



Metropolitan Transportation Authority

Capital Program Oversight Committee Meeting

January 2021

Committee Members

P. Foye, Chair
N. Zuckerman, Vice Chair
A. Albert
J. Barbas
N. Brown
M. Fleischer
R. Glucksman
R. Herman
D. Jones
K. Law
R. Linn
D. Mack
J. Samuelsen
V. Tessitore

Capital Program Oversight Committee Meeting

2 Broadway, 20th Floor Board Room

New York, NY 10004

Thursday, 1/21/2021

10:00 AM - 5:00 PM ET

1. PUBLIC COMMENTS PERIOD

2. APPROVAL OF MINUTES DECEMBER 16, 2020

CPOC Committee Minutes - Page 3

3. COMMITTEE WORK PLAN

2021 CPOC Committee Work Plan - Page 4

4. NYCT / LIRR CAPITAL PROGRAM UPDATE

NYCT Subway Car Program Update - Page 6

IEC Project Review on R211 Railcar Procurement - Page 22

LIRR M-9 Railcar Procurement Update - Page 29

IEC Project Review on M-9 Railcar Procurement - Page 40

NYCT/DOB & MTA Bus Procurement Update - Page 47

IEC Project Review on Bus Procurement - Page 72

5. C&D Rail & Bus Fleet Strategy Update

C&D Rail & Bus Fleet Strategy Update - Page 77

6. CAPITAL PROGRAM STATUS

Commitments, Completions, and Funding Report - Page 82

MINUTES OF MEETING
MTA CAPITAL PROGRAM OVERSIGHT COMMITTEE

December 16, 2020

New York, New York

10:00 A.M.

Because of the ongoing COVID-19 public health crisis, the MTA Chairman convened a one-day, virtual Board and Committee meeting session on December 16, 2020, which included the following committees:

- Long Island Rail Road and Metro-North Railroad;
- New York City Transit;
- MTA Bridges and Tunnels;
- Finance;
- Capital Program Oversight Committee;
- Corporate Governance;
- Diversity.

To see a summary of the CPOC Committee meeting, please refer to the December 16, 2020 Board minutes in the January Board Book available here on the Board materials website:
<https://new.mta.info/transparency/board-and-committee-meetings/january-2021>



2021 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

C&D Capital Program Update

- B&T

March

C&D Capital Program Update

- Stations Projects

Quarterly Traffic Light Reports

April

C&D Capital Program Update
Update on Capital Program Security Projects (in Executive Session)

May

C&D Capital Program Update

June

Update on OMNY Program
Update on Minority, Women and Disadvantaged Business Participation
Quarterly Traffic Light Report

July

C&D Capital Program Update

September

C&D Capital Program Update
Quarterly Traffic Light Reports

October

C&D Capital Program Update

Update on Capital Program Security Projects (in Executive Session)

November

C&D Capital Program Update

Update on Minority, Women and Disadvantaged Business Participation

Update on Small Business Development Program

December

C&D Capital Program Update

Update on OMNY Program

Quarterly Traffic Light Reports

NYCT Subway Car Program

James Maciag, P.E.
Assistant Chief Mechanical Officer, Car Equipment Engineering
Department of Subways



NYCT Subway Car Program Overall Goals

Maintaining State of Good Repair

- Ensuring a safe, reliable, twenty-first century fleet
- Achieved through regular maintenance programs and replacement of subway cars upon the end of their useful lives

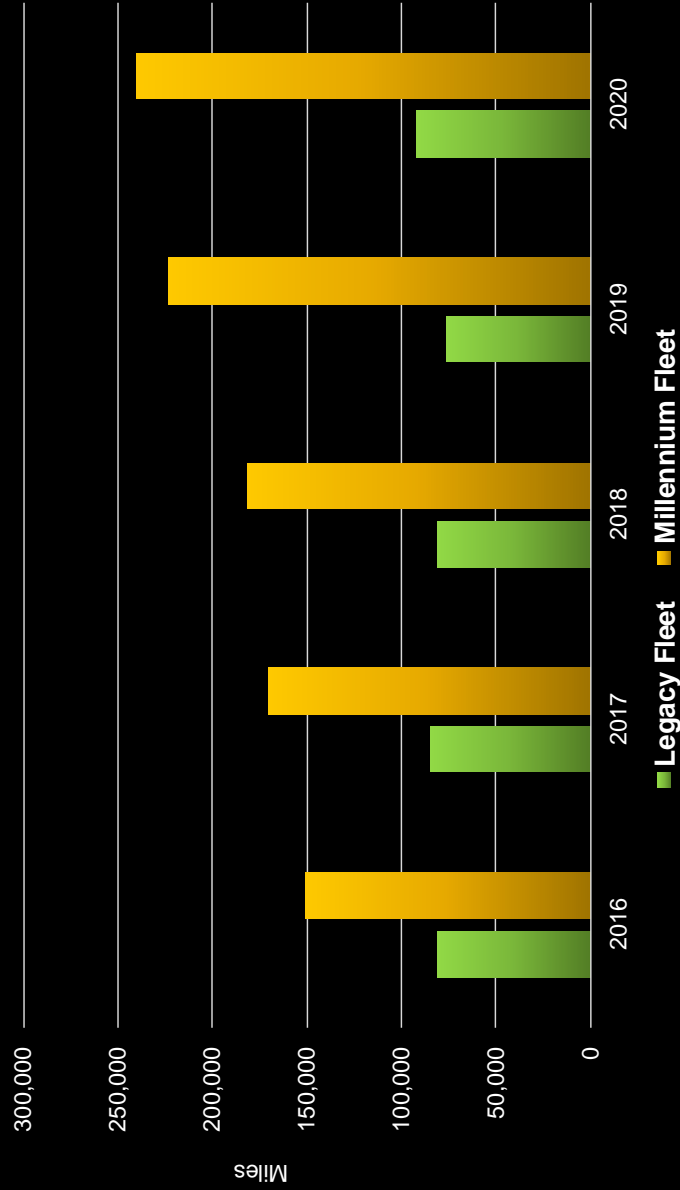
Supporting Signal System Modernization

- The latest car signaling / communication technology requires installation of communications equipment directly on our subway cars
 - New subway cars must be designed to accommodate latest signal technology
 - Existing subway cars be retrofitted to accommodate this equipment

NYCT Subway Car Program

Maintaining State of Good Repair

Annual Mean Distance Between Failure



Reliability of millennium fleet (cars purchased since 2000) has increased **60%** since 2016 and exceeds legacy fleet by **2.5X**

NYCT Subway Car Program

State of Good Repair: New Fleet Outperforms Legacy Fleet

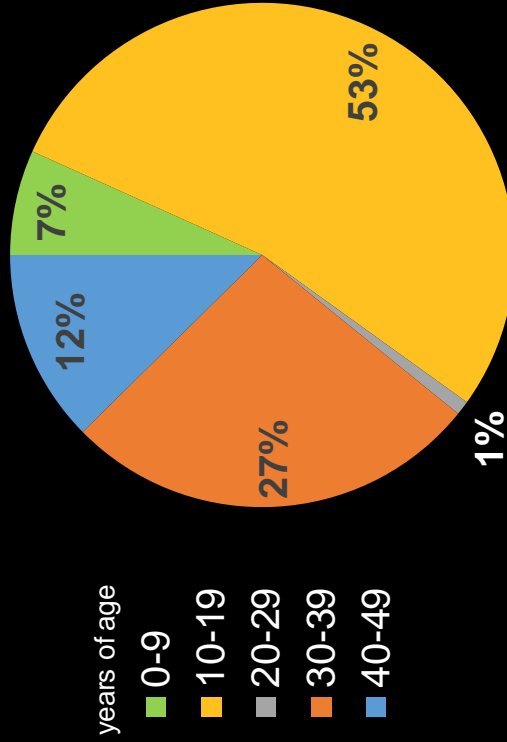
- Investing in new subway cars has a tremendous impact on performance and reliability. One of the primary goals of our subway car capital program is the phasing out our aging legacy fleet.
- Our millennium fleet, which includes cars purchased over the last 20 years, averages over 200,000 miles between failures, which is approximately 3 times greater than our legacy fleet of cars purchased prior to the year 2000.
- A major factor that contributed to the improved overall car performance of the millennium cars was the increases imposed on specific car system performance requirements within the technical specification language.
 - These requirements are continually reviewed and revised as necessary on each future car procurement, leveraging lessons learned on prior car classes, with NYCT always aiming to raise the bar in both vehicle subsystem and overall car performance.

NYCT Subway Car Program

State of Good Repair: Fleet Age

Current Composition of Fleet, by Age

Useful Life Benchmark: 40 Years



R179 Project Objectives

Maintaining State of Good Repair

- Replaced the R32 and R42 classes, which dated back to the 1960s

Supporting Modernized Signals

- Delivered CBTC-ready cars in support of the ongoing installation of CBTC on the 8 AV ACE line

R179 Project Status

- Awarded to Bombardier in 2012
- Originally 300 cars; expanded to 318 cars as a result of settlement agreement
- 318th car delivered in Dec 2019
- Bombardier continues work on field modifications at no additional cost to NYCT
- The project is within its overall budget of \$744 million



R179 Service Status

- June 4, 2020: Two cars separated while in revenue service. Fleet removed from service due to draft gear assembly problem.
- July-Oct 2020: R179 Independent Review Panel Investigated Quality & Safety Requirements. No systemic issues found by the Panel; root cause identified and mitigated.
- Sept-Nov 2020: Fleet Returned to Service in Two Steps: Monitor Simulated Service followed by Return to Revenue Service. No recurrence of issues.



R211 Project Objectives

Maintaining State of Good Repair

- Replaces 40+ year old NYCT R46 and SIR R44 fleets

Supporting Modernized Signals

- Increases CBTC-equipped subway car fleet to enable expansion of CBTC on the B-Division, including the ongoing installation on the 8 Av ACE Line

R211 Project Overview

- Awarded to Kawasaki in February 2018
- Up to 1,612 cars for NYCT and SIR
- Base Order (535 cars):
 - Base Order budget \$1.75 billion
 - 440 Standard 'R211A' cars
 - 75 Staten Island Railway 'R211S' cars
 - 20 Open Gangway Test 'R211T' cars



R211 Progress to Date

- R211 project continues to advance in light of the challenges faced with the COVID-19 pandemic.
 - Critical Design Reviews have been completed, with sub-system qualification testing in progress.
 - The R211A pilot train is completing production in Nebraska, which will be discussed in more detail on the upcoming slides.
 - The R211T open gangway pilot train production is underway.
- The R211 design includes many new features to increase capacity and improve the customer experience; wider doors and niches, LED interior and door indication lighting, digital advertisement signs, next generation HVAC units and updated vehicle control systems.
- The agency's goals for safety, reliability, and sustainability are embedded into the R211 design with features such as CCTV, video network recorders, enhanced customer information signs and the latest car-borne monitoring and diagnostics tools.

