 10 Open Gangway (New Item)	Construction Award	Jun- 17 \$1534.5M	Feb- 18 \$1736.8M
Due to procurement challenges, contract will be readvertised in February 2018 and is scheduled to be awarded in June 2018.				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.			
MTA CC				MTA Bus Company			
<i>East Side Access</i>				<i>Depot Projects</i>			
Systems Package 2 : Installation of Signals (New Item)	Construction Award	Jun- 17 \$44.9M	May- 18 \$44.9M	Security: JFK and Spring Creek (New Item)	Construction Award	Sep-17 \$9.2M	Feb-18 \$8.5M
Additional time required for extended negotiation and procurement review process.				Award slipped now due to a protracted procurement and a longer than expected award process following bidding.			
<i>Penn Station Access</i>							
GEC Design (New Item)	Construction Award	Dec- 17 \$37.0M	May- 18 \$33.5M				
Delay due to change in procurement strategy.							
B&T							
Electrical/Mechanical Rehab of HR Lift Span (New Item)	Construction Award	Nov- 17 \$17.0M	Apr- 18 \$30.9M				
Design/Build teams requested additional time to review RFP documents.							
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 Years' Major Completions – Quarterly Update: March 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. One remaining project is forecast for completion in 2018. To date, \$6.4 billion has been completed against the original \$5.7 billion goal.

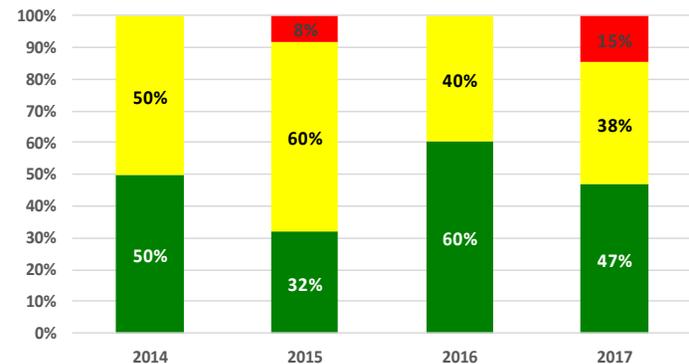
In 2015, agencies set an overall MTA completions goal of \$2.6 billion including 25 major completions. In 2015, 19 major completions totaling \$2.1 billion were made. Of the remaining projects, two remain delayed and are forecast for completion in 2018. To date, \$2.2 billion has been completed against 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. Two remaining projects are now forecast for completion in 2018. To date, over \$4.2 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 eight 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						
2017	34	16	8	1		1		2	1			1	2		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 – March 2018 – Schedule Variances

Project	Completion	Goal	Forecast	Project	Completion	Goal	Forecast
13 All-Agency Red Completions (8 new this quarter)				LIRR (continued)			
NYCT				Track			
<i>Signals and Communications</i>				Massapequa Pocket Track (New Item)			
PA/CIS at 45 Stations - Install Cable	Construction Completion	Dec-15 \$56.1M	Dec-18 \$56.0M	Construction	Nov-17 \$19.6M	Apr-19 \$19.6M	
Project delayed to 2018 due to slow progress of work. In-house forces were diverted to address other safety sensitive projects.				Delay due to lack of force account resources in the signals area.			
CBTC Flushing Line (New Item)				MNR			
Construction	Nov-17 \$505.2M	Oct-18 \$563.6M		<i>Grand Central Terminal</i>			
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).				GCT Leaks Remediation			
				Construction Completion	Dec-16 \$18.6M	May-18 \$18.6M	
				Due to time impacts associated with additional unforeseen structural repairs to the 45th St Bridges and historic 45th St bridge panel restoration production delays the project completion has been rescheduled for May 2018.			
<i>Subway Cars</i>				Sandy			
Accept 62 R179 Rail Cars (New Item)	Fleet Purchase	Dec-17 \$162.8M	Mar-19 \$162.8M	Power Infrastructure Restoration - Substations (New Item)			
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.				Construction	Aug-17 \$43.8M	Jun-18 \$44.4M	
				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>Depots</i>				Power			
Bus Command Center Construction (New Item)	Construction	Nov-17 \$51.4M	May-18 \$56.0M	Substation Bridge 23 - Construction (New Item)			
Substantial Completion is delayed to May 2018 due to the enclosing of an elevator shaft. Additional time is also required for the design of additional beam to support shaft wall and for the fabrication of safety glass for elevator shaft, required for the commissioning of the elevator.				Construction	Oct-17 \$41.7M	Oct-18 \$41.7M	
				Due to an unforeseen operational issue during final cut over, additional work is required to address a point of failure of a substation component.			
LIRR							
<i>Signals and Communications</i>							
Centralized Traffic Control	Construction Completion	Jun-15 \$12.9M	Sep-18 \$12.9M				
As a result of a re-evaluation of the Theater Operations, it was determined that a re-design of the Theater is necessary.							

