



Metropolitan Transportation Authority

Capital Program Oversight Committee Meeting

January 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, 1/22/2018
2:00 - 3:30 PM ET**

1. PUBLIC COMMENTS PERIOD

2. APPROVAL OF MINUTES DECEMBER 11, 2017

- Minutes from December '17 - Page 3

3. COMMITTEE WORK PLAN

- 2018-2019 CPOC Committee Work Plan - Page 6

4. NYCT CAPITAL PROGRAM UPDATE

- Progress Report on Bus Procurement Update - Page 8*
- IEC Project Review on Bus Procurements - Page 30*
- Progress Report on Subway Car Program Update - Page 35*
- IEC Project Review on Subway Car Procurements - Page 48*
- Progress Report on Sandy Recovery and Resiliency Division Update - Page 54*
- IEC Project Review on Canarsie Tunnel Rehab - Page 79*
- IEC Project Review on Myrtle Viaduct - Page 83*
- IEC Project Review on Clifton Shop - Page 86*

5. CAPITAL PROGRAM STATUS

- Year End Commitments, Completions, and Funding Report - Page 89

Date of next meeting: Tuesday, February 20, 2018 at 1:30 PM

MINUTES OF MEETING
MTA CAPITAL PROGRAM OVERSIGHT COMMITTEE
December 11, 2017
New York, New York
1:30 P.M.

MTA CPOC members present:

Hon. Joseph Lhota
Hon. Andrew Albert
Hon. Norman Brown
Hon. Ira Greenberg
Hon. Susan Metzger
Hon. Mitchell Pally
Hon. Polly Trottenberg
Hon. Carl Weisbrod
Hon. Neal Zuckerman

MTA CPOC members not present:

Hon. Fernando Ferrer
Hon. John Molloy
Hon. Lawrence Schwartz
Hon. James Vitiello
Hon. Peter Ward
Hon. Carl Wortendyke

MTA Board member present:

Hon. Scott Rechler

MTA staff present:

Veronique Hakim
Donald Spero
Michael Wetherell

MTACC staff present:

Tony D'Amico
Dan Creighton
Tim Gianfrancesco
Janno Lieber
Eve Michel

NYCT staff present:

Mark Bienstock
Robert Gomez

Independent Engineering Consultant staff present:

Chris Adams
Joe DeVito
Nabil Ghaly
Dianne Rinaldi

* * *

Chairman Lhota called the December 11, 2017 meeting of the Capital Program Oversight Committee to order at 3:45 P.M.

Public Comments Period

There was one public speaker in the public comments portion of the meeting: Kevin Zeng.

Meeting Minutes

Upon motion duly made and seconded, the CPOC members approved the minutes to the previous meeting held on November 13, 2017.

Committee Work Plan

Mr. Spero announced that there was one change to the Work Plan: the East Side Access presentation, originally scheduled for this month, will be provided in March 2018 as part of MTACC's next appearance at CPOC; meantime, MTACC will continue to report on the project to the LIRR Committee. In addition, Mr. Spero cited the proposed CPOC Work Plan for 2018, and asked Committee Members to provide any questions or suggestions they may have.

Agency Capital Program Updates

Citing the fact that all presentation materials have been provided in the book, and in consideration of the late start time of the meeting (and given that one additional Committee meeting lay yet ahead on the day's schedule), Chairman Lhota proposed that in lieu of the agencies actually making each presentation, that should Committee Members have any questions on the materials, staff would be available to address them. Commissioner Albert did have one such question (on CBTC) to which Mr. Bienstock responded.

MTA Capital Program Commitments & Completions and Funding

Ms. Hakim presented commitment and completion performance highlights through November. With respect to Commitments through November, the MTA has made 28 major commitments, and 14 more commitments are forecast to be made by year's end. With awards expected in December, the MTA currently anticipates meeting its 2017 commitments goal of \$7.3 billion by year's end. With respect to Completions in 2017, agencies plan a total of \$5.0 billion, including 34 major completions. The MTA has achieved 20 major completions year-to-date (with 4 more anticipated within the year). By year's end, the MTA forecasts achieving 84% of its 2017 completions goal.

Capital Program Traffic Light Reports

Mr. Spero presented highlights of MTA's Traffic Light Report for the 3rd Quarter 2017. A total of 282 projects were reviewed in the 3rd Quarter: 52 in design and 230 in construction: 64% were designated green; 21% were designated yellow and 15% were designated red, which is a decrease of 1 red project from the 2nd Quarter 2017. With respect to Capital Sandy Program Traffic Light Report, a total of 98 projects were reviewed in the 3rd Quarter: 7 in Design, 18 in Post-Design to Construction, and 73 in Construction. Of the 98 projects reviewed: 62% were designated green; 20% were designated yellow; 18% were designated red, which is a decrease of 4 red projects from the 2nd Quarter 2017. Also, for each of the projects designated red, there is a one-page report in the book stating the problem and corrective action.

QUARTERLY CAPITAL CHANGE ORDER REPORT

Mr. Spero cited -- for information only -- the quarterly Capital Change Order Report covering the 3rd Quarter of 2017; he then asked if there were any questions, of which there was none.

Adjournment

Upon motion duly made and seconded, Chairman Lhota adjourned the December 11, 2017 meeting of the MTA Capital Program Oversight Committee at 3:55 PM.

Respectfully submitted,
Michael Jew-Gerals
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

February

B&T Capital Program Update

- Verrazano–Narrows Bridge Program Update
- Tunnel Program Update
- Robert F. Kennedy Bridge Program Update

LIRR and MNR Update on Positive Train Control (PTC)

Update on Minority, Women and Disadvantaged Business Participation

March

Quarterly MTACC Capital Program Update

- Cortlandt Street Station
- East Side Access
- Second Avenue Subway Phase 2
- Penn Station Access

Quarterly Change Order Report

Quarterly Traffic Light Reports

April

NYCT Capital Program Update

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

Update on Capital Program Security Projects (in Executive Session)

May

LIRR and MNR Capital Programs Update

NYCT, LIRR, MNR Update on New Fare Payment System

June

Quarterly MTACC Capital Program Update

LIRR and MNR Update on Positive Train Control (PTC)

Quarterly Change Order Report

Quarterly Traffic Light Reports

July

NYCT Capital Program Update

September

Quarterly MTACC Capital Program Update

Update on Minority, Women and Disadvantaged Business Participation

Update on Small Business Development Program

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)

Update on Capital Program Security Projects (in Executive Session)

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

Bus Procurement Update

Capital Program Oversight Committee

John Higgins

Chief Maintenance Officer – Bus Operations

January 2018



Vision

Area	Action
Safety	<ul style="list-style-type: none">• Employ latest safety technology• Improve driver visibility
Environmental Sustainability	<ul style="list-style-type: none">• Transition to a zero-emissions fleet• Purchase first all-electric buses• Continue commitment to CNG and hybrid-electric buses
Customer Amenities	<ul style="list-style-type: none">• Equip all new buses with digital information screens, free wi-fi, and USB charging ports
Improved Service	<ul style="list-style-type: none">• Make all buses Transit Signal Priority (TSP) ready• Install Automatic Passenger Counters (APC)



New Safety Technology



Pedestrian Turn Warning (PTW)

- ▣ Audible announcement outside the bus when the bus makes a turn
- ▣ Included on all new bus deliveries

Additional on-bus cameras

- ▣ Improves situational awareness for incident investigations

Collision Warning System (CWS)

- ▣ Detects potential front and side collisions and warns the operator
- ▣ Ongoing testing to improve functionality

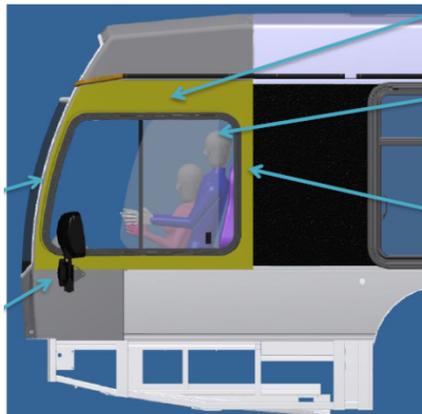
Further Improved Driver Visibility



Smaller A-Pillar

- Reduces obstruction by ~50%
- Included on all new transit bus deliveries

Design Objectives



Front shell with frame

Improved visibility window

Structural changes to further improve visibility

Relocated B-Pillar

- Expands front left window next to operator
- Included on Nova production buses starting September 2018



Electric Bus Market

All-electric bus market is still new

- Approximately 250 all-electric buses in use by an estimated 30 North American transit agencies
- 4 major manufacturers: New Flyer, Proterra, Nova, and BYD
- Largest known fleet in operation is 18 buses at Sun Valley Transit in Pomona, CA
- Largest committed purchase is 95 buses by LA Metro

Design and technical standards are continuing to develop

- Charging protocols are often manufacturer specific
- Battery technology is continually evolving
- Full life-cycle experience is not yet available



Electric Bus Pilot (1/2)

10 leased all-electric bus pilot began service this month

- ▣ 5 buses from New Flyer operating in Manhattan on the M42
 - On street charging stations at terminal areas at each end of 42nd street
 - Supplemental overnight chargers at MJ Quill Depot
- ▣ 5 buses from Proterra operating in Queens and Brooklyn on the B32
 - Overnight chargers at Grand Ave Depot
 - On street charging station at Williamsburg Bridge Plaza (for longer route testing)



Electric Bus Pilot (2/2)

Technical and operational testing will proceed throughout 2018

- ❑ Charging times and efficiency
- ❑ Battery usage under various conditions
- ❑ Impacts of weather on equipment and battery life



New Flyer bus at MJ Quill Depot



Planned Electric Bus Purchases

Purchase 60 all-electric buses through 2020

- 15 articulated all-electric buses to be delivered in time for operation on 14th Street for the L-Line Bus Shuttle Replacement Service.
- 45 standard all-electric bus purchase award planned for Q4 2019



1/3 of all new bus purchases in the 2015-2019 capital plan are CNG, hybrid diesel-electric, or all-electric

- 248 CNG buses (138 standard; 110 articulated)
- 285 hybrid diesel-electric standard buses
- 60 all-electric buses (45 standard; 15 articulated)

First Articulated Compressed Natural Gas (CNG) Buses

- Expands service flexibility of CNG fleet
- 110 bus purchase to be delivered by December 2018



New Hybrid-Electric Technology

- Test fleet of 10 new hybrid-electric standard buses to be delivered in 2018
- Follow-up purchase of 275 new technology hybrids planned for 2019

New Customer Amenities



Digital Information Screens (DIS)

- Provide route and next stop information, as well as targeted advertising
- Included on all new bus deliveries beginning with the 377 New Flyer 40' standard order



Free Wi-Fi

- Allows riders to stay connected during their trip
- Included on all new deliveries

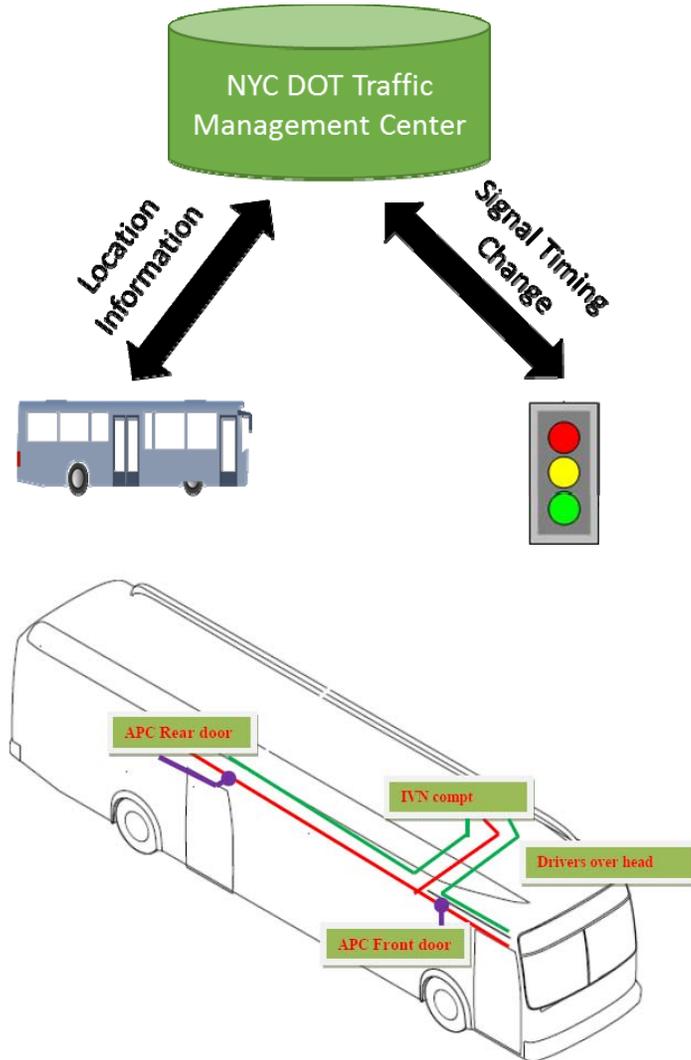


USB Charging Ports

- Allows riders to charge their devices during their trip
- Included on all new deliveries