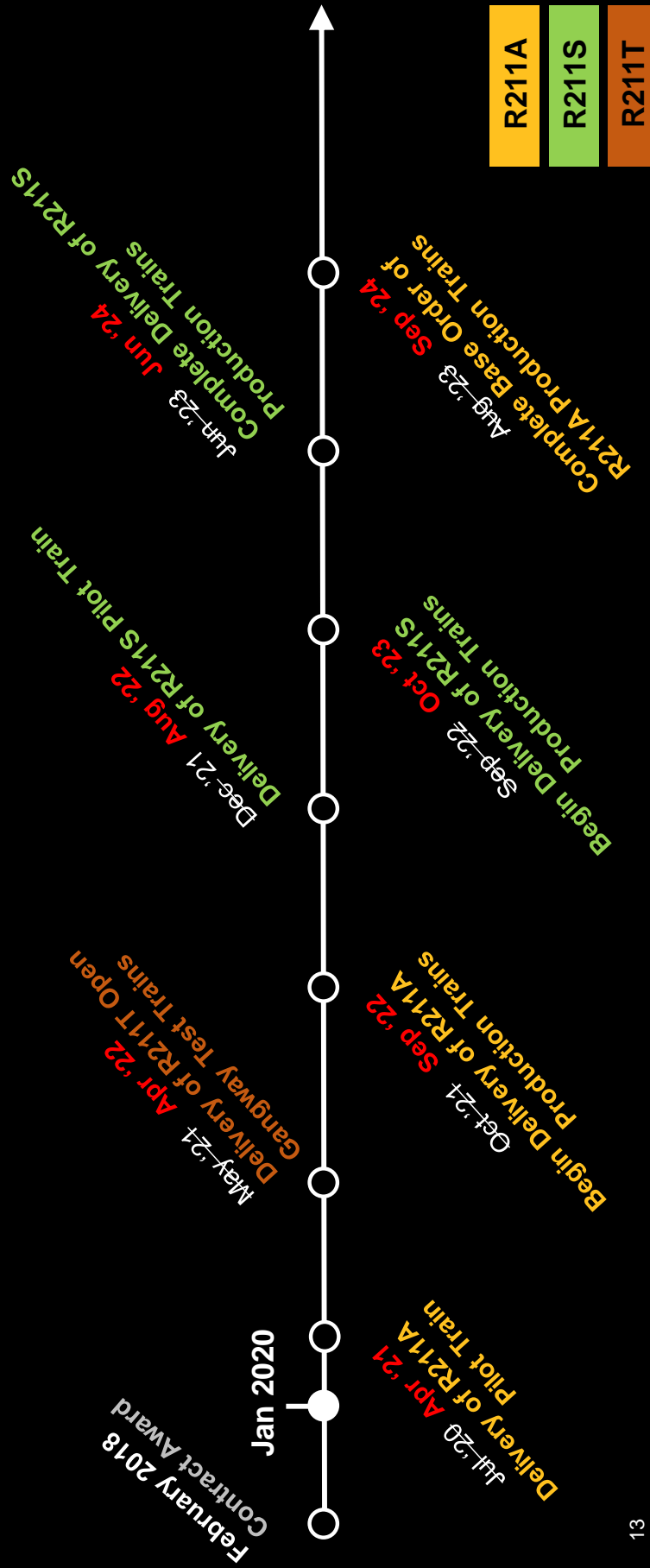


R211 COVID-19 Schedule Impacts

Kawasaki has indicated (via the latest official submittals) estimated delays on the contractual delivery dates for the various R211 trains ranging from 9-14 months due to COVID-19.

- *NYCT is currently reviewing details of the schedule and cause of delays (including the impact of the pandemic)*
- **R211A Pilot Train** – projected to be delivered in April 2021 (9 months late).
 - Current project activities include system qualification testing on brakes and auxiliary power. The pilot train will undergo extensive qualification testing in anticipation of production car deliveries beginning in September 2022.
- **R211T Open Gangway test trains** – projected delivery in Apr 2022 (13 months late)
- **R211S Staten Island Railway Cars** - test train projected for delivery in Aug 2022 (8 months late); production cars projected start delivery in Oct 2023 (13 months late)
- **R211A Base Order** – projected for completion in Sept 2024 (11 months late)

R211 Latest Kawasaki Schedule – Under Review

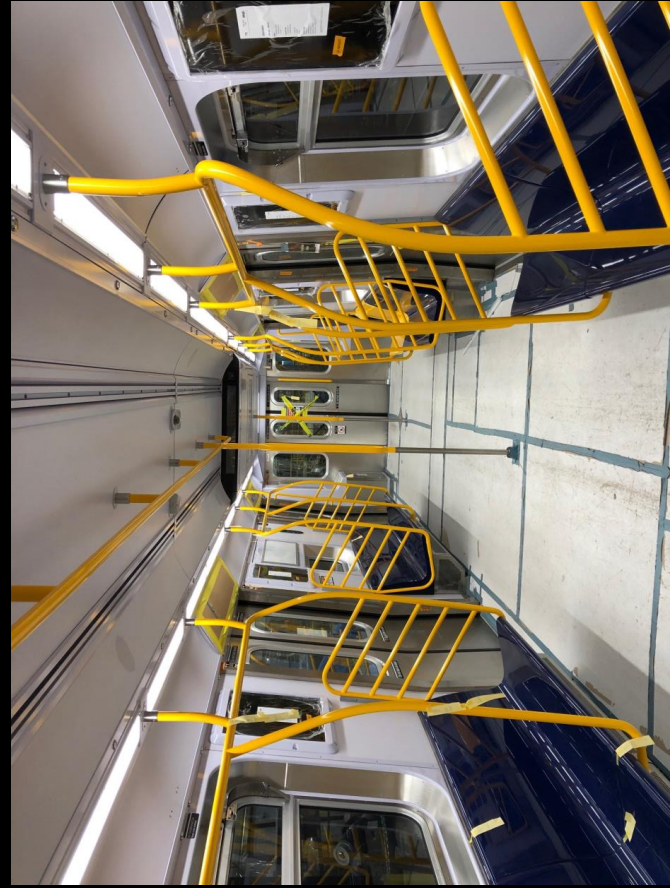


R211A Production in Lincoln, Nebraska



R211A 5-car unit in final stages of production

R211A Production In Lincoln, Nebraska



Completed R211A interior



R211A Cab

R211T Production in Lincoln, Nebraska



R211T Open Gangway exterior



R211T Open Gangway interior

January 2021 CPOC Independent Engineering Consultant Project Review

R211 Vehicle Procurement



Project Scope

- The R211 project 535 car base order was awarded to Kawasaki in February 2018 at \$1.77B which was provided for in the 2015-2019 Capital Program.
- The contract has three vehicle sub-classes being R211A, R211S, and R211T:
 - 440 R211A cars that will partially replace 748 B-Division R46 vehicles
 - 75 R211S cars which will replace the R44 fleet on the Staten Island Railway
 - 20 R211T open gangway prototype cars. The R211T open gangway test trains are meant to prove the feasibility of this design.

Summary

- Over the past year, the R211 project has seen a delay of 15 months. Issues experienced earlier in the project by Kawasaki were compounded by COVID-19 related schedule impacts, all of which have contributed to the current schedule delay.
- Deficiencies in the following areas continue to cause delays:
 - Project planning
 - Parts shortages
 - Failed or delayed acceptance and qualification testing due to quality and/or compliance issues
 - Inadequate vendor support
 - Poor sub-supplier defect analysis and slow implementation of corrective actions.

Schedule

Kawasaki Proposed Project Schedule			
Milestone	Base Contract Dates	November 2020 Update	Delay
R211A Pilot Car Delivery	7/30/2020	4/1/2021	9 mo.
1st Production unit deliver to NYCT (R211A)	9/22/2021	9/1/2022	12 mo.
R211A Last Production Car Delivery	7/25/2023	9/1/2024	14 mo.
R211S Pilot Car Delivery	12/23/2021	8/1/2022	8 mo.
R211S Last Production Car Delivery	3/29/2023	6/1/2024	15 mo.
R211T Pilot Car Delivery	5/28/2021	4/1/2022	11 mo.

- The latest schedule update provided by Kawasaki reflects several project milestones have been impacted.
- COVID-19 impact has further contributed to the pilot vehicle production delays that previously existed.
- The project also continues to be impacted by other MTA vehicle project work at the same Kawasaki facility.



IEC Forecast

- Kawasaki is planning to deliver the 535-car base order within a 24-month period at an average delivery rate of 22 vehicles per month with completion in September 2024, the IEC considers this delivery rate aggressive.
- The IEC forecasts the following issues could delay pilot vehicle delivery up to an additional 3 months:
 - Outstanding technical issues
 - Acceptance testing per contract specification
 - Lack of qualified resources
 - COVID-19 restrictions
- NYCT has not accepted the Kawasaki proposed production schedule. IEC needs further details of the proposed production plan as well as the assumptions built into the Kawasaki submission in order to assess the viability of this schedule.

Budget

- The project Budget and EAC of \$1.768B have not changed since last report. This does not account for the cost of delays reflected in the December 2020 schedule update proposed by Kawasaki.
- The IEC estimates the additional Force Account Support cost could be up to \$13.5M and may impact the project EAC.

Recommendations

- **Sub-suppliers are failing to meet the pilot car parts delivery schedule due to several major components failing acceptance tests, resulting in program delays.**
- The IEC recommends that following failure determination and correction, NYCT require Kawasaki develop a realistic delivery plan and integrate it with their pilot car delivery schedule.
- **During monthly project updates, not all required Kawasaki departments are present at meetings resulting in coordination issues.**
- The IEC recommends NYCT ensure Kawasaki provide the proper representation to cover all scheduled meetings.
- **The LIRR M9 project, also awarded to Kawasaki, is experiencing significant quality issues.**
- The IEC recommends NYCT direct and work with Kawasaki to apply lessons learned from the M9 project to avoid transference of issues and prevent unnecessary delays.



LIRR M-9 Railcar Procurement CPOC Briefing January 2021

Rev L



LIRR M-9 Railcar Procurement Update

□ Car Quantity

➤ Base Cars: 92

➤ Option Cars: 110

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

□ Budget

□ Project Budget: \$406.4M

□ Current EAC: \$406.4M

□ Contingency: \$0

Base Order (92)

\$406.4M

\$406.4M

\$0

Option Cars (110)

\$327.2M

\$322.2M

\$ 5.0M

Total (202)

\$733.6M

\$728.6M

\$ 5.0M



M9 Car Update

- The first 8 car passenger service train served the morning rush hour on September 11, 2019.
- 68 Cars have been accepted and are operating successfully in passenger service throughout LIRR's electric territory.
- 10 Cars are on-site at LIRR for 1,000-mile Operational Testing.
- 16 cars are at Arch Street (LIRR Facility leased to Kawasaki) being prepared for Operational Testing.
- 28 Cars are at Kawasaki, Yonkers NY facility (KRC) for final assembly.
- The 175th carshell has commenced Fabrication at Kawasaki's Lincoln, NE plant (KMM).