Prior Year Major Completions – March 2018 – Schedule Variances
Actual Results Shaded

Project	Completion	Goal	Actual
MTACC			
<i>East Side Access</i>			
Plaza Substation and Structures (CQ032)	Construction Completion	Aug-16 \$250.2M	Jun-18 \$257.7M
Completion of final work items has taken longer than expected. Final outstanding items are expected to be completed by June 2018.			
GCT Councourse Finishes Early Work	Construction Completion	Apr-14 \$56.7M	Jun-18 \$58.0M
Completion of final work items has taken longer than expected. Final agreement is being negotiated then substantial completion will be issued.			
Manhattan Northern Structures (New Item)	Construction	Jun- 17 \$361.6M	Jun- 18 \$361.6M
Delay is due to contractor productivity issues.			

BUS COMPANY
Bus Company Projects

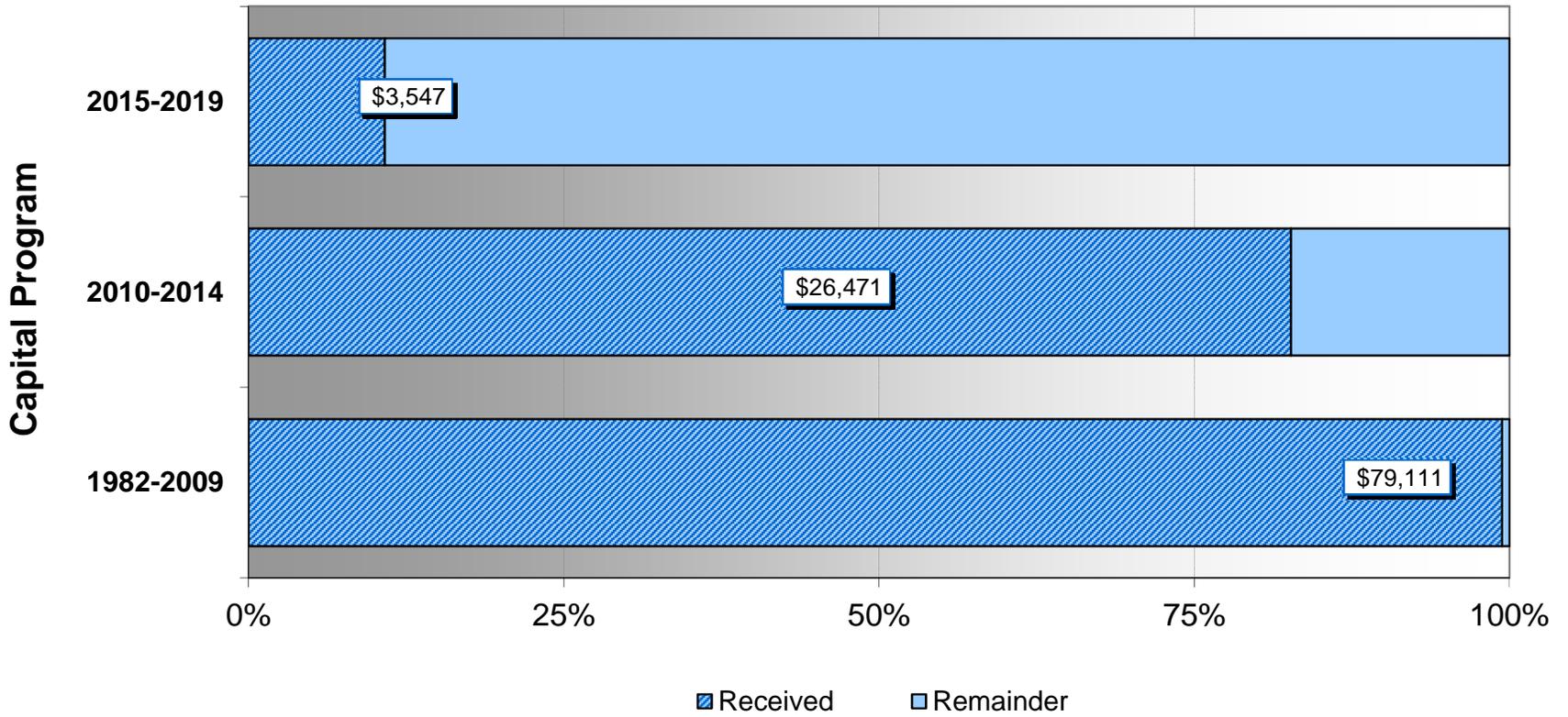
Bus Command Center - MTA Bus (New Item)	Construction	Dec- 17 \$17.1M	May- 18 \$17.1M
Substantial Completion is delayed to May 2018 due to the enclosing of an elevator shaft. Additional time is also required for the design of additional beam to support shaft wall and for the fabrication of safety glass for elevator shaft, required for the commissioning of the elevator.			