Service Improvement Technology



Traffic Signal Priority (TSP)

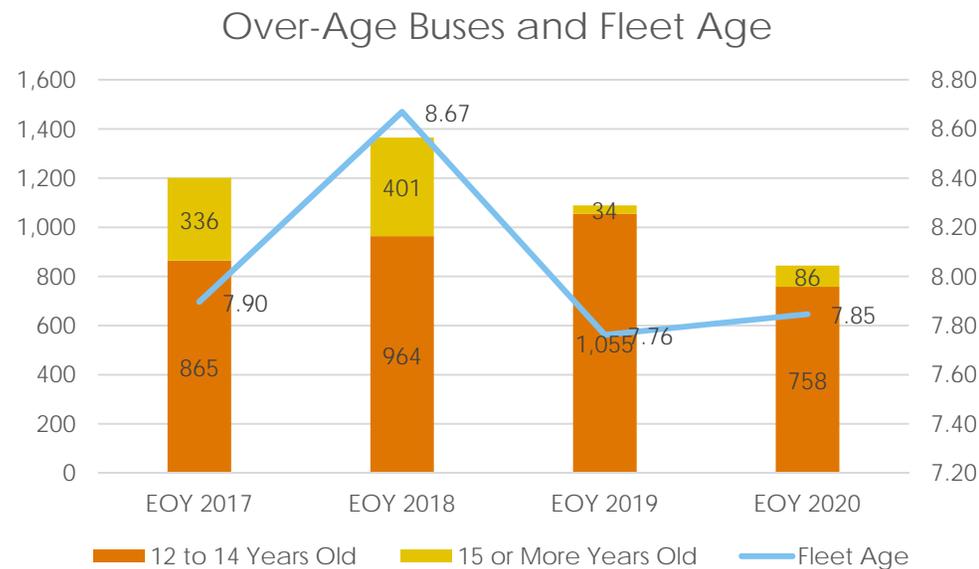
- Communicates with traffic signal to shorten red lights or extend green lights
- All new bus deliveries are TSP-ready

Automatic Passenger Counters (APC)

- Counts all boardings and alightings using sensors at each door
- Included on all new bus deliveries starting in April 2018
- Better management of service and schedule with real time data

Fleet Dynamics

- 2015-2019 bus purchases will reduce the share of the fleet over 15 years old from 7% in 2018 to 1.5% in 2020
- Buses over 15 years old have the highest failure rate in the fleet, negatively impacting service
- 200 buses will have their retirement delayed to support L-Line Bus Shuttle Replacement Service in 2019



Current Fleet

	NYCT DOB	MTA Bus	Total
Standard 40'	3,184	671	3,855
Diesel	1,350	66	1,416
CNG	548	218	766
Hybrid	1,286	387	1,673
Articulated 60'	789	115	904
Express 45'	497	522	1,019
TOTAL	4,470	1,308	5,778

Based on Winter 2018 Bus Assignment



2017 Deliveries

Fleet	Type	Agency	Total Order	Delivered	Status	Capital Program
New Flyer XN-40 CNG	Standard	NYCT	138	138	Complete	2015-2019
New Flyer XD-60 Clean Diesel	Articulated	NYCT	139	139	Complete	2010-2014
Nova 60-ft Clean Diesel	Articulated	NYCT	92	1	In Production	2010-2014
New Flyer XN-60 CNG	Articulated	NYCT	110	1	Pilot Bus In-Service Evaluation	2015-2019
New Flyer XD-40 Clean Diesel / Hybrid	Standard	NYCT	377	1	Pilot Bus In-Service Evaluation	2015-2019
New Flyer All Electric Bus (Lease)	Standard	NYCT	5	5	Complete	N/A
Proterra All Electric Bus (Lease)	Standard	NYCT	5	3	In Production	N/A
Total			866	288		

All Procurements are on schedule and on budget.



Current Bus Deliveries

92 60-ft Diesel Artics (NYCT-DOB)

Item	Comments
Scope	92 buses from Nova
Schedule	Awarded in March 2016 Configuration audit occurred in Nov 2016 Pilot bus in-service evaluation began in Jan 2017 Deliveries expected between December 2017 and May 2018
Project Budget	\$81.9 million

Highlights

- First Nova “New Look” buses.
- Replaces some SBS routes in Manhattan and the Bronx.
- Equipped with Wi-Fi, USB chargers, and hi-vis windows, phase 1.



Current Bus Deliveries

110 60-ft CNG Artics (NYCT-DOB)

Item	Comments
Scope	110 buses from New Flyer
Schedule	Awarded April 2017 Pilot bus in-service evaluation began October 2017 Deliveries expected between April and December 2018
Project Budget	\$106.4 million

Highlights

- First articulated CNG bus.
- Will operate in Brooklyn and the Bronx.
- Replace end-of-life 2004 CNG buses.
- Equipped with USB chargers, Wi-Fi, digital information screens, automatic passenger counters, pedestrian turn warning, exterior cameras, and hi-vis windows.



Current Bus Deliveries

367 Clean Diesel & 10 Hybrid 40-ft Standards (NYCT-DOB)

Item	Comments
Scope	377 buses from New Flyer
Schedule	Awarded June 2017 Pilot In-service evaluation began January 2018 and Hybrid expected to start in February 2018 Deliveries expected between April 2018 and June 2019 Hybrid deliveries expected between March and September 2018
Project Budget	\$235.7 million

Highlights

- Will replace end-of-life Nova 1999 diesels and Orion 2004 hybrids.
- Equipped with USB chargers, Wi-Fi, and digital information screens, pedestrian turn warning, exterior cameras, automatic passenger counters, and hi-vis windows.



Current Bus Deliveries

251 40-ft Clean Diesel Standards (NYCT-DOB)

Item	Comments
Scope	251 buses from Nova
Schedule	Awarded June 2017 Pilot bus delivery expected March 2018 Deliveries expected between February and July 2019
Project Budget	\$161.0 million

Highlights

- Will replace end-of-life Nova 1999 diesels and Orion 2004 hybrids.
- Equipped with USB chargers, Wi-Fi, and digital information screens, pedestrian turn warning, exterior cameras, automatic passenger counters, and hi-vis windows, phase 2.



Current Bus Deliveries

Lease of 10 40-ft All Electric Buses (NYCT-DOB)

Item	Comments
Scope	5 buses from Proterra; 5 buses from New Flyer
Schedule	Awarded August 2017 to Proterra and September 2017 to New Flyer Deliveries to be completed in January 2018
Project Budget	\$23 million

Highlights

- New Flyer buses will operate in Manhattan on 42nd Street.
- Proterra buses will operate from the Williamsburg Bridge Plaza on the B32.
- After evaluation, procure 45 Standard AEBs.



Current Bus Deliveries

108 Clean Diesel 60-ft Artics (NYCT-DOB)

Item	Comments
Scope	108 buses from New Flyer
Schedule	Awarded December 2017 Pilot bus expected July 2018 Deliveries expected between January 2019 and October 2019
Project Budget	\$98.8 million

Highlights

- Will replace 2003 New Flyer artics and other fleets.
- Equipped with USB chargers, Wi-Fi, and digital information screens, pedestrian turn warning, automatic passenger counters, and exterior cameras, and hi-vis windows.



Current Bus Deliveries

72 Clean Diesel 60-ft Artics (NYCT-DOB)

Item	Comments
Scope	72 buses from Nova
Schedule	Awarded January 2018 Deliveries expected between September 2018 and March 2019
Project Budget	\$65.8 million

Highlights

- Will replace 2003 New Flyer artics and other fleets.
- Buses will operate on the L-Line bus shuttle replacement service and then in Manhattan and the Bronx on SBS routes.
- Equipped with USB chargers, Wi-Fi, and digital information screens, pedestrian turn warning, automatic passenger counters, and exterior cameras, and hi-vis windows (Nova, phase 2).



Remaining Procurements for 2015-2019 Capital Program

Fleet	Type	Agency	Total Order	Status
60-ft Clean Diesel	Artic	MTA	53	In solicitation stage
60-ft All Electric Bus	Artic	NYCT	15	Solicitation release in Q1 2018
45-ft Coach	Express	MTA	257	Solicitation release expected Q2 2018
45-ft Coach	Express	NYCT	50	Solicitation release expected Q2 2018
40-ft Hybrid	Standard	NYCT	275	In development
40-ft All-Electric Bus	Standard	NYCT	45	In development
40-ft Clean Diesel	Standard	MTA	25	In development
Total			720	



January 2018 CPOC IEC Project Review

Bus Procurements

January 22, 2018



Schedule Review

- Contracts Awarded in 2016:
 - 92 Nova 60-ft Articulated Clean Diesel Buses – Deliveries commenced in December 2017 and are scheduled to be completed in June 2018.
 - 139 New Flyer 60-ft Articulated Clean Diesel Buses – Deliveries were completed in December 2017.
 - 138 New Flyer 40-ft CNG Buses – Deliveries were completed in November 2017.



Schedule Review Cont'd

- New and Pending Contracts Since January 2017:
 - 110 New Flyer 60-ft CNG Articulated Buses - On schedule. Production deliveries are scheduled to begin in April 2018.
 - 377 New Flyer 40-ft std. Clean Diesel Buses – On schedule. Production deliveries are scheduled to begin in the 2nd quarter 2018.
 - 251 Nova 40-ft std. Clean Diesel Buses - On schedule. Delivery of the pilot bus is scheduled for April 2018.



Budget Review

- Deliveries Completed in 2017:
 - Projects on budget with no significant issues.
- Current Procurements:
 - Projects on budget with no significant issues.



Observations

- The IEC notes that the bus procurement program appears to be well managed.
- The IEC commends NYCT progress in implementing important new safety and technological initiatives that were introduced at the January 2017 CPOC. The new initiatives will improve passenger safety, reduce emissions, introduce new generation hybrid and electric buses, and implement new technologies.



NYCT Subway Car Program

Capital Program Oversight Committee

John Santamaria, P.E.