LIRR M-9 Oversight

- ❑ LIRR continues to perform rigorous oversight in testing and acceptance to ensure that rolling stock placed in passenger service are safe, reliable and provide our riders the quality they deserve.
- ❑ As a result, rolling stock accepted to date are achieving nearly 300,000 miles MDBF over the past 12 months of passenger service, exceeding the required 150,000 miles MDBF.
- ❑ LIRR continues to hold Kawasaki accountable for workmanship issues identified demanding appropriate quality oversight by Kawasaki managers prior to acceptance.
- ❑ Costs for all additional measures necessary to accept rolling stock to be borne by Kawasaki.



Kawasaki Quality & Workmanship

Major items identified by LIRR requiring Kawasaki actions as part of acceptance:

❑ **Kawasaki to improve Workmanship on:**

- Electrical connectors
- Door Tracks

❑ **Identified System Design Improvements Include:**

- Door Systems
- HVAC car body drain piping
- Toilets



LIRR M-9 Actions

To ensure quality, reliability and safety prior to acceptance and to ensure Kawasaki workmanship issues, LIRR continues to perform the following:

- ❑ Chairs daily “Failure Review Board” meetings with Kawasaki and subcontractors to discuss all issues identified during Operational Testing over the previous 24 hours.
- ❑ Requires that all testing issues be resolved prior to any car being Conditionally Accepted (CA) via:
 - Final resolution by Kawasaki prior to CA
 - LIRR approved interim fix implemented before CA
 - Ok to accept and repair as necessary as a warranty repair, but final resolution required at future modification Program (FMI)
- ❑ Assigns “tiger teams” of subject matter experts to tackle each major issue upon discovery, through investigation of root cause determination, to a resolution approved by LIRR (repair or design change).
- ❑ Added LIRR’s oversight inspectors at Hillside and Arch Street to witness and inspect Kawasaki’s required rework.



LIRR M-9 Actions

- ❑ Required KMM to conduct a “Quality Stand Down” day for all its wiring technicians to be retrained.
- ❑ Developed and implemented with Kawasaki a detailed wiring inspection and repair procedure. All Kawasaki wiring personnel have now been directed and trained to follow this new agreed-upon procedure and utilize it at all sites.
- ❑ Required Kawasaki to send skilled wiring technicians from KHI Japan, KMM and KRC to Arch Street and Hillside to perform wiring inspection and repairs.
- ❑ Maintains our teams of Resident Inspectors (RIs) at KMM (NE) and KRC (NY) to work with Kawasaki to verify that items requiring attention are correctly reworked and to add additional inspection for the ongoing manufacturing of subsequent cars to verify that Kawasaki workmanship is addressed at its source prior to advancing to the next stage of build.



LIRR M-9 Actions

- ❑ Required Kawasaki to increase the ratio of QA supervision to technicians performing the work where we found to be deficient.
- ❑ Works each shift daily, side by side with Kawasaki, riding in the cars during Operational Testing to identify, troubleshoot and resolve technical issues to ensure MDBF requirements can be met or exceeded.
- ❑ Participates in MTA all-agency meetings with Kawasaki to discuss the various issues identified including workmanship, subcontractor management, plant capacity, labor resources and schedules.
- ❑ Maintains logs and records of LIRR's costs to due to Kawasaki's issues and inefficiencies to hold Kawasaki accountable. This includes accruing liquidated damages.



M-9 Railcar Procurement Major Milestone Summary

Milestone	Current Schedule	Approximate Shift from 2019 CPOC
202 Cars - Conditional Acceptance (92 Base Order + 110 Option Cars)	Sept 2019 - April 2022	13 Months

- ❑ Kawasaki incurred delays affecting delivery schedule due to several workmanship issues and failures discovered during on-site testing at LIRR.
- ❑ These issues require adjustments, repairs or complete parts and system replacement prior to LIRR granting a car a Conditional Acceptance.
- ❑ Because of these issues, LIRR rated Kawasaki “unsatisfactory” in its latest All Agency Contract Evaluation Report (ACE) due primarily to quality issues and poor schedule adherence.
- ❑ The ongoing COVID-19 pandemic has also contributed to issues and delays in the schedule.
- ❑ LIRR oversight has resulted in MDBF on revenue fleet accepted to date of 300,000 miles.
- ❑ MTA and LIRR have directed Kawasaki to develop new schedules based on their available resources for all of MTA rolling stock including M-9 and resubmit.



M-9 Production Car

Kawasaki Motors Manufacturing (KMM), Lincoln Nebraska



M-9 Final Assembly

Kawasaki Rail Car (KRC), Yonkers New York

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



**January 2021 CPOC
Independent Engineering Consultant
Project Review**

LIRR M-9 Railcar Procurement



Project Scope

- In September 2013, Kawasaki was awarded the M-9 vehicle procurement consisting of 92 base and 110 option railcars. The M9 is a PTC-ready, self-propelled electric multiple unit (EMU) vehicle for use on LIRR's electrified territory. They replace the M3 railcar fleet built during the early 1980's (which are nearing the end of their useful life) and allow for some ridership growth.

Summary

- Over the past year the M9 project has seen a delay of 13 months. Ongoing quality and resource issues were compounded by the onset of COVID-19, all of which have contributed to the overall schedule delay in vehicle delivery and acceptance.
- The main areas contributing to Kawasaki's poor performance have been:
 - Quality of workmanship
 - Supervision and training of technical personnel
 - Maintaining adequate staffing
 - Following processes and procedures
 - Defect analysis and implementation of corrective and preventive measures
 - Vendor parts quality, timely delivery and technical support
- Kawasaki senior management needs to ensure the correction of these program level issues through their project management team to avoid further delays.

Schedule

- As of December 2020, LIRR has conditionally accepted 68 vehicles, 10 are undergoing acceptance testing, and 16 more are at Arch St. Yard being prepared by Kawasaki for delivery to the LIRR.
- The complete 202-car order is now estimated by Kawasaki to be delivered by April 2022. A 13-month slip since the last CPOC report.
- The latest schedule update requires an average of 8-car-per-month delivery rate to meet the April 2022 acceptance date for the remaining 134 cars. The IEC feels this is an optimistic rate given Kawasaki's past performance and other outstanding issues
- The IEC forecasts that acceptance could extend to as late as October 2022. This forecast is based on a more realistic average delivery rate of 6 cars per month.
- The IEC does not believe the delays encountered to date are recoverable.

Budget

Budget	
Description	Amount
Current Budget	\$733.6M
Additional Force Account Support Cost	\$3.7M
Remaining Project Contingency	\$5M
LIRR Current EAC	Under evaluation

- The LIRR's current M-9 budget of \$733.6M has not changed since last report.
- The IEC estimates schedule delay costs could account for up to an additional \$6.6M.
- LIRR is re-evaluating the estimated cost to complete for Force Account labor to minimize the impact on the project EAC, resulting from the delays encountered by Kawasaki on the Project.

Observations

- LIRR is closely monitoring an open items list on conditionally accepted cars to assure all issues are fully resolved prior to acceptance.
- Although the project has seen numerous issues due to quality, once corrected, the performance is noteworthy. The 12-month average Mean Distance Between Failure (MDBF) of nearly 300,000 miles is considerably higher than the contract requirement for accepted in-service vehicles.
- While the IEC has seen some improvement, Kawasaki continues to struggle with establishing effective and consistent quality management and this is driving delays in vehicle acceptance. LIRR is ensuring that Kawasaki reports out regularly on the implementation of their corrective action plans, which includes metrics tracking improvement on a fleet-wide and vehicle basis.

Recommendations

- Kawasaki has encountered difficulty in having qualified and experienced resources available. While they continue to seek the proper resources, LIRR should require that Kawasaki provide technical experts to supervise their personnel at their US production facilities. These experts should be on site until LIRR is satisfied that the expected level of product quality has been both achieved and will be maintained for the duration of the project.

Bus Procurement Update

Bus Operations
Frank Annicaro
Chief Officer, NYCT/DOB & MTA Bus Company



Agenda

Technology & Operations Safety Improvements

Customer Amenities & Accessibility

All Electric Buses

Bus Contracts Overview

Appendix

Using Technology to Drive Service Reliability

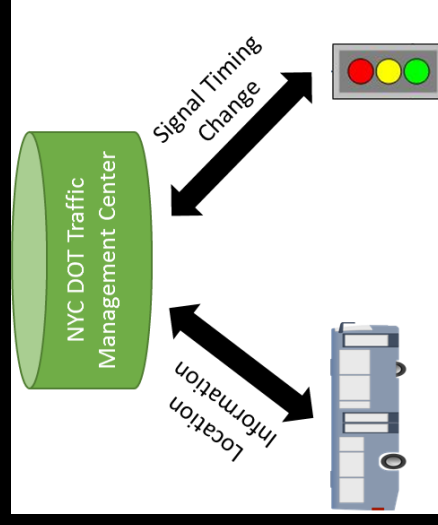
Automatic Bus Lane Enforcement (ABLE)

- Partnership with NYCDOT and NYCDOF to ticket vehicles in the bus lanes
- The system is now on 123 buses and operating on 8 routes in Manhattan and Brooklyn
- To date, more than 65,000 violations and warnings have been issued
- We are working with vendors to improve the technology to expand the program



Transit Signal Priority (TSP)

- Communicates with NYC traffic center to shorten red or extend green lights to allow buses to travel without stopping
- 648 new intersections added in 2020
- To date, TSP is operating on over 1,500 intersections
- Target to add 300 intersections in 2021



Safety Improvements

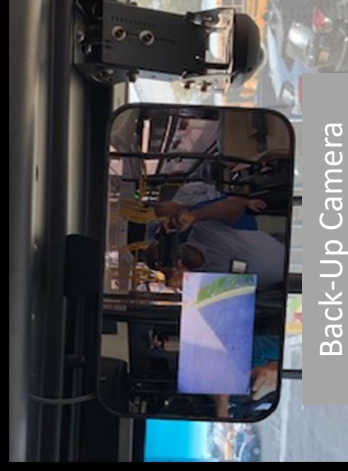
Advanced Camera Systems

- Interior and exterior cameras improve situational awareness for incident investigations
- Over 4,100 buses currently equipped with cameras
- All new buses come equipped



Back-Up Cameras

- Provide added visibility and safety for operators while backing up
- 68 buses are currently equipped with back-up cameras
- All new buses will come equipped



Advanced Camera System

Back-Up Camera

Safety Improvements

Pedestrian Turn Warning (PTW)