Project	Completion	Goal	Actual
2 All-Agency Yellow Completions (2 new this quarter)			
NYCT			
<i>Bus Replacement</i>			
Purchase 139 Articulated Buses (New Item)	Fleet Purchase	Nov- 17 \$120.3M	Jan- 18 \$120.2M
The delay was due to required testing for the fleet's braking systems.			
B&T			
MPB / CBB Master Plan & Resiliency Needs (New Item)	Construction	Dec- 17 \$10.0M	Mar- 18 \$10.0M
Additional time required for structural data collection and traffic analysis			

Status of MTA Capital Program Funding

Capital Funding (March 2018)

\$ in millions



Capital Funding Detail (March 31, 2018)

\$ in millions

	Funding Plan	Receipts		
	Current	February	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	24,397	23,930	-	23,930

	Funding Plan	Receipts		
	Current	February	This month	Received to date
2010-2014 Program				
Federal Formula, Flexible, Misc	\$5,544	\$5,544	\$ -	\$5,544
Federal High Speed Rail	295	295	-	295
Federal Security	1,257			
Federal New Start	193	100	-	100
Federal RIFF Loan	-	-	-	-
City Capital Funds	729	608	-	608
State Assistance	770	400	-	400
MTA Bus Federal and City Match	132	108	-	108
MTA Bonds (Payroll Mobility Tax)	11,772	10,980	-	10,980
Other (Including Operating to Capital)	1,736	1,479	-	1,479
B&T Bonds	2,021	2,018	3	2,021
Hurricane Sandy Recovery				
<i>Insurance Proceeds/Federal Reimbursement</i>	6,343	4,727	-	4,727
PAYGO	235	81	-	81
<i>Sandy Recovery MTA Bonds</i>	758	2	-	2
<i>Sandy Recovery B&T Bonds</i>	230	124	-	124
Total	32,015	26,467	3	26,471

	Funding Plan	Receipts		
	Current	February	This month	Received to date
2015-2019 Program				
Federal Formula, Flexible, Misc	\$6,956	\$1,030	\$ -	\$1,030
Federal Core Capacity	100	-	-	-
Federal New Start	500	-	-	-
State Assistance	8,466	65	-	65
City Capital Funds	2,492	271	-	271
MTA Bonds	7,907	12	-	12
Asset Sales/Leases	600	-	-	-
Pay-as-you-go (PAYGO)	2,270	1,655	36	1,691
Other	575	36	(36)	-
B&T Bonds & PAYGO	2,940	264	215	479
Total	32,806	3,333	215	3,547