Acting Vice President & Chief Mechanical Officer,
Department of Subways



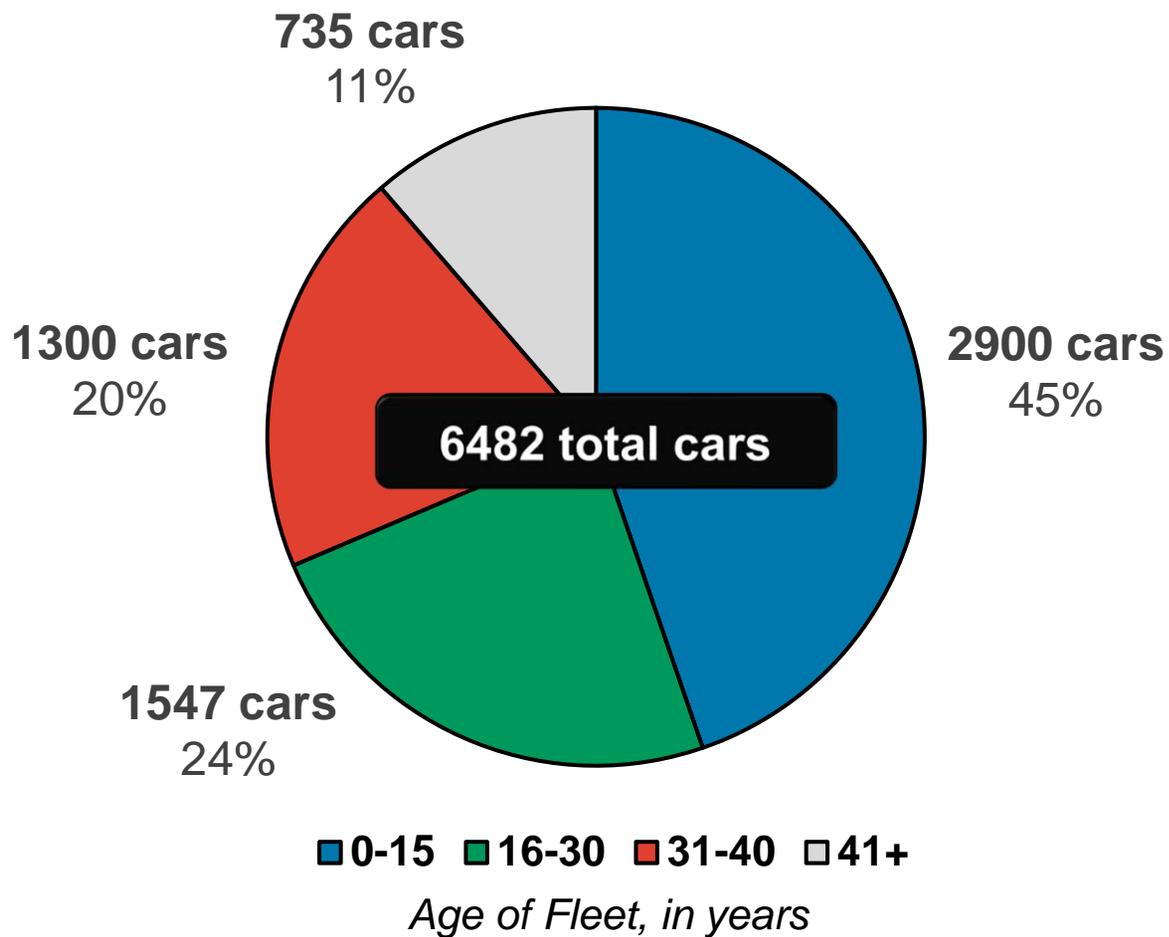
January 2018

Ongoing Projects

- **R211** Project Update (Up to 1,612 Cars)
- **R179** Project Update (300 Cars)



NYCT Subway Car Fleet Age Overview



R211 New B-Division Subway Cars



R211 | Project Overview

Project Details

Scope	<p>Purchase up to 1,612 'B' Division Subway Cars</p> <ul style="list-style-type: none">• Base Order: 20 Open-Gangway, 75 SIR, 440 NYCT Cars• Option 1: 640 Cars for NYCT; Option 2: up to 437 NYCT Cars
Schedule	<ul style="list-style-type: none">• RFP Advertised: July 22, 2016• Proposals Received: December 15, 2016• Contract Award: January 2018 (Forecasted)
Budget	<ul style="list-style-type: none">• Base Order: \$2 Billion (2015-19 CP)

Highlights

Progress	<ul style="list-style-type: none">• Commercial & Technical Negotiations - Commenced September 2017• Mock Up Open for Customer Feedback – Nov. 30 – Dec. 6, 2017• Notice of Award - January 2018 (F)
180-Day Look Ahead	<ul style="list-style-type: none">• Design Review Commences: January 2018 (F)



R211 | Base Order

R211A Cars

(NYCT 'B' Div.
Standard)

- Initial Train (10 cars) – July 2020 delivery (NOA + 30 months)
- Production Trains (440 cars) – Sept. 2021 to Aug. 2023 delivery

R211T Cars

(NYCT Open
Gangway Test Trains)

- Test Trains (20 cars) – May 2021 delivery (NOA + 40 months)

R211S Cars

(Staten Island
Railway)

- Initial Train (5 cars) – Dec. 2021 (NOA + 47 months)
- Production Trains (70 cars) – Sept. 2022 to July 2023 delivery



R211 | Contract Options

Option #1

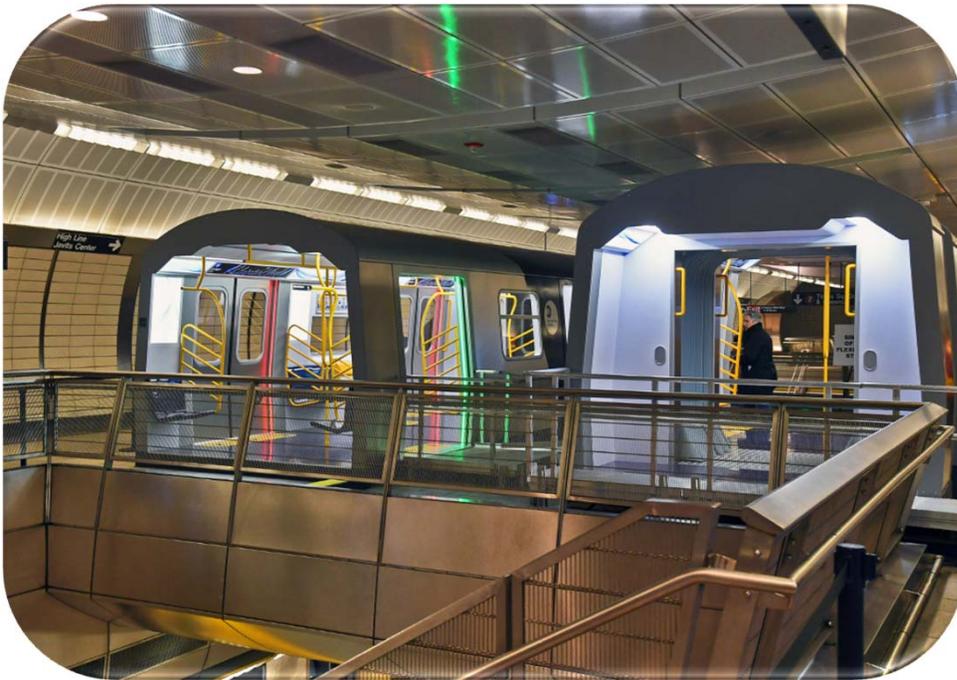
- Exercise with Open-Gangway vs Standard decision by 4th Quarter 2022
- 640 Cars: Sept. 2023 to Dec. 2024 delivery
- 40 cars/month delivery rate

Option #2

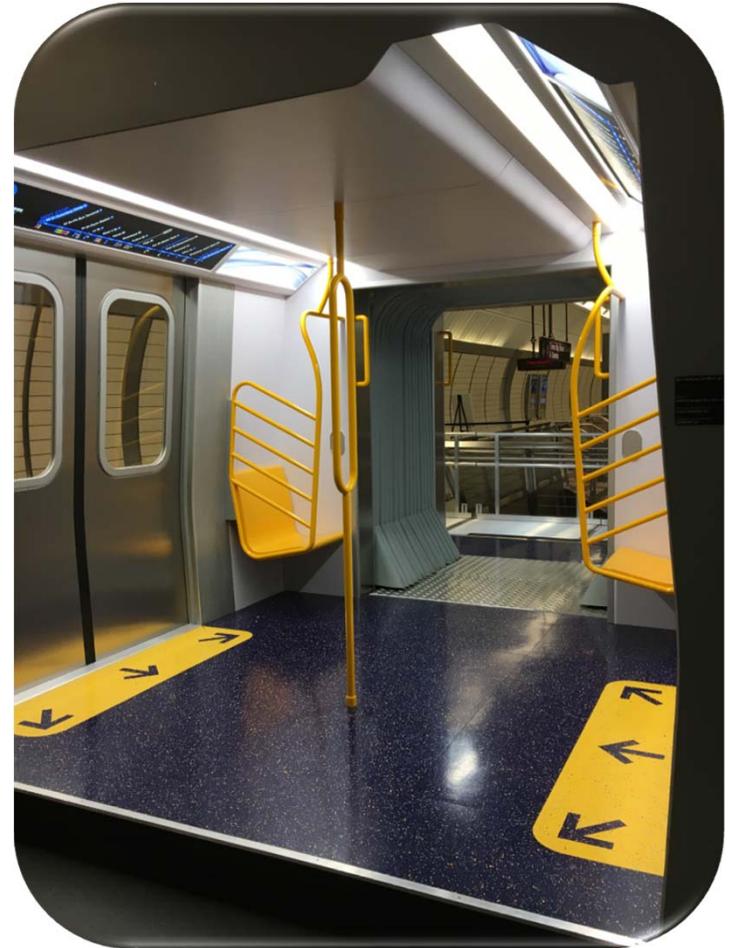
- Up to 437 Cars
- Jan. 2025 to Oct. 2025 delivery
- 40 car/month delivery rate



R211 | Mock-Ups



Two mock-ups at 34 St-Hudson Yards



Interior with open gangway



R211 | Mock-Ups



Flexible customer information signs



Door indication lights



R211 | Mock-Ups



Open gangway



Flip-up seats and ADA area



R179 | Project Overview

Project Details

Carbuilder	Bombardier Transportation Corp.
Scope	300 60-foot 'B' Division Cars (36 ½ trains)
Budget	\$740.6 million
Schedule	<ul style="list-style-type: none">• Award: June 4, 2012• Test Train Delivered: November 2016• Production Car Delivery Begins: January 2018• 300th Production Car Delivery Completion (Forecast): January 2019, a 24 month delay from the original schedule

Highlights

Progress	<ul style="list-style-type: none">• 34 total cars (8 Operating Units) delivered for coordinated testing• Electromagnetic interference (EMI) testing complete• 30-Day passenger service test complete
180 Day Look Ahead	<ul style="list-style-type: none">• Continue Production Car Delivery and Acceptance



R179 | Testing Status

1

Electromagnetic Interference (EMI) Tests

- New test track configured on Brighton Line using in-house forces
- Testing successfully completed as of December 18, 2017

2

Propulsion & Braking Tests

- 8-car tests successfully completed October 2017
- 10-car testing scheduled for 1st Quarter 2018

3

30-Day In-Service Test

- Initially began on November 19, 2017
- Door indication light issue corrected
- Successfully completed on December 27, 2017



R179 | In-Service Testing



R179 train operating on Jamaica Line (JZ)



R179 interior

January 2018 CPOC IEC Project Review

Subway Car Procurements

January 22, 2018



R188 Project Summary

- Schedule:
 - Substantial Completion was achieved in June 2016.
 - NYCT and the carbuilder are addressing Field Modification (FMIs), ~ 90% complete.
- Budget:
 - Project is within budget with an EAC of \$613.6M.
- Warranty:
 - 153 of 506 cars are still under warranty. The warranty on the remaining cars will be phased out by July 2018.
- Reliability:
 - The MDBF for the combined fleet is 217,239 miles for Sept 2017 and exceeds the contractual requirement of 150,000 miles. The MDBF for the new R188 series cars is 443,704 miles for Sept 2017.



R179 Schedule Review

- Schedule:
 - The IEC concurs with NYCT's forecasted schedule delay and production car delivery completion date.
 - The In-Service Reliability Test, a major contract milestone, was successfully completed on December 27, 2017.
 - Production car deliveries began in January 2018 and will continue through January 2019.



R179 Budget Review

- Budget:
 - The IEC concurs with the project budget and contingency status presented by NYCT.



R179 Observations

- Observations:
 - The carbuilder has achieved a production rate of 1 car every 2 days and is attempting to reach a production rate of 1 car per day in February 2018.
 - The carbuilder will need to achieve the 1 car per day production rate in February to hold the January 2019 delivery completion date.



R211 Observations

- Observations:
 - The schedule for the R211 3-phase procurement program is aggressive by industry standards, but achievable.
 - Additional NYCT engineering, inspection and testing resources may be required for the multi-phase procurement as design reviews, testing and production will overlap.