- Audible announcement outside the bus when the bus makes a turn
- Over 1,200 buses are currently equipped with PTW
- All new buses come equipped

Hi-Vis Windows

- Structural changes reduce obscuration by ~50%
- Over 1,700 buses currently have Hi-Vis Windows
- All new buses come equipped



Pedestrian Turn Warning



New Hi-Vis Window

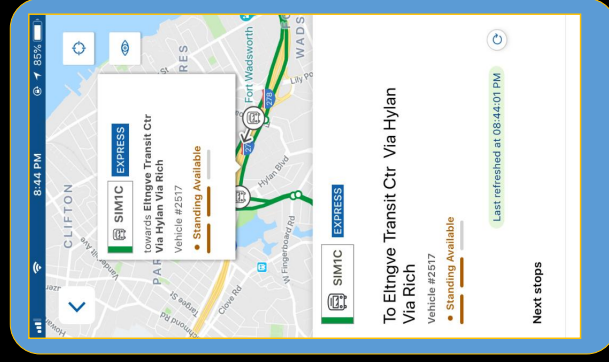
Customer Amenities

Automatic Passenger Counters (APC)

- Launched on SI express service in 2018, allowing customers to see if a seat is available on the next bus
- Expanded to all boroughs in July 2020 to support public loading information during COVID-19
- Over 2,400 buses are currently equipped with APC
- All new buses come equipped

Digital Information Screens (DIS)

- Provide customers with a new level of “next stop” information, as well as service alerts, and other digital content
- Over 2,700 buses are currently equipped with DIS
- All new buses come equipped



Automatic Passenger Counter
Real Time Seat Availability



Digital Information Screens

Accessibility Enhancements

Developing accessibility enhancements with the System Wide Accessibility Group

- Improved seating configuration by providing additional flip up seats for flexible seating options (e.g., walkers, strollers, etc.), and new longitudinal seats
- Wider ramp with improved visible delineation
- Wider rear door allows ease in egress with improved access to handrails
- All new buses will be equipped with these changes

Hearing Induction Loop Proof-of-Concept

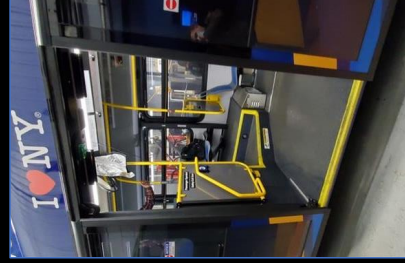
- Enhances announcements
- Pairs with digital information screens
- Implemented a proof-of-concept to test functionality and performance



New Longitudinal Alternating flip up seats



Wider Ramp with Stripe



Wider Rear Door

Moving Towards an All-Electric Fleet

10 bus pilot

- Leased standard electric buses starting in 2018 (5 New Flyer and 5 Proterra)

15 articulated buses

- 1st MTA electric bus purchase (New Flyer)
- Began operation late in 2019

Charging infrastructure for additional depots

- Solicitation in process with NYPA



On street rapid charger at 43rd St & Pier 83



Rooftop chargers at MJ Quill depot to support the 15 artic

Converting to All-Electric

- Requires 100% of new buses to be all-electric starting in 2028
- Estimated need for an additional 250 to 350 MegaWatts of power supply system-wide
- All 28 depots must be retrofitted to provide charging infrastructure for the fleet of 5,800 buses
- Complete transformation of depot operations, service planning, and maintenance practices
- Solicitation for a full fleet transition study planned in 2021



2020 Bus Procurements Update

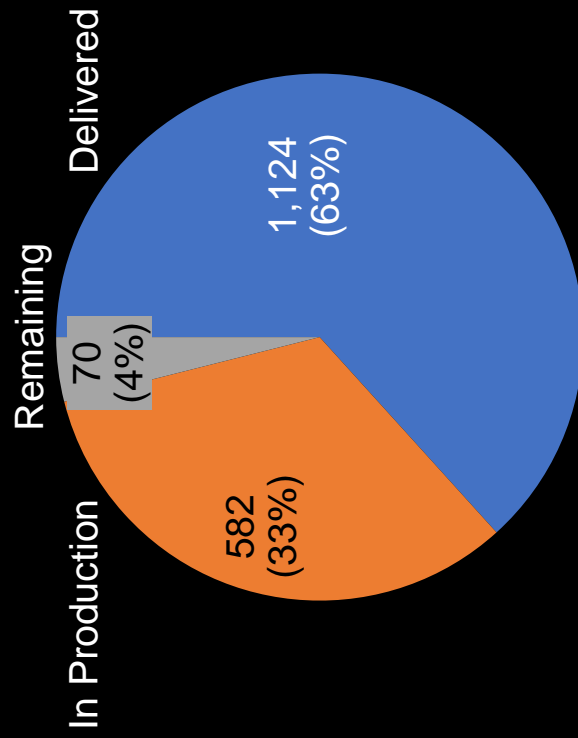
2015-2019 Program (1,776 buses)

- Completed delivery for 2 contracts: 53 New Flyer diesel articulated and 15 New Flyer electric articulated
- Began production for 4 contracts: 257 Prevost express (MTA Bus), 50 Prevost express, 110 New Flyer standard hybrid, and 165 Nova standard hybrid

2020-2024 Program

- Exercised options for 335 Nova standard buses (126 hybrid, 209 diesel)

2015-2019 Capital Program Bus Purchases

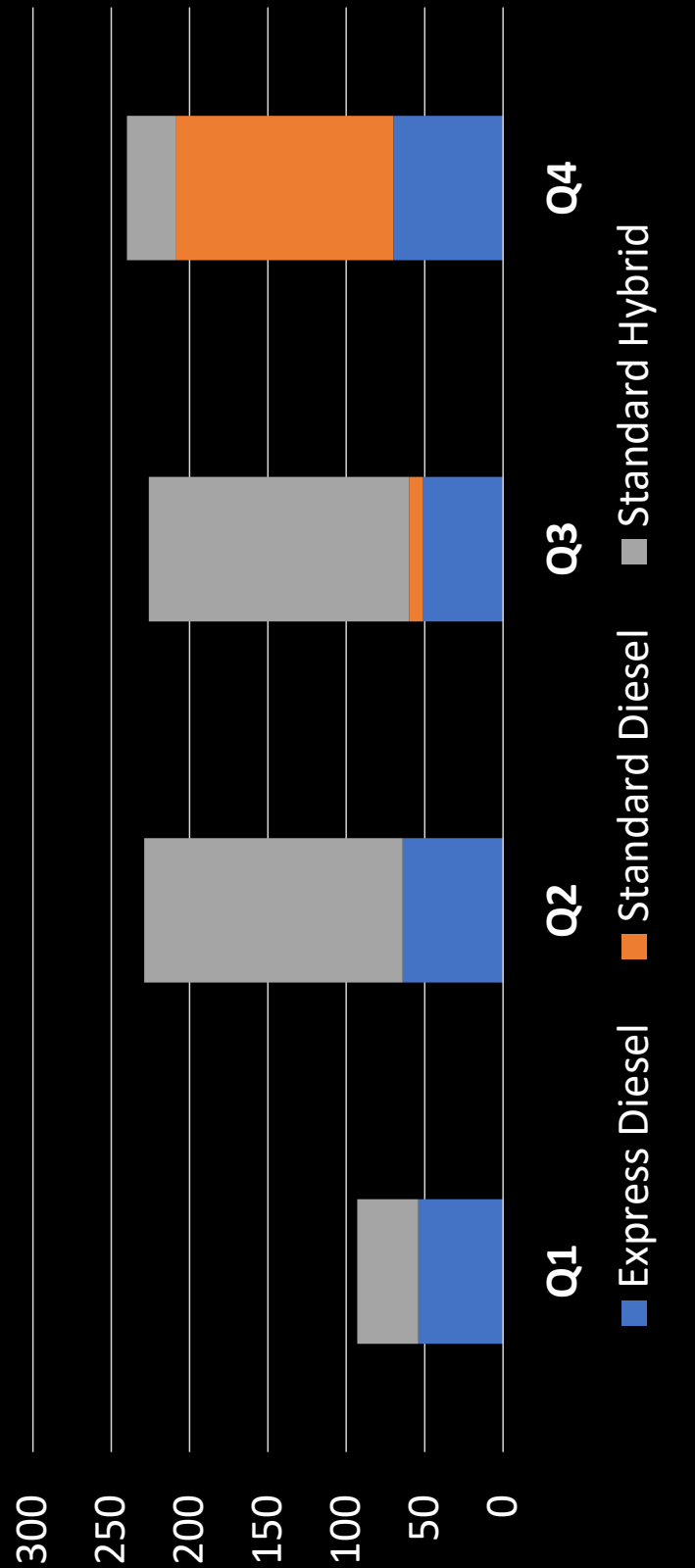


Remaining Procurements for 2015-2019 Capital Program

Fleet	Type	Agency	Total Order	Status
Prevost 45-ft Coach	Express	MTA Bus	257	In Production
Prevost 45-ft Coach	Express	NYCT	50	In Production
Nova 40-ft Hybrid	Standard	NYCT	165	In Production
New Flyer 40-ft Hybrid	Standard	NYCT	110	In Production
40-ft All-Electric Bus	Standard	NYCT	45	In Development
40-ft Clean Diesel	Standard	MTA Bus	25	In Development
Total			652	

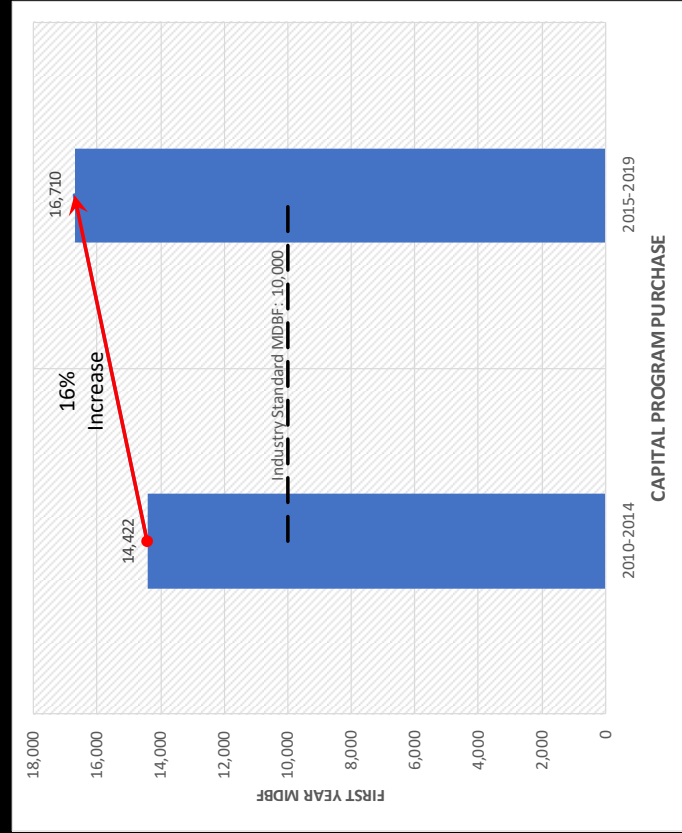
Expected Delivery of more than 750 Buses in 2021