New York City Transit Sandy Recovery & Resiliency Division

Capital Program Oversight Committee

CPM

Branko Kleva, P.E.

Program Executive

January 2018



NYCT Sandy Recovery & Resiliency Program

Agenda

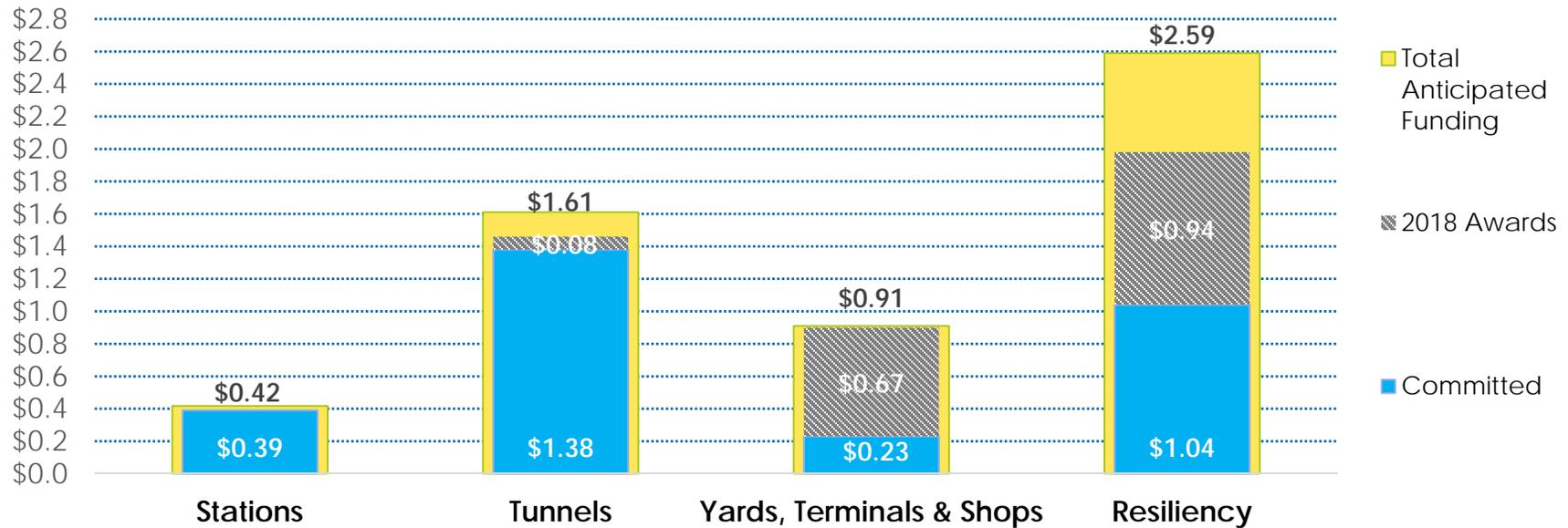
- Program Overview

- Project Update
 - Canarsie Tunnel / Myrtle Viaduct and Bridge
 - Clark Street
 - Clifton Shop



NYCT Sandy Recovery & Resiliency Program Overview

Performance (\$ billion)



Awarded to Date:

\$3.03

Remaining to be Awarded:

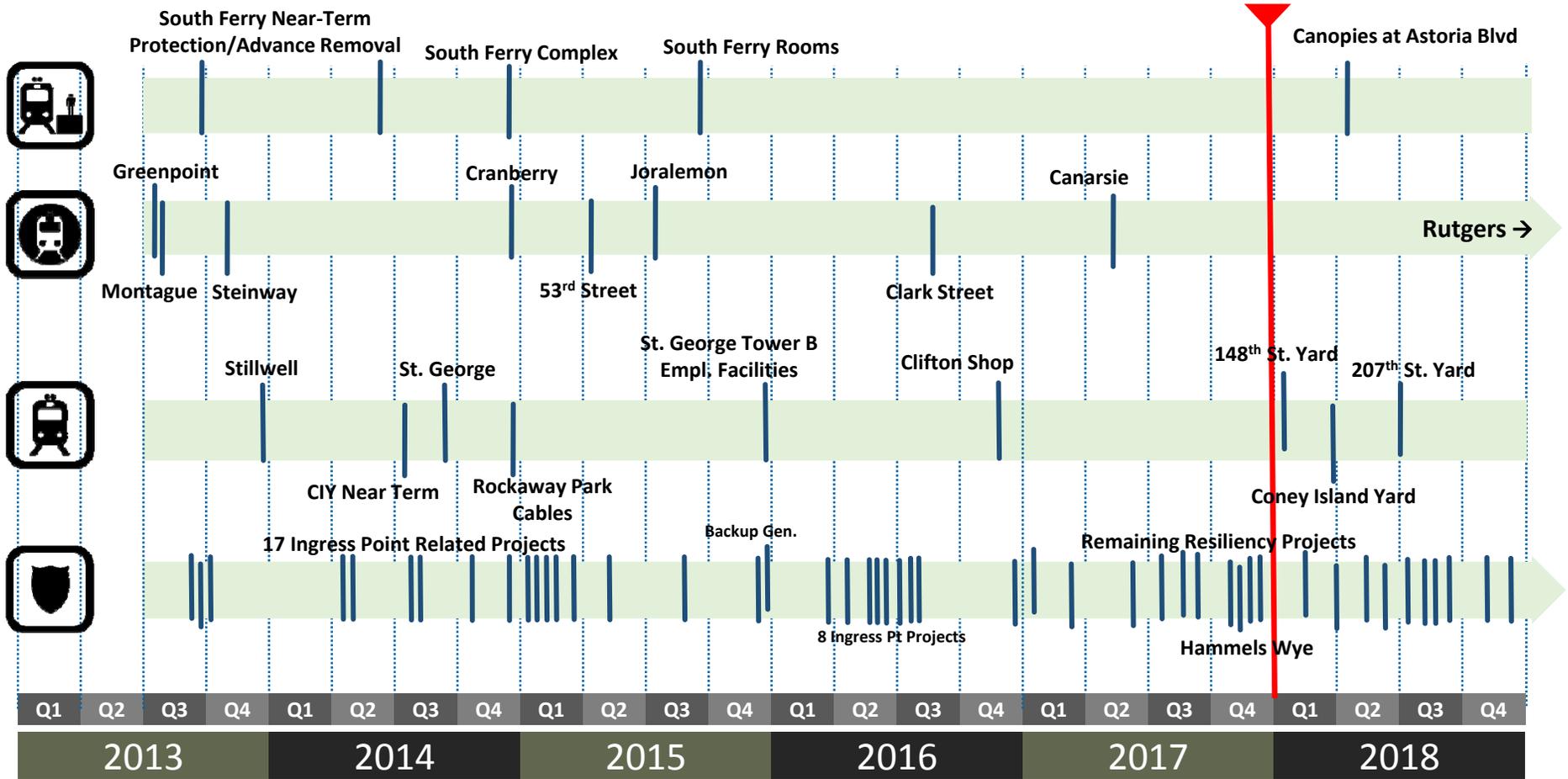
\$2.49

Total

\$5.52



Timeline of Construction Awards



- Awarded to Date: 63 Projects
- Remaining to be Awarded: 21+ Projects



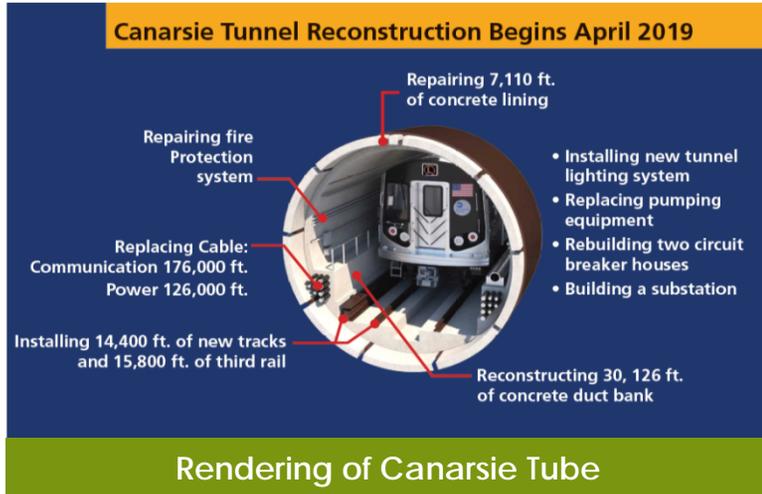
Canarsie Tunnel Rehabilitation

- ❑ Awarded: April 2017
- ❑ Contractor: Judlau – TC Electric JV
- ❑ Project Description:
 - Demolish and reconstruct duct banks and track
 - Replace all lighting, communications, signals and power cables
 - Construct new substation and circuit breaker house
 - Install new ADA elevators and station stairs
 - Refurbish existing pump room and circuit breaker house



Canarsie Tunnel Rehabilitation

Overall Status



Item	Comments
Schedule	<ul style="list-style-type: none"> Project is on schedule Substantial Completion forecast is November 2020 Tunnel shutdown: 15 Months April 2019 – July 2020 Contract Duration: 43 Months
Cost	<ul style="list-style-type: none"> Within Budget of \$914M (Includes contingency and risk reserves)



Canarsie Tunnel Rehabilitation

Highlights

<p>Progress</p>	<ul style="list-style-type: none"> • Surveys of track, signals, communications, lighting, relay rooms, EDRs, pump rooms, fan plants, manholes and drains • Completed 3D tunnel laser scan, pre-construction surveys and installed noise and geotechnical monitors • Relocated gas and electric lines, reconstructed manholes • Replaced 20" water main on E 14th St • Relocated Service Road slip ramps on E 14th St • Constructed positive duct bank on Bedford Ave between N 6th St Substation and N 7th St • Started excavation for new substation at Avenue B • Started excavation for new stairs at Bedford Ave Station in Brooklyn
<p>180 Day Look Ahead</p>	<ul style="list-style-type: none"> • Present alternate service plan to the community • Continue excavations in Manhattan and Brooklyn



Canarsie Tunnel Progress



Sheet Pile Driving in Progress



Canarsie Tunnel Progress



Construction Barricades



Canarsie Tunnel Rehabilitation

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
● Green	Dust Collection Mock Up Approval	January 2018	Dust Collector Mockup successfully completed on 1-11-18
● Green	Approvals, delivery and storage of all materials and equipment	September 2018	None
● Green	All signal work required for tunnel shutdown incl. Bedford Ave Dispatch office	December 2018	None
● Green	Hi-rail equipment approved and ready for delivery	December 2018	None
● Green	Procurement of specialized equipment required for tunnel work	December 2018	None
● Green	Temporary cabling for vent plants, pump room and CBTC systems for the tunnel shutdown	February 2019	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.		



Canarsie Tunnel Rehabilitation

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
● Green	First Avenue Station north and south debris removal shafts	April 2019	None
● Green	Tunnel Shutdown	April 2019	None
● Green	Avenue B substation and CBH-61 ready for power	April 2020	None
● Green	CBH 62 ready for power	April 2020	None
● Green	All Bedford Avenue Station work complete	July 2020	None
● Green	All First Avenue North and South Station work complete	July 2020	None
● Green	Tunnel Reopening	July 2020	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.