2021 Expected New Bus Deliveries



Bus Performance Improvements in the 2015-2019 Capital Program

Mean Distance Between Failure (MDBF)
(1st year of operation)



Performance improvements are due to:

- Applying lessons learned
- Ensuring adherence to our technical bus specifications
- Rigorous evaluation and testing requirements
- Monitoring fleet performance on new buses

Highlights of 2020 – 2024 Capital Program

New buses

- Replaces the oldest buses throughout the network
- Planned purchases to include alternative fuel vehicles
- Expansion of new technology systems: bus lane enforcement cameras, digital screens, passenger counters, and TSP

Supports transition to a zero-emission fleet

- New buses and depot infrastructure upgrades to gain critical experience
- Development of a long-term transition plan to reach 100% zero-emissions by 2040

Capital program currently under review due to COVID-19 



APPENDIX

Current Fleet

	NYCT DOB	MTA Bus	Total
Standard 40'	3,091	666	3,757
Diesel	1,648	45	1,693
CNG	410	216	626
Hybrid	1,023	405	1,428
All Electric*	10	0	10
Articulated 60'	1,028	141	1,169
Diesel	903	141	1,044
CNG	110	0	110
All Electric	15	0	15
Express 45'	497	509	1,006
TOTAL	4,616	1,316	5,932

* Leased buses

Above figures based on Fall 2020 Bus Assignment

2015-2019 Capital Program Deliveries Since Last CPOC Presentation

Fleet	Agency	Total Order	Status	Contract	Actual Completion Date	Current Budget (\$million)	Current Expenditures (\$million)	% Expended
New Flyer XD-60 Clean Diesel Artic	MTA Bus	53	Complete	B40669	2/5/2020	\$50.20	\$46.00	92%
New Flyer All Electric Bus Artic	NYCT	15	Complete	B40640	6/30/2020	\$34.20	\$30.30	89%
Total		68				\$84.40	\$76.30	90%

Ongoing Bus Deliveries 257 Prevost 45-ft coaches (MTA Bus)

- Awarded November 2019
- In-service evaluation is complete
- Production is underway
- \$166.7 million budget (on budget)



Highlights:

- Will replace older buses in Queens and the Bronx.
- Plant shutdown due to COVID-19 from March 2020 through August 2020.
- Complete delivery was planned to be February 2022. The recovery schedule has complete delivery planned for March 2022.

Ongoing Bus Deliveries 50 Prevost 45-ft coaches (NYCT-DOB)

- Awarded November 2019
- Production is underway
- \$33.9 million budget (on budget)



Highlights:

- Will replace older buses in Staten Island.
- Plant shutdown due to COVID-19 from March 2020 through August 2020.
- Complete delivery was planned to be March 2022. The recovery schedule has complete delivery planned for April 2022.

Ongoing Bus Deliveries 165 Nova Hybrid 40-ft Standards (NYCT-DOB)

- Awarded December 2019
- In service evaluation is completed
- Notice to proceed for production buses issued December 2020
- Production is underway
- \$150.7 million budget (on budget)

Highlights:

- Will replace older buses in the Bronx and Manhattan
- Plant shutdown due to COVID-19 from March 2020 through July 2020.
- Complete delivery was planned to be April 2021. The recovery schedule has complete delivery planned for August 2021.



Ongoing Bus Deliveries 126 Nova Hybrid 40-ft Standards (NYCT-DOB)

- Awarded February 2020
- Production to begin February 2021
- \$107.9 million budget (on budget)



Note: Bus shown is a prototype for this order

Highlights:

- Will replace older buses in the Bronx and Manhattan.
- Plant shutdown due to COVID-19 from March 2020 through July 2020.
- Complete delivery was planned to be July 2021. The recovery schedule has complete delivery planned for September 2021.

Ongoing Bus Deliveries 110 New Flyer Hybrid 40-ft Standards (NYCT-DOB)

- Awarded December 2019
- \$99.3 million budget (on budget)
- In-service evaluation is underway on two pilot buses



Highlights:

- Will replace older buses in Brooklyn, Manhattan, and Queens.
- Partial plant shutdown due to COVID-19 from March 2020 through June 2020.
- Complete delivery was planned to be October 2021. The recovery schedule has complete delivery planned for November 2021.

Ongoing Bus Deliveries

209 Nova Diesel 40-ft Standards (NYCT-DOB)

- Awarded February 2020
- \$141.2 million budget (on budget)
- Production of the pilot bus is underway

Highlights:

- Will replace older buses in Brooklyn, Queens, and Staten Island.
- Plant shutdown due to COVID-19 from March 2020 through July 2020.
- Complete delivery was planned to be December 2021. The recovery schedule has complete delivery planned for February 2022.

Completed Bus Deliveries
53 New Flyer Clean Diesel 60-ft Artics (MTA Bus)

- Awarded June 2018
- Deliveries: October 2019 to February 2020
- \$50.2 million budget (on budget)

Highlights:

- Being used in SBS and expanded artic service in Queens



Completed Bus Deliveries
15 New Flyer All Electric 60-ft Artics (NYCT-DOB)

- Awarded December 2018
 - Deliveries October 2019 to June 2020 (extended due to COVID-19)
 - \$34.2 million budget (on budget)
- Highlights:**
- First all-electric 60-foot buses in the fleet
 - Uses new universal charging standard; compatible with existing on-route chargers
 - 16 depot chargers being installed at MJQ
 - Partial plant shutdown due to COVID-19 from March 2020 through June 2020



January 2021 CPOC Independent Engineering Consultant Project Review

Bus Procurements



Scope

- There are currently six active bus procurement contracts with a total of 917 vehicles for a program cost of \$700.4M.
- The bus program targets the need for an improved customer experience:
 - On-board digital information system
 - Traffic bus lane cameras
 - Traffic signal priority for faster service

Budget

Description	Award Date	Vendor	Budget	EAC
257 Diesel Express Buses	Nov-19	Prevost	\$167M	\$166.4M
50 Diesel Express Buses	Nov-19	Prevost	\$33.9M	\$33.9M
165 Hybrid Buses	Dec-19	NOVA	\$151M	\$151M
126 Hybrid Buses	Feb-20	NOVA	\$108M	\$108M
209 Diesel Standard Buses	Feb-20	NOVA	\$141.2M	\$141.2M
110 Hybrid Electric Buses	Dec-19	New Flyer	\$99.3M	\$96M

- The Department Of Buses (DOB) currently has:
 - Six vehicle procurements which total \$700.4M in active contracts.
- Based on a budget review of the active projects, the IEC forecasts the projects are currently on target to complete within budget.



Schedule

- ▣ Schedule delivery adjustments are attributable to COVID-19 impacts. The bus manufacturers have submitted new final delivery schedules which have been accepted Department of Buses (DOB).

Description	Vendor	Delivery Start Dates	Delivery Completion at last report	Current Delivery Completion	Adjustment due to Covid-19
257 Diesel Express Buses	Prevost	Nov-20	Feb-22	Mar-22	1 Mo.
50 Diesel Express Buses	Prevost	Jan-21	Mar-22	Apr-22	1 Mo.
165 Hybrid Buses	NOVA	Dec-20	Apr-21	Aug-21	4 Mo.
126 Hybrid Buses	NOVA	Dec-20	Jul-21	Sep-21	2 Mo.
209 Diesel Standard Buses	NOVA	Dec-20	Dec-21	Feb 22	2 Mo.
110 Hybrid Electric Buses	New Flyer	May-21	Oct-21	Nov-21	1 Mo.

- ▣ The IEC finds the DOB has effectively managed the Covid-19 impacts to the active contracts and the adjusted delivery dates are achievable.



Observations

- The DOB has expressed concerns with the bus vendors regarding production quality issues on earlier procurements that have created maintenance issues.
- The DOB management team is effectively managing the overall bus procurement program.



Rail & Bus Fleet Strategy Update

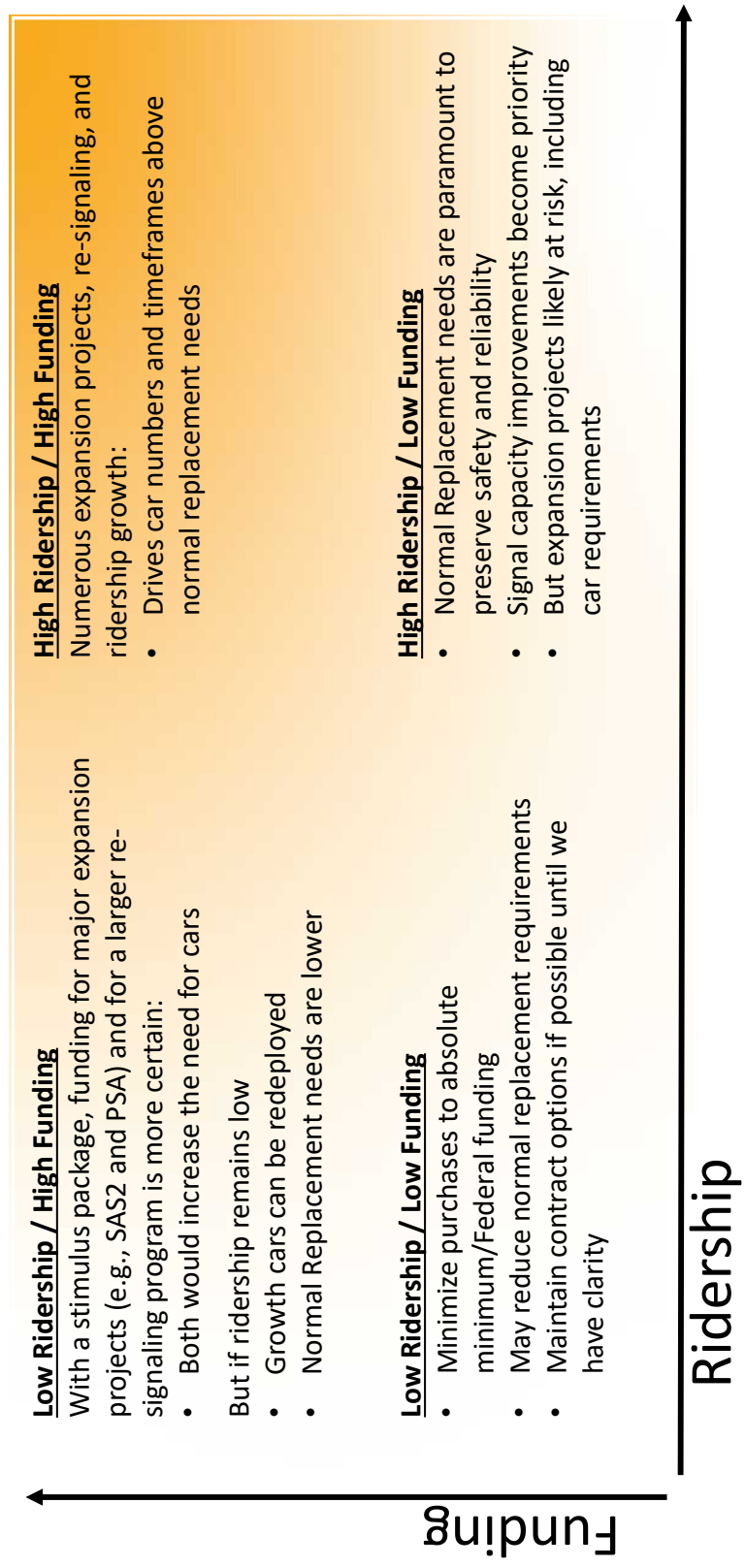
January 2021



Four key elements of MTA fleet strategy

1. **Normal Replacement cycles are designed to preserve fleet reliability and maintainability**
 - R211 replaces R46 and SIR R44 (arriving 2021-2024)
 - M9 replaces LIRR M3 fleet (arriving 2019-2022)
2. **Peak-period ridership dictates fleet requirements**
 - Need for growth cars will be delayed if, as projected, peak period ridership remains below pre-COVID levels
3. **New rolling stock is required to meet the needs of major capital upgrades or investments, such as signal modernization and Second Ave Subway Phase 2**
 - R211 base order will be timed to meet service needs for 8 Ave signal modernization
 - Additional cars may be required for other re-signaling projects, depending on schedule
 - SAS Phase 2 will require additional cars
4. **Funding constraints have delayed fleet replacement in the past**
 - Strategy has been to invest additional operating resources for life-extending overhauls

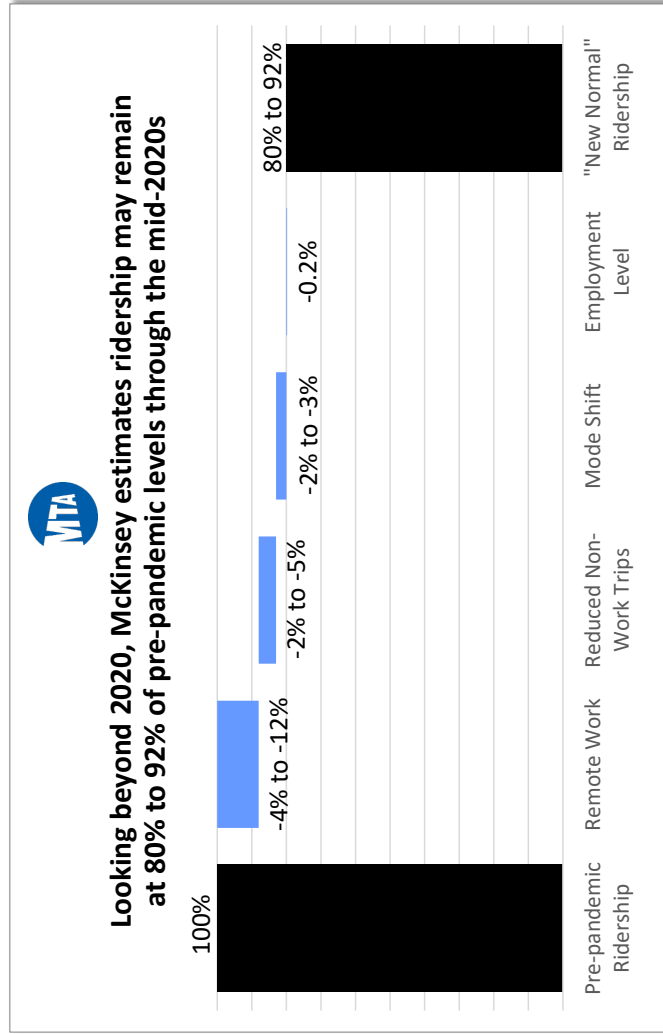
COVID-related drops in ridership and funding influence fleet planning



Peak ridership informs procurement timing and size

- Remote working patterns disproportionately impact peak ridership: 7 in 10 peak-period customers are traveling for work
- Impact on railroads is even greater
 - 95% of am peak railroad trips are work trips
 - Railroad customers disproportionately in remote work-friendly industries
- Closely monitor remote work trends after widespread vaccination achieved

Source: MTA customer surveys



Source: November 2020 Financial Plan Presentation

Different ridership trends may result in a different approach for bus procurement

Similar to equation for rail cars,

- Normal Replacement strategy preserves reliability
- Peak-period ridership dictates fleet requirements

But impacts of COVID on bus ridership appear less than on rail

- Bus ridership has maintained higher ridership levels during COVID, relative to subways or railroads
- There is growing support for more dedicated bus lanes which will make buses faster and more reliable, attracting additional ridership

We will look to advance our commitment toward an all-electric bus fleet and the necessary depot modification while balancing the funding constraints

**MTA Capital Program
Commitments & Completions
through
December 31, 2020**

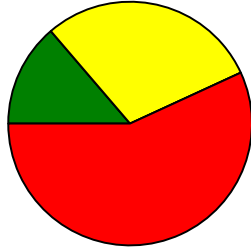
Capital Projects – Major Commitments – December 2020

In 2020, agencies have a goal of \$13.5 billion in overall commitments. 51 major commitments are included; 29 for NYCT, eleven for LIRR, four for MNR, one for B&T, four for Network Expansion, and two for MTA Bus.

The MTA's Chairman Pat Foye announced at the March 25th Board meeting that capital work commitments will only be considered on an exception basis. This action has impacted commitments since then.

Through December, agencies have committed \$5.4 billion including \$746 million of unanticipated commitments versus a \$13.5 billion goal. The shortfall is mainly due to slips of twenty-nine major commitments pursuant to the moratorium on new commitments announced by the MTA Chairman. The twenty-nine major slips are explained on the following pages; forecast dates for commitments are shown by year and will be reforecast as part of the 2021 commitments and completions process.

Year-to-Date Major Commitments

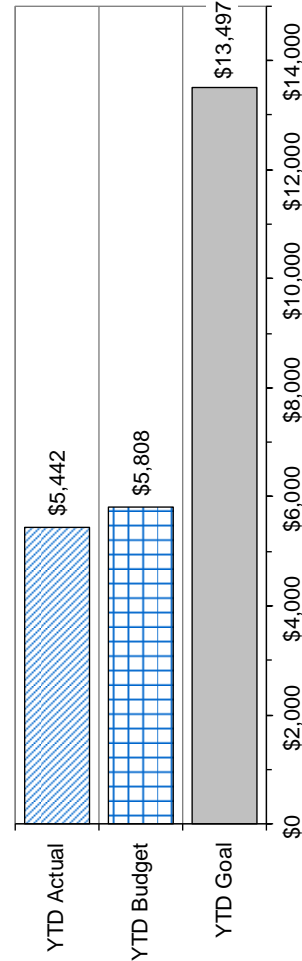


Color	Count	Percent	Change from Prior Month
GREEN	7	14%	-
YELLOW	15	29%	↑ 6
RED	29	57%	-
Total	51	100%	↑ 6

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

Budget Analysis

2020 Annual Goal \$13,497 (\$ in millions)
 2020 Actual 40% of Annual Goal



Year-to-Date Agency Breakdown

2020 Goals	GREEN	YELLOW	RED
New York City Transit	4	6	19
Long Island Rail Road	2	5	4
Metro-North Railroad	2	2	2
Bridges and Tunnels	1	1	1
Capital Construction Company	1	2	1
MTA Bus Company	1	1	1
MTA Police Department	1	1	1
Prior month variance	GREEN	YELLOW	RED
	*****	+3 YELLOW	*****
	*****	+3 YELLOW	-2 RED
	*****	*****	*****
	*****	*****	+1 RED
	*****	*****	*****
	*****	*****	+1 RED
	*****	*****	*****

Capital Projects – Major Commitments – December 2020 – Schedule Variances

Project	Commitment	Goal	Forecast	Project	Commitment	Goal	Forecast
29 All-Agency Red Commitments (6 New Items)							
NYCT							
<i>Passenger Stations</i> Replace 12 Escalators	Construction Award	May-20 \$ 111.9	2021 \$ 114.1	<i>Passenger Stations</i> ADA: Wave A1 Bundle	Construction Award	Sep-20 \$ 391.7	2021 \$ 230.2
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects latest estimates.				The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost decrease reflects reduced number of stations now to be awarded under ADA: 8 Stations (Pkg A) and latest estimates.			
ADA and Station Improvements: Westchester Square / PEL	Construction Award	May-20 \$ 90.0	2021 \$ 94.4	ADA: Wave A2 Bundle	Construction Award	Sep-20 \$ 788.8	2021 \$ 391.1
The award is delayed due to necessary coordination with other projects. Cost increase reflects additional scope.				The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost decrease reflects reduced number of stations now to be awarded under ADA: 8 Stations (Pkg A) and latest estimates.			
Overcoating: 17 Bridges & East 180 Street Flyover / Dyre Av	Construction Award	Aug-20 \$ 132.5	2021 \$ 143.7	ADA: Wave A3 Bundle	Construction Award	Sep-20 \$ 592.3	2021 \$ 444.7
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects latest estimates and additional scope.				The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost decrease reflects reduced number of stations now to be awarded under ADA: 8 Stations (Pkg A) and latest estimates.			
Replace 8 Traction Elevators/ Various	Construction Award	Jun-20 \$ 65.4	2021 \$ 66.4	ADA: Woodhaven and Jamaica Renewals	Construction Award	Sep-20 \$ 239.2	2021 \$ 313.2
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects latest estimates and additional scope.				The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects project complexity and market conditions and the addition of Court Square ADA project to the bundle.			
ADA: 14 St Complex Bundle	Construction Award	Jul-20 \$ 231.5	2021 \$ 374.0	Culver ROW (Painting) Bundle	Construction Award	Oct-20 \$ 161.8	2022 \$ 161.8
The award is delayed due to necessary coordination with other projects. Cost increase reflects the addition of other projects to the contract bundle.				The award is delayed due to changes in specifications/methodology.			
Flushing (ADA/Renewals/ Components) Bundle	Construction Award	Sep-20 \$ 520.7	2021 \$ 595.7	Jamaica Painting Bundle	Construction Award	Nov-20 \$ 98.4	2022 \$ 98.4
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects additional scope.				The award is delayed due to changes in specifications/methodology.			
ADA: 68 St- Hunter College / Lexington (New Item)	Construction Award	Dec-20 \$ 111.0	2021 \$ 110.0				
The award is delayed due to unresolved real estate issues.							