Myrtle Line Viaduct and Bridge

- ❑ Awarded: December 2016
- ❑ Contractor: Schiavone Construction Co. LLC
- ❑ Project Description:
 - Replace 100-year-old viaduct (Bushwick Cut) and bridge on the M-Line
 - Construct a car inspection and maintenance enclosure at Fresh Pond Yard



Myrtle Line Viaduct and Bridge

Overall Status



Pile Rigs

Item	Comments
Schedule	<ul style="list-style-type: none"> • Project is on schedule • Substantial Completion forecast is December 2018 • Contract Duration: 24 Months • 10 month closure – Started July 1, 2017 as scheduled • M Line will reopen on April 2018 a year before Canarsie shutdown begins
Cost	<ul style="list-style-type: none"> • Within Budget of \$163M



Myrtle Line Viaduct and Bridge

Highlights

<p>Progress</p>	<p>Project overall completion 69.0% as of December 31, 2017:</p> <ul style="list-style-type: none"> • Phase I – Completed on schedule August 31, 2017 <ul style="list-style-type: none"> • Fresh Pond Yard Rail Car Inspection enclosure was constructed and placed in service • Replacement of Bridge over NY & AR was completed and placed in service on August 31, 2017 • Phase II – Started as planned on September 1, 2017 <ul style="list-style-type: none"> • M Shuttle Train Service • All 122 piles have been installed at Viaduct • Demolition of Viaduct complete • Concrete pile caps and pedestals for Viaduct complete
<p>180 Day Look Ahead</p>	<ul style="list-style-type: none"> • Installation of structural steel and precast panels for Viaduct • Installation and testing of tracks and signal equipment



Myrtle Line Viaduct and Bridge Progress



New NYAR Bridge and Tracks



Myrtle Line Viaduct and Bridge Progress



New Pile Caps and Footings for New Viaduct



Myrtle Viaduct and Bridge

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
● Green	Erect Structural Steel and Precast Panels	February 2018	None
● Green	Track Work	March 2018	None
● Green	Place Viaduct in Service	April 2018	None
● Green	Substantial Completion	December 2018	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.



Clark Street Tube

- ❑ Awarded: September 2016

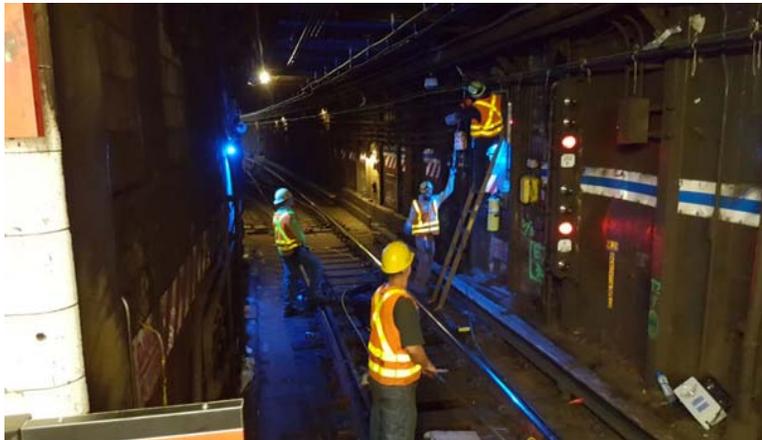
- ❑ Contractor: TC Electric, LLC

- ❑ Project Description:
 - Replace communication and traction power cables
 - Replace emergency alarm and sound-powered telephone system
 - Reconstruct track and replace rail tie blocks
 - Repair cracks, active leaks and spalls concrete
 - Rehabilitate four pump rooms including one in the tube
 - Furnish and install signal cables and equipment
 - Refurbish fire stand pipe and heat trace systems



Clark Street Tube

Overall Status



Antenna Cable Installation



Fiber Optic Cable Installation

Item	Comments
Schedule	<ul style="list-style-type: none">• Project is on schedule• Substantial Completion forecast is January 2019.• Contract Duration: 28 Months
Cost	<ul style="list-style-type: none">• Within Budget of \$115.3M

Clark Street Tube

Highlights

Progress	<ul style="list-style-type: none">• 40 % complete as of December 31, 2017• Tunnel work progressing with consecutive weekend service diversions scheduled through June 2018• Installation of various cabling ongoing• Tunnel ducts cleared, repaired and ready for new cables to be pulled• Refurbishment of two pump rooms in progress• Refurbished 300 linear feet of track
180 Day Look Ahead	<ul style="list-style-type: none">• Refurbish 2 remaining pump rooms• Complete track and cable work



Clark Street Tube

Critical Items and Issues

Status	Activity	Date Needed	Issues
 Green	Track Refurbishment	Feb 2018	Replace damaged tie blocks
 Yellow	Pump Room Rehabilitation	May 2018	(2) Pump rooms taken over by Contractor with work underway and (2) remaining to be taken over. Contractor needs to stay on schedule and construction manager needs to coordinate with user departments.
 Green	Traction Power Cables	May 2018	No Issue.
 Green	Heat Trace Systems	May 2018	No Issue.
 Green	Fire Line System	May 2018	No Issue.

	Red	Significant impacts with potential impacts on Revenue Service Date, or project cost.
	Yellow	Impacts which can lead to cost increases or schedule delays.
	Green	No Near Term Impact for Construction. Successful management of major activity to stay on schedule or budget.



Clifton Shop (Design/Build)

- ❑ Awarded: December 2016

- ❑ Contractor: Prismatic Development Corp.

- ❑ Project Description:
 - Reconstruct the Sandy-damaged Clifton Maintenance Shop to be resilient to Category 2 hurricane.
 - Project includes demolition of existing shop facilities and construction of new shop with offices and support buildings and all associated work.
 - Phased construction to maintain existing facility in-service



Clifton Shop (Design/Build)

Overall Status



Damaged Existing Facility

Item	Comments
Schedule	<ul style="list-style-type: none"> Project is on schedule Substantial Completion forecast is July 2020. Contract Duration: 43 Months
Cost	<ul style="list-style-type: none"> Within Budget of \$203M

Clifton Shop (Design/Build)

Highlights

<p>Progress</p>	<ul style="list-style-type: none"> • Design Package 1 (Maintenance and Protection of Traffic and Demolition), Design Package 2 (Piles, Foundations) and Package 4 (Core and Shell) are 100% Complete. – Demolition of yard tracks stated. • Design Packages 3 and 5 (Structural Steel and MEP) were reviewed and comments returned and final document due by February 2018. • Design Package 6 for Interior Finishes, Equipment and Landscaping is scheduled to be submitted in February 2018. • Design Development Schedule & Preliminary Baseline Schedule were accepted. Final Baseline Schedule was due 12/29/17, new submission date 1/5/2018
<p>180 Day Look Ahead</p>	<ul style="list-style-type: none"> • Pile load test program and production piles. • Complete final design packages for 3 and 5 . Submit Design Package 6. • Remove underground storage tanks • Cut and cap gas, sewer and water lines and install temporary utilities • Complete demolition of Paint and Diesel Shops



Clifton Shop (Design Build)

Critical Milestones and Issues

Status	Activity	Date Needed	Issues
● Green	Initial Removals, Relocation, Staging	November 2017	None
● Green	Start Production Piles	April 2018	None
● Green	Complete Foundations	October 2018	None
● Green	Complete Superstructure	January 2019	None
● Green	Complete Clifton Shop	January 2020	None
● Green	Demolition of Store Room, MUE Shop, Remaining Structures	April 2020	Will start once new Clifton Shop is beneficially occupied
● Green	Final Site Work and Finishes	July 2020	None
● Green	Substantial Completion	July 2020	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.



January 2018 CPOC IEC Project Review

Canarsie Tunnel Rehabilitation

January 22, 2018



Budget Review

- Budget

- The current project budget is \$914M.
- The IEC concurs that the project is currently on budget.



Schedule Review

□ Schedule Review

- The IEC concurs, the project is currently on schedule.

□ Milestones

- Dust Collection Mock up approval on target for January 2018.
- 7 GO's are scheduled for 2018.
- All signal work required for tunnel shutdown to be completed by December 2018.
- Tunnel Shutdown April 2019.



IEC Observations

- The IEC is tracking the construction of two new substations at Maspeth and Harrison Place that will provide additional power requirements. Both these projects have been awarded and are currently tracking on schedule.



January 2018 CPOC IEC Project Review

NYCT Viaduct and Bridge Replacement on
the Myrtle Avenue Line (BMT)

January 22, 2018



Schedule and Budget Review

□ Schedule

- The overall project is on schedule.
 - The car inspection facility (CIF) achieved beneficial use on schedule in 8 months.
 - The NY & Atlantic RR bridge was replaced on schedule.
 - Shuttle train operation began on schedule.
 - The viaduct replacement is on schedule.
 - The closed section of the M line is on schedule to reopen by April 2018.

□ Budget

- The project is within budget.
- A change order was issued to provide permanent power to the CIF.



Risk Management

- At this stage of the project, many of the risks identified as potential issues have not been realized or their probability of occurring has been greatly reduced.
- Top Remaining Risks
 - Availability of Long-Lead Items (Steel viaduct framing).
 - Damage to existing facilities or new fabricated components.



January 2018 CPOC IEC Project Review

Clifton Shop

January 22, 2018



Budget and Schedule Review

■ Budget

- The current project budget is \$203M
- There has been no change to the project budget since last report.

■ Schedule

- Notice to Proceed was issued on December 30, 2016.
- The contract duration is 43 months with a substantial completion date of July 2020.
- The design-build team has submitted their baseline schedule.
 - The schedule has not been updated to reflect actual progress to date.



Risks to Project Schedule

■ Delay in Design Completion

- The design-build team is submitting their design in 6 packages.
- Acceptance of the design packages has not met the schedule milestones.
- The impact of design delays to the construction schedule has not been determined at this time.

■ Delay to Demolition

- Delay in removing the existing Diesel and Paint Shops may impact the construction of the new shop.



MTA Capital Program Commitments & Completions

through December 31, 2017

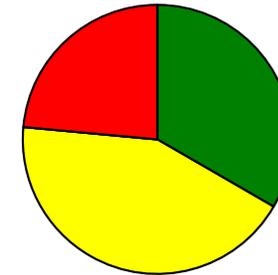
Capital Projects – Major Commitments – December 2017

In 2017, agencies planned for a goal of \$7.3 billion in overall commitments with 51 major commitments.

Through December, agencies achieved \$7.3 billion of the \$7.3 billion goal. Seventeen major commitments were made on time or early, twenty-two were delayed, but have now been committed and twelve other major commitments remain delayed. Commitment highlights include the awards of passenger train arrival systems on the B-division line, the New Fare Payment System, 110 M-9 commuter rail cars, 618 diesel buses, Open Road Tolling, and the Second Track. The \$2 billion shortfall associated with the R211 delay has been partially offset by the encumbrance of the funds for the LIRR Expansion project. All delays are explained on the following pages.

The MTA achieved 100% of its overall \$7.3 billion commitments goal.

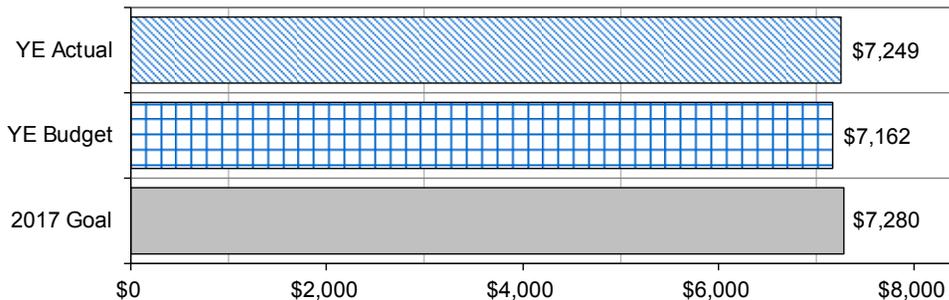
Year-to-Date Major Commitments



	Count	Percent	Change from Prior Month
GREEN = Commitments made/forecast within Goal	17	33%	-
YELLOW = Commitments delayed beyond Goal (already achieved)	22	43%	↑ 11
RED = Commitments delayed beyond Goal (not yet achieved)	12	24%	↓ 8
Total	51	100%	↑ 3

Budget Analysis

2017 Annual Goal	\$7,280	(\$ in millions)
2017 Actual	100%	of Annual Goal
Forecast left to Commit	0%	\$0



Year-to-Date Agency Breakdown

2017 Goals	Prior month variance		
	GREEN	YELLOW	RED
New York City Transit			
4 GREEN 7 YELLOW 6 RED	—	—	+2 RED
Long Island Rail Road			
2 GREEN 8 YELLOW	—	+6 YELLOW	-6 RED
Metro-North Railroad			
2 GREEN 1 YELLOW	—	+1 YELLOW	-1 RED
Bridges and Tunnels			
8 GREEN 5 YELLOW 1 RED	—	+4 YELLOW	-4 RED
Capital Construction Company			
3 RED	—	—	+1 RED
MTA Bus Company			
1 RED	—	—	—
MTA Police Department			
1 YELLOW	—	—	—