Capital Projects – Major Commitments – December 2020 – Schedule Variances

Project	Commitment	Goal	Forecast	Project	Commitment	Goal	Forecast
29 All-Agency Red Commitments (continued)				LIRR			
NYCT							
<i>Shops and Yards</i>							
Rail Car Acceptance and Testing Facility, Brooklyn	Construction Award	Jul-20	2021	M-9 Rolling Stock Procurement - 54-Car (Option)	Construction Award	Jun-20	2022
The award is delayed due to unresolved ground lease agreement issues.				The LIRR continues to negotiate with the vendor. Board approval is required to exercise this option.			
<i>Rolling Stock</i>							
Purchase 84 Hybrid- Electric & 139 Standard Buses (New Flyer)	Construction Award	Mar-20	2022	Work Locomotives	Construction Award	Sep-20	2021
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects negotiated price. Four Standard pilot buses were purchased from New Flyer in October 2020.				The award was delayed due to a review of the procurement by the MTA Office of the Inspector General. LIRR Legal notified the project team that MTA OIG closed their investigation without issuing a report. The procurement is now proceeding with an anticipated task opening date of June 2021.			
Purchase 45 Standard Electric Buses & Depot Chargers (New Item)				Hurricane Sandy (West Side Yard Mitigation (New Item))			
The award is delayed due to sequencing of charging infrastructure and bus purchase.				The award is delayed due to on-going Amtrak site access agreement sign-off to complete soil borings and field surveys.			
<i>Track</i>							
8th Ave ROW (Misc.) Bundle	Construction Award	Oct-20	2021	LIC Yard Restoration (wall/pump)	Construction Award	Oct-20	2022
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects the addition of platform component and Mezzanine Structural Rehab & Water Remedy at Canal St/8Av projects to the bundle.				The award is delayed to allow more time to resolve project budget and real estate acquisition issues.			
MNR							
<i>Stations</i>							
Sandy Repairs: Mainline Track - 200 St - 207 St/ 8th Ave	Construction Award	Oct-20	2021	Harlem Line Station Improvements	Construction Award	Apr-20	2021
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects latest estimates.				The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.			
<i>Signals & Communication</i>							
CBTC: Queens Blvd Line East and 5 Interlockings (New Item)	Construction Award	Dec-20	2021	GCT Trained	Construction Award	Nov-20	2021
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.				The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.			

Capital Projects – Major Commitments – December 2020 – Schedule Variances

Project	Commitment	Goal	Forecast
29 All-Agency Red Commitments (continued)			
Network Expansion			
<i>East Side Access</i>			
Rolling Stock Procurement M-9A	Construction Award	Jun-20	2021
Cats		\$367.0	\$367.0
The request for proposals was modified to maximize competition and as a result the associated negotiations have extended the procurement phase.			
<i>Penn Station Access</i>			
Track & Structures, Communications & Signals, Power, Stations, Shops & Yards (Penn Station Access)	Construction Award	Nov-20	2021
		\$1069.7	\$1071.1
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.			
MTA Bus Company			
<i>MTA Bus Company</i>			
CNG Upgrade - Spring Creek (New Item)	Construction Award	Dec-20	2021
		\$7.4	\$7.4
The award is delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.			
Bridges and Tunnels			
<i>Miscellaneous</i>			
Verrazano-Narrows Bridge - Operational Improvements (New Item)	Construction Award	Dec-20	2021
		\$40.0	\$40.0
The award is delayed due to additional time required due to COVID-19 restrictions and the procurement process.			

Capital Projects – Major Commitments – December 2020 – Schedule Variances

Actual Results Shaded

Project	Commitment	Goal	Actual
15 All-Agency Yellow Commitments (6 New Items)			
NYCT			
<i>Line Structures</i>			
Eastern Parkway (Line Structures)	Construction Award	Apr-20 \$135.6	Jun-20(A) \$77.0
The original award was delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Completion date was advanced as part of the MTA's acceleration program. Cost decrease reflects favorable bids.			
<i>Rolling Stock</i>			
Purchase 25 Hybrid Locomotives	Construction Award	Apr-20 \$225.3	Aug-20(A) \$257.8
The award was delayed due to additional technical review of alternate battery proposals. Cost increase reflects final negotiated bid price.			
<i>Passenger Stations</i>			
ADA: Tremont & 149 Street - Grand Concourse Complex	Construction Award	Jun-20 \$161.8	Aug-20(A) \$160.4
The award was delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost decrease reflects favorable bids.			
Replace 11 Hydraulic Elevators / Various (New Item)	Construction Award	Mar-20 \$65.9	Dec-20(A) \$69.6
The award was delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost increase reflects project complexity and unfavorable bids.			
Replace 8 Escalators / Various (New Item)	Construction Award	Mar-20 \$62.0	Dec-20(A) \$57.7
The award was delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic. Cost decrease reflects favorable bids.			
ADA: 8 Stations (Pkg A) (New Item)	Construction Award	Sep-20 \$0.0	Dec-20(A) \$282.6
Awarded eight (8) ADA stations from Wave A bundles packaged separately in a new (Pkg A) bundle.			

Project	Commitment	Goal	Forecast
MTA Bus			
<i>MTA Bus Company</i>			
Depot Rehab - College Point	Construction Award	Mar-20 \$9.5	Oct-20(A) \$9.4
The award was delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.			
LIRR			
PSNY			
PNSY 33rd St Corridor-Phase 1A	Construction Award	Mar-20 \$24.0	May-20(A) \$24.0
This award is the first half of Phase I support costs.			
PNSY 33rd St Corridor-Phase 1B	Construction Award	Mar-20 \$44.4	Jul-20(A) \$42.5
A Memorandum of Understanding (MOU) was executed with NYS for its contribution to the project budget.			
PNSY 33rd St Corridor-Phase 1A (New Item)	Construction Award	Jun-20 \$24.0	Dec-20(A) \$24.0
This award is the balance of Phase I and II support costs. The award was delayed to reflect timing of Phase II award.			
PNSY 33rd St Corridor-Phase II (New Item)	Construction Award	Jun-20 \$380.0	Dec-20(A) \$379.0
The award was delayed to finalize legal terms and conditions.			
Power			
Substation Repl Package II-3P Construction (New Item)	Construction Award	Sep-20 \$18.0	Dec-20(A) \$17.4
The award was delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.			

Capital Projects – Major Commitments – December 2020 – Schedule Variances

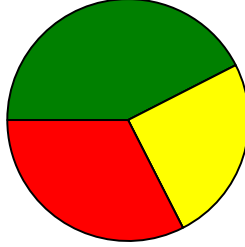
Project	Commitment	Goal	Actual
15 All-Agency Yellow Commitments (continued)			
MNR			
<i>Track and Structures</i>			
Harlem River Lift Bridge SuperStructure/Pier Repair	Construction Award	Mar-20 \$15.0	Aug-20(A) \$15.0
The award was delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.			
Harlem River Fender	Construction Award	Mar-20 \$6.0	Aug-20(A) \$6.0
The award was delayed due to the financial impact on the MTA as a result of the COVID-19 pandemic.			
Network Expansion			
<i>East Side Access</i>			
Harold Interlocking Catenary	Construction Award	Jun-20 \$63.9	Sep-20(A) \$90.4
The award was delayed due to an extended RFQ period to permit more time for proposers to assemble qualified teams and obtain more competitive bidders, the addition of contract modification to include the CH064 scope for the Mid-Day Storage Yard connections and additional track work, and COVID-19 related procurements pause.			

Capital Projects – Major Completions – December 2020

In 2020, agencies have a goal of \$5.4 billion in overall completions. 40 major completions are included, including 19 for NYCT, eight for the LIRR, seven for MNR, four for B&T, one for Network Expansion, and one for MTA PD.

Through December, agencies have completed \$4.3 billion including \$666 million of unanticipated completions versus a \$5.4 billion goal. Overall, 27 major completions were made within the year, and 13 were delayed beyond 2020. The delays are explained on the following pages; forecast dates for completions are shown by year and will be reforecast as part of the 2021 commitments and completions process.

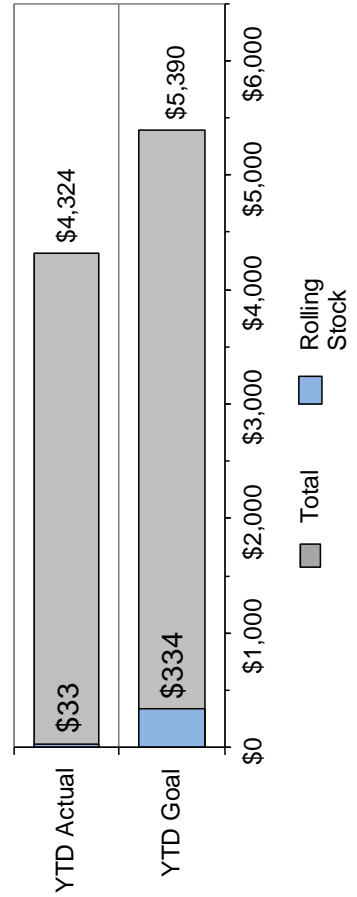
Year-to-Date Major Completions



Status	Description	Count	Percent	Change from Prior Month
GREEN	Completions made/forecast within Goal	17	43%	↑ 3
YELLOW	Completions delayed beyond Goal (already achieved)	10	25%	↑ 2
RED	Completions delayed beyond Goal (not yet achieved)	13	33%	↓ 1
Total		40	100%	↑ 4

Budget Analysis

2020 Annual Goal: \$5,390 (\$ in millions)
 2020 Actual: \$334 (80% of Annual Goal)



Year-to-Date Agency Breakdown

2020 Goals	Prior month variance
New York City Transit	GREEN YELLOW RED
7 GREEN, 8 YELLOW, 4 RED	+2 YELLOW, -2 RED
Long Island Rail Road	
5 GREEN, 3 RED	+1 GREEN
Metro-North Railroad	
2 GREEN, 5 RED	+1 GREEN, +1 RED
Bridges and Tunnels	
3 GREEN, 1 RED	+1 GREEN
Capital Construction Company	
1 RED	
MTA Bus Company	
MTA Police Department	
1 RED	

Capital Projects – Major Completions – December 2020 – Schedule Variances

Project	Completion	Goal	Forecast
13 All-Agency Red Completions (1 New Item)			
NYCT			
<i>Traction Power</i>			
New Substation & CBHs: Maspeth Av-Humboldt St / Canarsie	Construction	Nov-20 \$59.2	2021 \$59.5
Project completion slippage due to Ground & Test device modifications to address Con Edison comments/concerns and a subsequent High Tension (HT) energization delay.			
New Substation: Harrison Pl / Canarsie	Construction	Nov-20 \$52.1	2021 \$52.0
Project completion delayed due to Con Edison finalizing comments on Ground & Test device.			
<i>Passenger Stations</i>			
ADA: Gun Hill Rd / Dyre	Construction	Jul-20 \$54.5	2021 \$55.3
Project completion was delayed due to field conditions requiring design changes of Mezzanine Canopy structure and additional GOS. Project reached substantial completion in January 2021.			
<i>Staten Island Railway</i>			
SIR: Mainline & Clifton Yard Track and Switch Reconfiguration	Construction	Oct-20 \$63.0	2021 \$63.3
Project completion delayed due to scope change for additional two (2) miles of track.			
<hr/>			
<i>LIRR</i>			
<i>Shops and Yards</i>			
Diesel Locomotive Shop Improvements	Construction	May-20 \$89.8	2021 \$94.4
Project completion delayed due to the design and fabrication of a diesel fire pump and emergency generator as well as delays related to the COVID-19 pandemic.			
<i>Track</i>			
Massapequa Pocket Track	Construction	Feb-20 \$19.6	2022 \$19.6
The cutover of the signal systems was completed on schedule. Additional work remains to resurface and realign track before putting this asset into service. A schedule for addressing this work is under development.			
<i>Rolling Stock</i>			
Rolling Stock: M9 Procurement	Rolling Stock Purchase	May-20 \$300.8	2022 \$300.8
Project completion delayed due to issues in testing first cars and the production facility temporarily closing due to the COVID-19 pandemic.			