Capital Projects – Major Commitments – December 2017 – Schedule Variances

Project	Commitment	Goal	Forecast	Project	Commitment	Goal	Forecast
12 All-Agency Red Commitments (3 new this month)				MNR			
NYCT				Sandy			
<i>Signals & Communications</i>				Power and Signal Mitigation Construction Award Nov-17 Post 2017			
ISIM-B Module 3: Rail Traffic Systems	Construction Award	Aug-17 \$91.7M	Post 2017 \$91.0M			\$20.6M	\$20.6M
Project award extended pending revised specifications based on oral presentations during procurement.				Delay due to the incorporation of updated Metro-North quality management specifications during the final design phase.			
<i>Subway Cars</i>				MTA CC			
Purchase 525 R211 Cars & 10 Open Gangway	Construction Award	Jun-17 \$1534.5M	Post 2017 \$1998.5M	<i>East Side Access</i>			
Award of the contract is moved to January because proposals are still under review. Project cost reflects the capital program budget revision.				48th Street Entrance Construction Award Jun-17 Post 2017			
				\$36.0M \$36.0M			
				This station entrance package is currently under review by the East Side Access team and was not expected to be committed in 2017. A more specific forecast date is to be determined.			
<i>Passenger Stations</i>				Systems Package 2 : Installation of Signals Construction Award Jun-17 Post 2017			
Access Improvements: Grand Central: Phase 2	Construction Award	Jul-17 \$66.7M	Post 2017 \$57.1M	\$44.9M \$44.9M			
Procurement will be progressed through multiple phases reflecting the various activities in the project. The last expected awarded will be in 2019.				Additional time required for extended review process.			
<i>Sandy</i>				<i>Penn Station Access</i>			
Sandy Mitigation: Upgrade Emergency Booth Comm System	Construction Award	Nov-17 \$67.1M	Post 2017 \$71.1M	GEC Design (New Item) Construction Award Dec-17 Post 2017			
Project award extended to March 2018 due to protracted RFP procurement process. Project cost increased reflecting latest estimates.				\$37.0M \$37.0M			
				Delay due to change in procurement strategy. Preparing to advertise contract shortly.			
<i>Service Vehicle</i>				MTA Bus Company			
Purchase Locomotives (New Item)	Purchase Award	Dec-17 \$128.3M	Post 2017 \$128.3M	Security: JFK & Spring Creek Construction Award Sep-17 Post 2017			
Delay due to changes to the technical specifications in order to comply with New York State Department of Labor requirements regarding workers' exposure to diesel exhaust emissions. Technical specifications have been finalized and NYCT will advertise in 2018.				\$9.2M \$8.5M			
				Slipped now due to Award processing that is taking longer than anticipated.			
<i>Misc.</i>				B&T			
Livingston Plaza Electrical and Mechanical System Improvements (New Item)	Construction Award	Dec-17 \$62.7M	Post 2017 \$63.2M	Electrical/Mechanical Rehab of HR Lift Span Construction Award Nov-17 Post 2017			
The HVAC project was intended to start after the completion of an earlier contract to repair the Livingston façade. However, the façade contractor has been removed from the project due to performance issues and NYCT is now in the process of identifying a replacement contractor. Until a new contractor is selected and awarded, the scaffolding cannot be removed and the HVAC project cannot start.				\$17.0M \$29.4M			
				Design/Build teams requested additional time to review RFP documents.			

Capital Projects – Major Commitments – December 2017 – Schedule Variances

Project	Commitment	Goal	Actual
22 All-Agency Yellow Commitments (11 new this month)			
NYCT			
<i>Line Structures</i>			
Structural Repairs / 4th Ave	Construction Award	Feb- 17 \$84.4M	May- 17 (A) \$87.2M
The project award was delayed due to a higher than expected bid.			
<i>Track</i>			
Mainline Track & Switch Program (18 Projects) - 1st Qtr	Construction Award	Mar- 17 \$217.8M	May- 17 (A) \$218.7M
The 2017 Yard Track & Switch projects were delayed due to attention to other track work priorities and inclement weather.			
Mainline Track & Switch Program (6 Projects) - 3rd Qtr	Construction Award	Aug- 17 \$37.9M	Oct-2017 (A) \$37.9M
Construction start delayed due to track access availability and the usage of manpower to complete prioritized track work in preparation for the Canarsie Tube closure.			
<i>Signals & Communications</i>			
B- Division Beacon Train Arrival System, Phase 2	Construction Award	Feb- 17 \$70.0M	Aug- 17 (A) \$69.1M
Project was delayed due to funding allocation approval which has been resolved.			
<i>Traction Power</i>			
New Substation & 2 CBHs - Maspeth Av- Humboldt St / CNR	Construction Award	Apr- 17 \$76.7M	Aug- 17 (A) \$59.5M
There was a delayed in advertisement. Bids were received in May and the contract was awarded in August. Project cost reflects favorable bids.			
New Substation: Harrison Pl/ Canarsie	Construction Award	Jul- 17 \$63.4M	Aug- 17 (A) \$52.2M
This Design- Build project needed approval by the Board before award. Procurement action was approved by the July Board and the contract was awarded in August. Project cost reflects negotiated bid price.			
<i>Fare Media</i>			
New Fare Payment System	Construction Award	Jun- 17 \$525.9M	Oct-2017 (A) \$615.5M
Procurement action approved by the MTA Board in October. The award schedule was delayed due to scope addition to incorporating a full NFPS treatment for the Long Island Rail Road and Metro- North Railroad. The cost increased due to the higher than budget bid.			

Project	Commitment	Goal	Actual
LIRR			
<i>Track</i>			
2017 Track Program	Construction Award	Feb- 17 \$75.0M	Mar- 17 (A) \$75.0M
Full administrative reviews and approvals had not been concluded by the end of February and full commitment was delayed until March.			
Main Line Double Track Phase 2- Track & Systems	Construction Award	Apr- 17 \$52.0M	Jun- 17 (A) \$52.0M
Bid opening delayed due to time extension requests from prospective contractors to secure pricing from their subcontractors. This contract was awarded in June.			
<i>Communications and Signals</i>			
Positive Train Control (New Item)	Force Account	Feb- 17 \$49.1M	Dec- 17 (A) \$67.5M
The cabling award was made in December 2017. Other force account commitments of \$49 million were made in February 2017. The award value reflects the inclusion of the cabling.			
<i>Stations</i>			
Murray Hill Station Elevators (New Item)	Construction Award	May- 17 \$12.6M	Dec- 17 (A) \$9.0M
Reflects the delay in the time frame for legal to complete their review of contractual documents.			
<i>Shops & Yards</i>			
Diesel Locomotive Shop (New Item)	Construction Award	Sep- 17 \$97.9M	Dec- 17 (A) \$94.4M
Delay in RFP process. Vendor was selected and went before October Board for approval. Awarded in December.			
New Mid- Suffolk Electric Yard (New Item)	Construction Award	Sep- 17 \$111.7M	Dec- 17 (A) \$113.0M
RFP due date was delayed to late September. Technical group was evaluating proposals.			
<i>Track</i>			
JCI Phase II Design (New Item)	Design Award	Sep- 17 \$28.0M	Dec- 17 (A) \$33.4M
Delay in vendor negotiations due to completion of MTA Audit. Negotiations scheduled and awarded December 2017.			
<i>Rolling Stock</i>			
M- 9 Procurement (New Item)	Construction Award	Oct- 17 \$199.7M	Dec- 17 (A) \$276.0M
Delay due to negotiations with the vendor taking longer than expected.			

Capital Projects – Major Commitments – December 2017 – Schedule Variances

Project	Commitment	Goal	Forecast
MNR			
GCT PA Head End and VIS Systems (New Item)	Construction Award	Jul- 17 \$32.6M	Dec- 17 (A) \$57.0M
Due to a protracted procurement the Design/Build award was delayed until December 2017.			
MTA PD			
Nassau County District Office	Construction Award	Feb- 17 \$7.0M	Mar- 17 (A) \$7.0M
A lease was signed with the property owner in February. Administrative reviews and procedures to award the project delayed the forecast award to March.			
B&T			
<i>Structures</i>			
Henry Hudson Skewback Retrofit	Construction Award	Apr- 17 \$83.7M	May- 17 (A) \$85.7M
Delay due to contract and Insurance issues which took longer than anticipated to resolve.			
<i>Miscellaneous</i>			
Install Electronic Monitoring & Detection Systems (Bronx Whitestone) (New Item)	Construction Award	Jul- 17 \$23.0M	Dec- 17 (A) \$29.9M
Additional time was required to respond to questions from interested Design/Build teams and modify the scope.			
Install Electronic Monitoring & Detection Systems (Robert F. Kennedy) (New Item)	Construction Award	Jul- 17 \$34.3M	Dec- 17 (A) \$45.5M
Additional time was required to respond to questions from interested Design/Build teams and modify the scope.			
<i>Structures</i>			
Interim Repairs - FDR Ramp (New Item)	Construction Award	Sep- 17 \$20.0M	Dec- 17 (A) \$13.5M
The design package took longer than anticipated which pushed the construction forecast start date out by two months.			
Main Cable & Suspender Rope Testing - Ph. 1 (New Item)	Construction Award	Nov- 17 \$33.7M	Dec- 17 (A) \$18.1M
Commitment delayed due to the review of the contract's advertisement.			

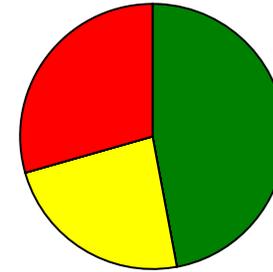
Capital Projects – Major Completions – December 2017

In 2017, agencies planned for a goal of \$5.0 billion in overall completions with 34 major completions.

Through December, agencies completed \$3.9 billion of the \$5.0 billion goal. Sixteen major completions were achieved on time or early. Eight major completion were delayed, but have now been completed, and ten major completions remain delayed. Completion highlights include repair of three subway tubes damaged from Superstorm Sandy, restoration of the South Ferry station due to Sandy damage, delivery of 138 CNG buses, and new signals on the Dyre Ave line. The over \$1 billion shortfall was mostly due to the delay of Sandy and East Side Access projects as well as the delay of CBTC Flushing completion. All delays are explained on the following pages.

The MTA achieved 79% of its overall \$5.0 billion completions goal.

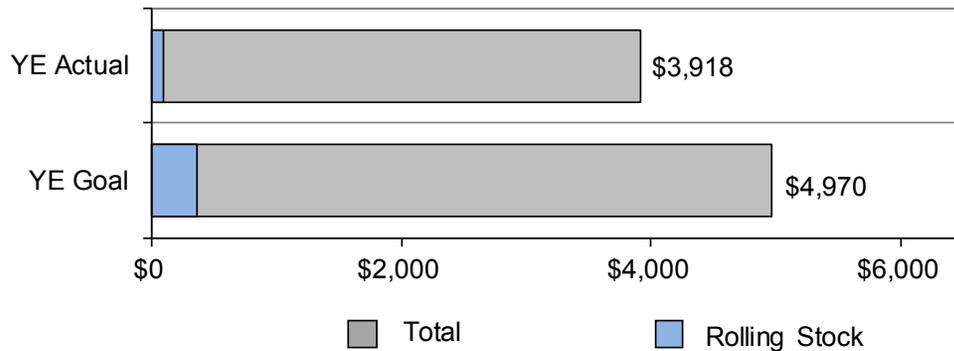
Year-to-Date Major Completions



	Count	Percent	Change from Prior Month
GREEN = Completions made/forecast w ithin Goal	16	47%	↑ 2
YELLOW = Completions delayed beyond Goal (already achieved)	8	24%	↑ 2
RED = Completions delayed beyond Goal (not yet achieved)	10	29%	↑ 1
Total	34	100%	↑ 5

Budget Analysis

2017 Annual Goal \$4,970 (\$ in millions)
 2017 Actual 79% of Annual Goal
 Forecast left to Complete 0% (\$0)



Year-to-Date Agency Breakdown

2017 Goals	Prior month variance		
	GREEN	YELLOW	RED
New York City Transit			
5 GREEN 5 YELLOW 4 RED	---	+2 YELLOW	-1 RED
Long Island Rail Road			
4 GREEN 2 YELLOW 1 RED	+2 GREEN	---	---
Metro-North Railroad			
1 GREEN 2 RED	---	---	---
Bridges and Tunnels			
6 GREEN 1 RED	---	---	+1 RED
Capital Construction Company			
1 GREEN 1 RED	---	---	---
MTA Bus Company			
1 RED	---	---	+1 RED
MTA Police Department			
	---	---	---

Capital Projects – Major Completions – December 2017 – Schedule Variances

Project	Completion	Goal	Forecast
10 All-Agency Red Completions (3 new this month)			
NYCT			
<i>Subway Cars</i>			
Accept 62 R179 Rail Cars (New Item)	Fleet Purchase	Dec- 17	Post 2017
		\$162.8M	\$162.8M
Acceptance of cars delayed due to delay in starting the 30- day test. Delivery of the 300th car is still slated for December 2018.			
<i>Bus Replacement</i>			
Purchase 139 Articulated Buses	Fleet Purchase	Nov- 17	Post 2017
		\$120.3M	\$120.2M
Delay due to timing of delivery. All but 8 buses were delivered and accepted. The remaining buses are forecast to be accepted in December.			
<i>Depots</i>			
Bus Command Center Construction	Construction	Nov- 17	Post 2017
		\$51.4M	\$51.4M
Delay due to construction issues with an elevator and glass curtain wall.			
<i>Signals</i>			
CBTC Flushing Line	Construction	Nov- 17	Post 2017
		\$505.2M	\$563.6M
Project delayed until 2nd Qtr 2018 due to recently identified hardware and software issues. Mitigation efforts underway to resolve these issues. The higher forecast reflects additional budget added to the project for force account needs in the capital plan's July 2017 amendment.			
MNR			
<i>Sandy</i>			
Power Infrastructure Restoration - Substations	Construction	Aug- 17	Post 2017
		\$43.8M	\$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>Power</i>			
Substation Bridge 23 - Construction	Construction	Oct- 17	Post 2017
		\$41.7M	\$41.7M
In order to mitigate risks associated with the final cutover of substation, unforeseen operational issues were identified which required elements of the work to be altered. The forecasted completion is now October 2018.			

Project	Completion	Goal	Forecast
LIRR			
<i>Track</i>			
Massapequa Pocket Track	Construction	Nov- 17	Post 2017
		\$19.6M	\$19.6M
The completion date has been pushed back to accommodate Con Edison's utility cut-over schedule.			
MTA CC			
<i>East Side Access</i>			
Manhattan Northern Structures	Construction	Jun- 17	Post 2017
		\$361.6M	\$361.6M
Delay is due to slower than expected completion of contract work and administrative requirements.			
BUS COMPANY			
<i>Bus Company Projects</i>			
Bus Command Center - MTA Bus (New Item)	Construction	Dec- 17	Post 2017
		\$17.1M	\$17.1M
Delay due to construction issues with an elevator and glass curtain wall.			
B&T			
MPB / CBB Master Plan & Resiliency Needs (New Item)	Construction	Dec- 17	Post 2017
		\$10.0M	\$10.0M
Additional time required for structural data collection and traffic analysis.			

Capital Projects – Major Completions – December 2017 – Schedule Variances

Project	Completion	Goal	Actual
8 All-Agency Yellow Completions (2 new this month)			
NYCT			
<i>Sandy</i>			
Sandy: Cranberry Tube	Construction	May- 17 \$101.9M	Aug- 17 (A) \$102.9M
Delay due to issues encountered during signal testing which resulted in additional signal cut over work required.			
Sandy: 53rd St Tube	Construction	Apr- 17 \$92.6M	Nov- 17 (A) \$92.6M
Delay due to the the removal of the underperforming subcontractor. In addition, ConEd's inspection schedule took longer than expected.			
Sandy: Joralemon Tube (New Item)	Construction	Jun- 17 \$113.8M	Dec- 17 (A) \$121.3M
Completion delayed due to lack of available weeknight GOs. Remaining GOs are scheduled in early December. Cost increase due to increase scope changes, extension of time, availability of GOs.			
<i>Passenger Stations</i>			
Station Renewal: 7 Stations / New Lots (New Item)	Construction	Jun- 17 \$80.7M	Dec- 17 (A) \$97.6M
Project schedule delayed due to significant increases in the quantity of platform girder repairs identified during condition survey prior to award. Project cost increased mainly due to additional work such as Canopy column repair and additional TA Labor support costs.			
<i>Bus Purchase</i>			
Purchase 138 Standard CNG Buses	Fleet Purchase	Sep- 17 \$84.9M	Nov- 17 (A) \$84.9M
All but one of the buses were delivered and accepted by October with the remaining bus delivered in November.			
MNR			
<i>Grand Central Terminal</i>			
GCT Elevator Rehab Phase 4	Construction	May- 17 \$9.6M	Jun- 17 (A) \$9.8M
The completion has been delayed one month due to design issues that were associated with the A- Car elevator rail backing installation.			

Project	Completion	Goal	Actual
LIRR			
<i>Stations</i>			
Escalator Replacement Program	Construction	Mar- 17 \$11.2M	Apr- 17 (A) \$11.2M
An escalator testing issue at Baldwin station caused the delay.			
<i>Sandy</i>			
Wreck Lead Bridge Systems Restoration	Construction	Apr- 17 \$14.9M	Sept- 17 (A) \$14.9M
Beneficial use has been delayed due to NYS Environmental Conservation requirement to use scow barges to store dredged material, which delayed the excavation work.			

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

Prior Years' Major Commitments – Quarterly Update: December 2017

The status of 2014, 2015 and 2016 major commitments delayed beyond 2016 are tracked until committed and reported to CPOC quarterly.

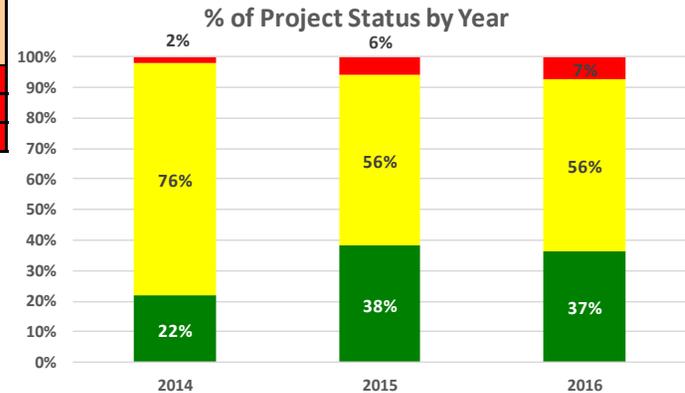
In 2014, agencies set an overall MTA commitments goal of \$6.5 billion including 55 major commitments. In 2014, \$5.8 billion was committed, including 39 major commitments. Of the remaining projects, only one remains uncommitted, NYCT's Rutgers Tube restoration, which has been rescheduled until 2022. 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 totaling \$2.9 billion were made. Of the remaining projects, two remain delayed and are forecast for award after 2017. To date, \$3.1 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 totaling \$5.0 billion were made. Fourteen major commitments are now forecast for 2017 and 2018 with eleven achieved in 2017. To date, \$6.3 billion has now been committed.

Actual		MTA-Wide Prior Years' Major Commitments													Post 2017	
Goal	Total	On Time	Achieved Late	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	
2014	55	12	41												1	1
2015	34	13	19													2
2016	41	15	12	1	1	2	3	2	1						1	3

This chart tracks when all major commitments are forecast/achieved versus original goal, starting with those that were committed within 2014, 2015 and 2016, followed by those that slipped beyond 2016. 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.



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 – December 2017– Schedule Variances
Actual Results Shaded

Project	Commitment	Goal	Forecast
6 All-Agency Red Commitments			
NYCT			
<i>Sandy</i>			
Sandy: 148th Yard Long-Term Perimeter Protection & Power Cable	Construction Award	Nov-15	Jan-18
		\$135.1M	\$88.8M
Delayed from August to January 2018 due to delay in obtaining the necessary easement agreement which prevents us from advertising the project. Negotiations with property owner, Esplanade Gardens, concluded and an agreement was reached. Project cost decreased reflecting favorable bid.			
Sandy: 207th Yard Perimeter Protection & Power Cable	Construction Award	Oct-16	Jun-18
		\$222.7M	\$758.3M
Delayed from Dec 2017 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 Signals, Track & Switches.			
Sandy Repairs: Rutgers and Cranberry Tubes	Construction Award	Jun-14	Feb-22
		\$154.0M	\$165.0M
Award of the tubes is done via separate contracts. The Cranberry tube contract awarded in December 2014 while the Rutgers tube was rescheduled to 2022 due to construction sequencing of the tubes. Project cost increased reflecting unfavorable bids received for Cranberry contract.			
Stations			
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 and limited- space constraints required multiple construction phasing to keep the street open to both vehicular and pedestrian traffic throughout construction.			

Project	Commitment	Goal	Forecast
NYCT Stations (Continued)			
<i>Work Equipment</i>			
Work Train & Special Equipment: 54 Flat Cars	Purchase Award	Dec-15	Feb-18
		\$33.5M	\$34.7M
Award was initially re- scheduled due to funding constraints. A more recent delay has been caused by the cancellation of the procurement (RFP) and the issuance of alternative strategy to expedite the procurement process going forward.			
MTA PD			
<i>Communications</i>			
Penn Station / Atlantic Tunnel Radio Upgrade	Construction Award	Dec-16	Dec-18
		\$25.0M	\$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 – December 2017– Schedule Variances
Actual Results Shaded

Project	Commitment	Goal	Actual
12 All-Agency Yellow Commitments (2 new this quarter)			
NYCT			
<i>Sandy Recovery & Mitigation</i>			
Sandy Mitigation: 7 Stations (8 Stns M/Q/Bx Initiative)	Construction Award	May-16 \$96.3M	Apr-17 (A) \$47.7M
Scope includes Internal Station Hardening. Delayed advertisement resulted in delayed bid opening. Bids received on January 25th. Bid protest was submitted but denied on 2/24. Project awarded in April and the cost reflects an favorable bid.			
Sandy Canarsie Tube Restoration & Core Capacity Improvements	Construction Award	Nov-16 \$883.3M	Apr-17 (A) \$674.6M
Project was delayed seeking Board approval for the award. Board has approved and the project was awarded in April. Project cost now reflects full funding for support costs.			
Sandy Mitigation: 9 Stations (9 Stns BK/Q Initiative)	Construction Award	Jun-16 \$100.7M	Mar-17 (A) \$52.8M
Delay in advertisement postponed the award. This was the result of additional time required for design phase drawing, spec and contract document approvals.			
<i>Stations</i>			
Renew Five Astoria Line Stations (New Item)	Construction Award	Dec-16 \$71.5M	Dec-17 (A) \$22.3M
Project cost initially increased due to additional scope including work related to severe structural deterioration. The project schedule slipped due to a delay in advertisement because four of the stations were combined into package #2 of the Enhanced Stations Initiative and will be reported in ESI program. The final station was awarded seperately from ESI Package #2 and received a good bid.			
ADA: Phase 2: 57 Street - 7 Ave / Broadway (New Item)	Construction Award	Nov-14 \$135.1M	Dec-17 (A) \$85.1M
Awarded in December after prior delays primarily caused by the need to address a budget shortfall, a need to address an alternatives study for providing ADA Access, re- design for ducts in the vicinity and a resulting change in the design scheme.			