Capital Projects – Major Completions – December 2020 – Schedule Variances

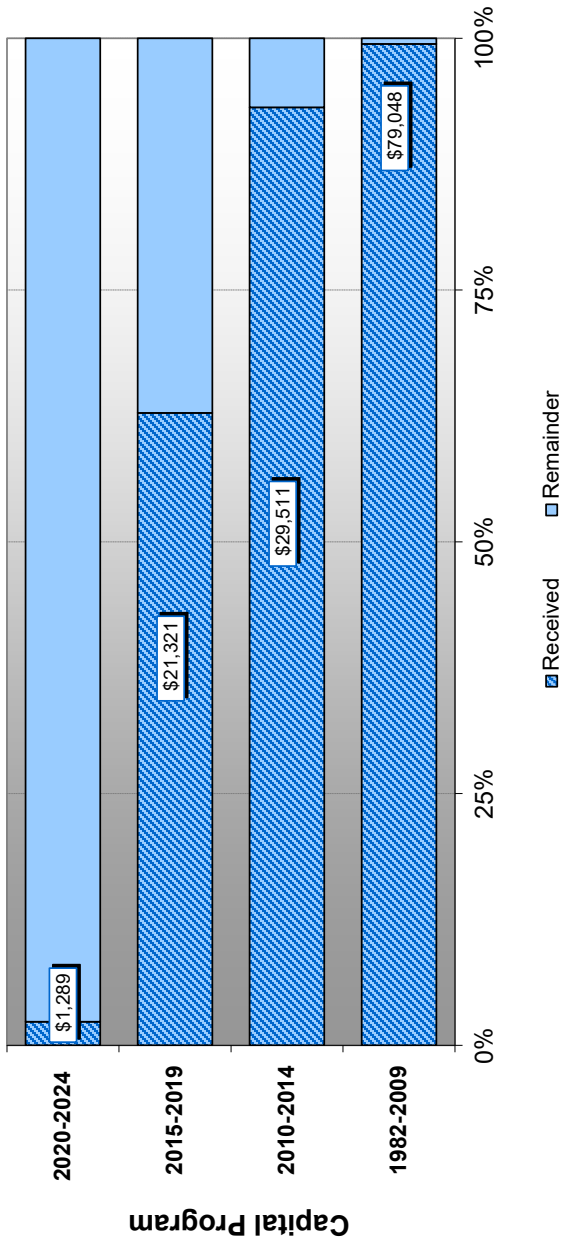
Project	Completion	Goal	Forecast
13 AI-Agency Red Completions (continued)			
MNR			
<i>Hurricane Sandy</i>			
Power Infrastructure Restoration - Substations	Construction	Jun-20 \$43.8	2021 \$43.8
Project completion delayed due to the recent power failure during the cutover/energization at Riverdale.			
Power			
Substation Bridge 23 - Construction	Construction	Jun-20 \$41.7	2021 \$41.7
Project completion delayed due to the COVID-19 pandemic.			
H & H Power (86th St. / 110th St.)	Construction	Sep-20 \$12.3	2021 \$12.3
Project completion delayed due to reduced F/A availability as a result of the COVID-19 pandemic. Coordination of existing manpower levels is being done to adequately support on-going projects.			
Harlem & Hudson Lines Power Improvements	Construction	Sep-20 \$42.5	2021 \$42.5
Project completion delayed due to the COVID-19 pandemic.			
Turnouts - Mainline/High Speed (New Item)			
	Construction	Dec-20 \$44.6	2021 \$44.6
Project completion delayed due to F/A availability.			
Network Expansion			
<i>East Side Access</i>			
GCT Caverns (CVM007)	Construction	Oct-20 \$708.3	2021 \$724.0
Project slippage due to delays in completion of ceiling installation in the East Upper Cavern as a result of COVID-19, which is impacting testing of HVAC/Automated Temperature Control (ATC) systems.			

Capital Projects – Major Completions – December 2020 – Schedule Variances – Actual Results Shaded

Project	Completion	Goal	Actual	Project	Completion	Goal	Forecast
10 All-Agency Yellow Completion (2 New Items)							
NYCT							
Buses							
Purchase 15 Articulated Electric Buses and Depot Chargers	Bus Purchase	Mar-20	Jun-20(A)	Sandy Mitigation: 9 Stations (9 Stns BK/Q Initiative)	Construction	May-20	Sep-20(A)
Project completion w as delayed due to the COVID-19 pandemic and the related reduced workforce at New Flyer Industries. All buses have been delivered.		\$32.9	\$32.9	Project completion w as delayed due to additional column base repairs.		\$33.1	\$33.1
Passenger Stations							
ADA: 86 Street / 4th Avenue	Construction	May-20	Aug-20(A)	Sandy Mitigation: 14 Fan Plants, LT - 4 Locations	Construction	May-20	Nov-20(A)
Project completion w as delayed due to the COVID-19 pandemic.		\$33.1	\$33.1	Project completion w as delayed due to fabrication and delivery delays related to the COVID-19 pandemic.		\$34.1	\$34.1
B&T							
ADA: Chambers Street / Nassau	Construction	Aug-20	Oct-20(A)	Skew back Retrofit at HH	Construction	Aug-20	Sep-20(A)
Project completion w as delayed due to shut down of off-site steel fabrication as a result of the COVID-19 pandemic. Cost decrease reflects latest estimates.		\$43.6	\$43.7	Project completion w as delayed due to unforeseen steel conditions requiring repair.		\$100.4	\$100.4
ADA: Bedford Park Boulevard / Concourse	Construction	Jun-20	Nov-20(A)	MTA Police Department <i>MTA PD</i>			
Project completion w as delayed due to the COVID-19 pandemic, the delivery of access nodes, elevator glass and metal enclosures, and the relocation of existing electrical equipment.		\$32.6	\$32.7	Staten Island District Office	Construction	Aug-20	Oct-20(A)
Project completion w as delayed due to the COVID-19 pandemic, the delivery of access nodes, elevator glass and metal enclosures, and the relocation of existing electrical equipment.		\$38.3	\$36.6	Project completion w as delayed due to Con Edison's inability to provide permanent power until October 2020.		\$13.5	\$13.5
ADA: Greenpoint Avenue / Crosstown (New Item)	Construction	Oct-20	Nov-20(A)				
Project completion w as delayed due to COVID-19 pandemic impact on fabrication and delivery of elevator glass activity which lies on critical path of this project. Cost decrease reflects latest estimates.		\$38.6	\$39.3				
ADA: Eastern Parkway-Brooklyn Museum / EPK (New Item)	Construction	Oct-20	Dec-20(A)				
Project completion w as delayed due to unanticipated field issues during final testing of the communications systems. Cost increase reflects latest estimates.		\$38.6	\$39.3				

Status of MTA Capital Program Funding

Capital Funding (December 2020)
\$ in millions



Capital Funding Detail (December 31, 2020)

\$ in millions

	Funding Plan		Receipts	
	Current	Thru Nov	This month	Received to date
2010-2014 Program				
Federal Formula, Flexible, Misc	\$5,844	\$5,839	\$ -	\$5,839
Federal High Speed Rail	173	173	-	173
Federal New Start	1,271	1,257	-	1,257
Federal Security	89	89	-	89
Federal RRIIF Loan	-	-	-	-
City Capital Funds	719	608	-	608
State Assistance	770	770	-	770
MTA Bus Federal and City Match	132	112	-	112
MTA Bonds (Payroll Mobility Tax)	11,625	10,450	-	10,450
Other (Including Operating to Capital)**	1,284	1,273	-	1,273
B&T Bonds	2,175	2,019	-	2,019
Hurricane Sandy Recovery				
Insurance Proceeds/Federal Reimbursement	6,697	6,697	-	6,697
PAYGO	18	18	-	18
Sandy Recovery MTA Bonds	659	182	-	182
Sandy Recovery B&T Bonds	230	23	-	23
Total	31,685	29,511	-	29,511

	Funding Plan		Receipts	
	Current	Thru Nov	This month	Received to date
2015-2019 Program				
Federal Formula, Flexible, Misc	\$6,704	\$4,989	\$ -	\$4,989
Federal High Speed Rail	\$122	\$122	-	\$122
Federal Core Capacity	100	-	-	-
Federal New Start	500	-	-	-
Federal Security	19	15	-	15
State Assistance	9,064	3,573	-	3,573
City Capital Funds	2,667	1,235	-	1,235
MTA Bonds	8,474	7,818	-	7,818
Asset Sales/Leases	959	306	9	315
Pay-as-you-go (PAYGO)**	2,145	1,572	-	1,572
Other	250	38	-	38
B&T Bonds & PAYGO/Asset Sale	2,942	1,644	-	1,644
Total	33,946	21,313	9	21,321

	Funding Plan		Receipts	
	Current	Thru Nov	This month	Received to date
2020-2024 Program				
Capital from Central Business District Tolling	\$15,000	\$ -	\$ -	\$ -
Capital from New Revenue Sources	10,000	-	-	-
MTA Bonds and PAYGO	9,782	80	-	80
Federal Formula	7,500	1,119	-	1,119
State of New York	3,000	-	-	-
City of New York	3,000	80	-	80
Federal New Start (SAS Ph2)	2,905	-	-	-
Federal Flexible	275	-	-	-
Federal Security	10	10	-	10
B&T Bonds (Self-Funded)	3,327	1	-	1
Total	54,799	1,289	-	1,289