Project	Commitment	Goal	Actual
NYCT (Continued)			
<i>Power</i>			
Power Upgrade: RCC, PCC	Construction Award	Jul-16 \$50.2M	Jan-17 (A) \$55.5M
Project awarded in January and reflects an unfavorable bid			
LIRR			
<i>Stations</i>			
Nostrand Avenue Station	Construction Award	Nov-16 \$21.0M	Jun-17 (A) \$15.7M
The project was initially delayed due to an extended design process prior to advertisement. A further delay to award resulted from coordinating the final award approval from from key stakeholders.			
MNR			
<i>Track</i>			
Rock Slope Remediation (West of Hudson)	Construction Award	Dec-16 \$15.0M	Feb-17 (A) \$10.0M
Due to a protracted procurement the construction award was delayed until February 2017. Actual commitment is lower than the forecasted due to a favorable low competitive bid for construction.			
<i>Signals & Communications</i>			
Positive Train Control	Construction Award	Dec-16 \$57.0M	May-17 (A) \$57.5M
The design of the radio communications was delayed due to radio coverage issues therefore delaying the installation construction which which was rescheduled to be awarded in March 2017. Due to an unfavorable bid the contract was re-bid; an award was executed in May 2017.			
Positive Train Control	Construction Award	Dec-16 \$45.3M	May-17 (A) \$34.8M
Due to a protracted procurement the construction award was delayed until February 2017. Actual commitment is lower than the forecasted due to a favorable low competitive bid for construction.			

Prior Year Major Commitments – December 2017– Schedule Variances

Actual Results Shaded

Project	Commitment	Goal	Forecast
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MTACC

East Side Access

Mid-Day Storage Yard - CQ033	Construction Award	Nov-16 \$266.0M	Apr-17 (A) \$302.7M
<p>Additional time required for extended review process and delay in completion of design documents. Budget updated to reflect the final bid value. This contract has an option of \$2 million which could be exercised at a later date.</p>			

B&T

Installation of Fire Standpipe and Upgrade of Fire Protection System	Construction Award	Dec-16 \$17.0M	Mar-17 (A) \$19.4M
<p>The delay was attributable to previously outstanding compliance with reporting obligations which have since been resolved. The higher award value reflects the actual bid.</p>			

Prior Years' Major Completions – Quarterly Update: December 2017

The status of 2014, 2015 and 2016 major completions delayed beyond 2016 are tracked until achieved and are reported to CPOC quarterly.

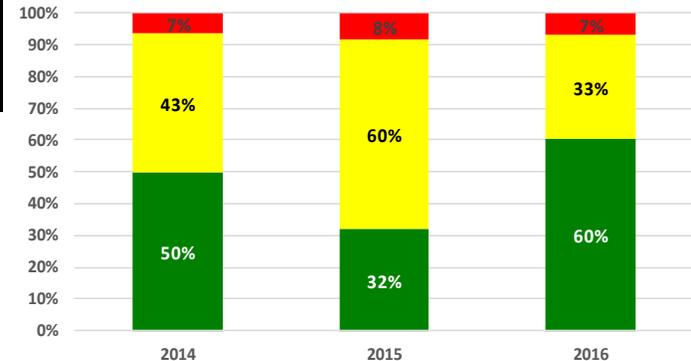
In 2014, agencies set an overall MTA completions goal of \$5.7 billion including 46 major completions. In 2014, \$4.5 billion was completed, including 28 major completions. Of the remaining projects, three are forecast for completion in 2018. To date, \$6.4 billion has been completed against the original \$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. Five more projects were completed in 2017 and two are now delayed until 2018. To date, over \$4.2 billion has been completed.

Actual Goal	MTA-Wide Prior Years' Major Completions													Post 2017			
	On Time	Achieved Late	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17		Dec-17		
Total	114																
2014	46	23	20														3
2015	25	8	15														2
2016	43	26	10	1	1		1		1						1		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 and 2016, followed by those that slipped beyond 2016. 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 – December 2017– Schedule Variances

Project	Completion	Goal	Forecast	Project	Completion	Goal	Forecast
7 All-Agency Red Completions				MTACC			
NYCT				East Side Access			
<i>Depots / Rolling Stock</i>				Plaza Substation and Structures (CQ032)			
AVLM: Paratransit - 2,273 Vehicle	Purchase	Dec-14	Sep-18	Construction Completion	Aug-16	Apr-18	
		\$35.8M	\$37.0M		\$250.2M	\$257.7M	
<p>As the software design-build commenced it was found that the current server platform was not fully adequate. MTA-IT has mandated Agency wide compliance for servers to be migrated to a new operating system. The substantial completion has to be delayed to accommodate deployment of new servers with the latest software. Prior delay of 12 months and cost increased by \$2 million both due to pre-wiring an additional 433 Paratransit vehicles.</p>				<p>Original delay due to additional Con Ed utility work at the yard services building. The more recent delay is due to final work items which are taking longer than expected.</p>			
<i>Signals and Communications</i>				GCT Councourse Finishes Early Work			
PA/CIS at 45 Stations - Install Cable	Construction Completion	Dec-15	Dec-18	Construction Completion	Apr-14	Feb-18	
		\$56.1M	\$56.1M		\$56.7M	\$58.0M	
<p>Project delayed to 2018 due to slow progress of work. In-house forces were diverted to address other safety sensitive projects.</p>				<p>Delay have been caused by SCADA (supervisory control and data acquisition) redesign work, delivery of the medium voltage switchgear, a facility control room leak, lower than expected productivity and additional time required for coordination of final Con Ed activities. Final agreement is being negotiated, after which substantial completion will be issued.</p>			
LIRR							
<i>Signals and Communications</i>							
Centralized Traffic Control	Construction Completion	Jun-15	May-18				
		\$12.9M	\$12.9M				
<p>As a result of a re-evaluation of the Theater Operations, it was determined that a re-design of the Theater is necessary.</p>							
<i>Power</i>							
F Circuit Breaker House	Construction Completion	Oct-14	Feb-18				
		\$7.2M	\$7.2M				
<p>Project on-hold pending power load study.</p>							
MNR							
<i>Grand Central Terminal</i>							
GCT Leaks Remediation	Construction Completion	Dec-16	May-18				
		\$18.6M	\$18.6M				
<p>Due to time impacts associated with additional unforeseen structural repairs to the 45th St bridge and production delays for the historic 45th St bridge panel restoration, the project completion has been rescheduled for May 2018.</p>							

Prior Year Major Completions – December 2017– Schedule Variances

Actual Results Shaded

Project	Completion	Goal	Actual
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5 All-Agency Yellow Completions (1 new this quarter)

NYCT

Stations

ADA & Station Renewal at Ozone Park- Lefferts Blvd/ LIB (New Item)	Construction Completion	Aug-16 \$23.9M	Dec-17 (A) \$27.6M
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The most recent delay was due to additional scope items added to the contract. The contractor had submitted a time extension request being reviewed by NYCT. Earlier delays were due Gutter Support Design Modification at the East End.

Replace 11 Hydraulic Elevators	Construction Completion	Aug-16 \$24.M	Feb-17 (A) \$24.1M
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Project completed in February after previous delays caused by unforeseen field conditions and issues with obtaining needed General Orders to progress work.

SIR: Station Construction Arthur Kill	Construction Completion	Aug-16 \$23.2M	Jun-17 (A) \$25.3M
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Project completed. The current delay is for the demolition of the adjacent Nassau and Atlantic Stations which will be replaced by Arthur Kill. The platforms will be removed under upcoming weekend GOs. Substantial Completion will be declared after this is complete. Project cost increase due to increased project duration.

Track

2016 Annual Track Program	Construction Completion	Dec-16 \$17.6M	Jan-17 (A) \$17.6M
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Completion delayed due to December snowstorm that prevented completion of the final crossing.

MTA Bus

Bus Company Projects

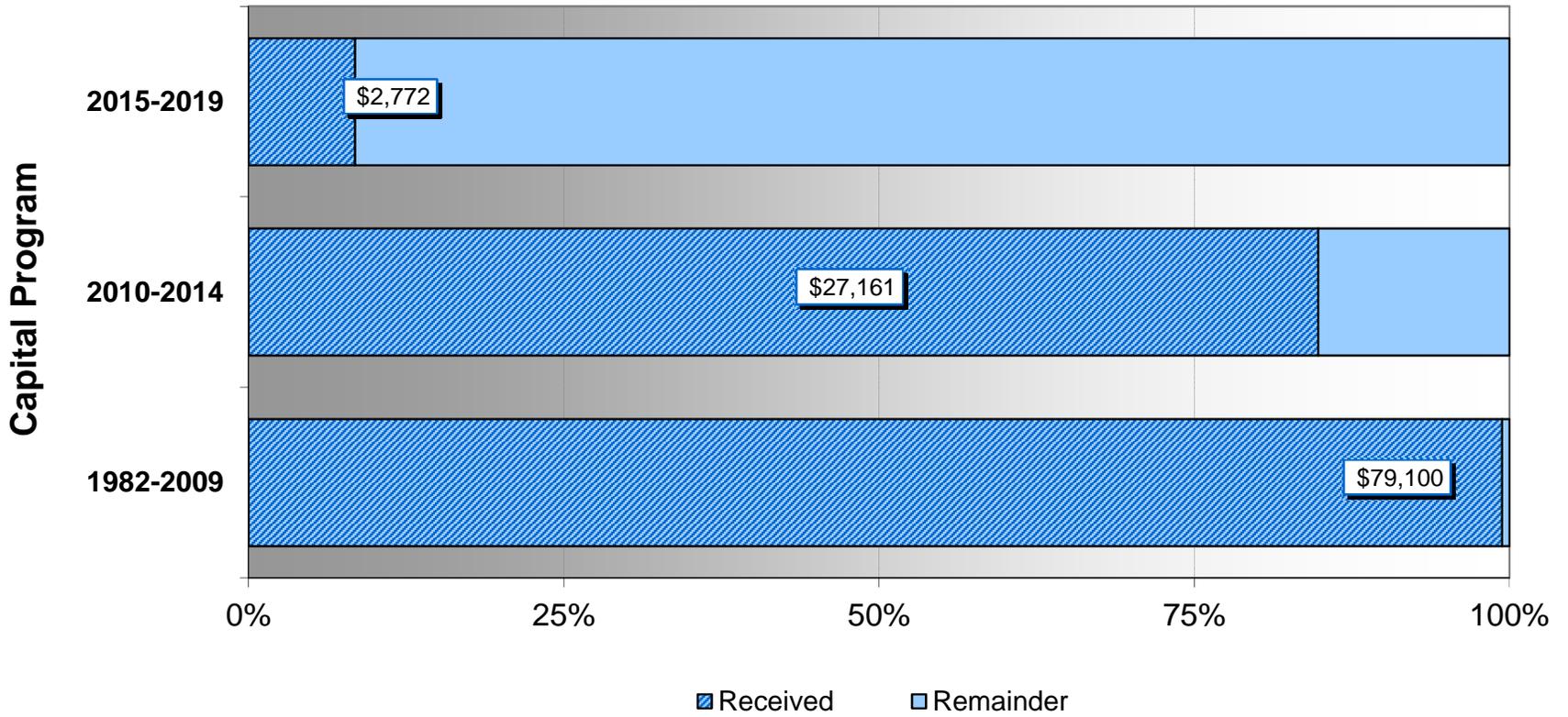
Security Upgrades - Rockaway and Baisley Park	Construction Completion	Sep-16 \$9.9M	Apr-17 (A) \$9.9M
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Delay was due to negotiations for remaining additional work orders (AWOs).

Status of MTA Capital Program Funding

Capital Funding (December 2017)

\$ in millions



Capital Funding Detail (December 31, 2017)

\$ in millions

	Funding Plan	Receipts		
	Current	Thru November	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	24,390	23,920	-	23,920

	Funding Plan	Receipts		
	Current	Thru November	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	189	100	-	100
Federal RIFF Loan	-	-	-	-
City Capital Funds	729	607	-	607
State Assistance	770	400	-	400
MTA Bus Federal and City Match	132	108	-	108
MTA Bonds (Payroll Mobility Tax)	11,772	11,675	-	11,675
Other (Including Operating to Capital)	1,743	1,479	-	1,479
B&T Bonds	2,018	2,018	-	2,018
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	27,161	-	27,161

	Funding Plan	Receipts		
	Current	Thru November	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	214	57	271
MTA Bonds	7,907	12	-	12
Asset Sales/Leases	600	-	-	-
Pay-as-you-go (PAYGO)	2,270	1,094	-	1,094
Other	575	36	-	36
B&T Bonds & PAYGO	2,940	264	-	264
Total	32,806	2,715	57	2,772