



Metropolitan Transportation Authority

Capital Program Oversight Committee Meeting

November 2021

Committee Members

J. Lieber, Acting Chair & CEO

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

Monday, 11/15/2021

2:00 - 3:00 PM ET

1. PUBLIC COMMENTS PERIOD

2. APPROVAL OF MINUTES OCTOBER 18, 2021

CPOC Committee Minutes - Page 3

3. COMMITTEE WORK PLAN 2021 - 2022

CPOC Committee Work Plan - Page 6

4. MTA C&D CAPITAL PROGRAM UPDATE

Progress Report on Signals and Train Control - Page 8

IEC Project Review on Signals and Train Control - Page 12

IEC Traffic Light Report (TLR) Summary of Signals & Train Control Business Unit - Page 32

5. UPDATE ON SMALL BUSINESS DEVELOPMENT PROGRAM

Small Business Development Program - Page 33

6. UPDATE M/WBE, DBE, and SDVOB PARTICIPATION on CAPITAL PROJECTS

M/WBE, DBE, and SDVOB Participation - Page 60

7. CAPITAL PROGRAM STATUS

Commitments, Completions, and Funding Report - Page 62

MINUTES OF MEETING
MTA CAPITAL PROGRAM OVERSIGHT COMMITTEE
October 18, 2021
New York, New York
2:00 P.M.

CPOC members present in person:

Hon. Andrew Albert
Hon. Jamey Barbas
Hon. Norman Brown
Hon. Randolph Glucksman
Hon. David Jones
Hon. Kevin Law
Hon. Robert Linn
Hon. Neal Zuckerman

CPOC members not present:

Hon. Michael Fleischer
Hon. Rhonda Herman
Hon. Janno Lieber
Hon. David Mack
Hon. John Samuelsen
Hon. Vincent Tessitore, Jr.

MTA staff present:

David Cannon
Evan Eisland
Robert Laga
John McCarthy
Tim Mulligan
Mark Roche
Tom Savio

Independent Engineering Consultant staff present:

Joe Devito

* * *

Vice Chairman Zuckerman called the October 18, 2021 meeting of the Capital Program Oversight Committee to order at 1:54 P.M.

Public Comments Period

There were two public speakers in the public comments portion of the meeting: Jason Anthony; and Kara Gurl.

Meeting Minutes

The minutes to the meeting held on July 19, 2021 and the September 13, 2021 were approved.

Committee Work Plan

There were no changes to the CPOC Work Plan.

C&D Capital Program Update

Mr. Roche provided a brief update on several projects, including: MNR's Port Jarvis Station; Elmont Station and Carle Place Station, which are elements of the LIRR Mainline Expansion Project; fender system renovation at the Marine Parkway-Gil Hodges Memorial Bridge, as well as work at the Throgs Neck Bridge (which led to a discussion of domestic fabrication of orthotropic deck panels); and recovery efforts on MNR's Hudson Line stemming from Hurricane Ida in early September. Mr. Laga provided an overview of C&D's Infrastructure Business Unit, which currently includes 105 projects in construction for a total value of \$3.7B. He then reported on the following major projects: 207th Street Yard and Sewer Project; Coney Island Yard; Clifton Shop; and the Digital Bus Radio Communication System (which led to a discussion of what actions, if any, the Committee might take regarding contractor performance on the project). Mr. Mulligan gave a brief overview of funding for Hurricane Sandy-related repair and resiliency projects. In its Project Review of the Clifton Shop, the IEC reported that the project is nearing completion and remains on budget; however, with respect to schedule, the Beneficial Use date has moved from September to December 2021 due to a delay by a third-party utility, contractor manpower shortages and late contractor delivery of fire alarm system equipment. The IEC then noted that there is minimal operational impact associated with this delay, given that the existing shop has remained in operation. The IEC then reported on the 207th St. Yard and Sewer Replacement projects, which the IEC noted are being coordinated by one Project Management Team to maximize efficiency. With respect to the 207th Street Yard project itself, the IEC reported that it continues to progress well, pointing out that at 63% complete, there has been no change to the original Substantial Completion date of November 2023, nor has there been an increase to the Original Estimate at Completion (EAC) of \$633M. As part of a broad signal project schedule/resource analysis undertaken by C&D, the 207th St. Yard project, which includes a significant amount of signal work, was highlighted as a priority and signal equipment delivery was identified as having significant risk. According to the IEC, C&D is mitigating this risk by assigning a Project Controls Manager at the supplier's factory to monitor signal equipment production, and to ensure timely delivery and prompt responses to issues if they arise. With respect to the 207th St. Sewer Replacement contract, which is 21% complete, the IEC noted that due to third-party utility delays, the contractor's latest schedule shows a 9-month delay to Substantial Completion, now set for November 2024; in addition, the project EAC has risen from \$152M to \$170M. The IEC then offered the opinion that performance of third-party utilities will continue to impact the planned completion of this project. In its Project Review of the Coney Island Yard Complex, the IEC reported that the project, which is 65% complete, is progressing well. However, since last reported at CPOC, the budget has increased by \$6M and Substantial Completion has been adjusted by three months to replace a deteriorated Traction Power Circuit Breaker House. Notwithstanding this, it is the IEC's opinion that the Project Team has worked aggressively to maintain the schedule and budget, while coordinating work in an operating yard. In its final Project Review -- on the Digital Bus Radio System -- the IEC finds that this project continues to experience delays and cost overruns. The IEC noted that the contractor's latest schedule update, while not accepted by C&D, shows an 18-month delay to completion to September 2023. Further, as a result of significant issues with bus equipment installations, as well as several base station installations, the IEC is forecasting that the project may not be complete before December 2023. In addition, in its analysis of remaining work, change orders and potential claims, the IEC has concluded that there could be an additional \$35M above the latest project estimate. To meet the current schedule, 250 bus installations per month must be completed, yet currently there are approximately 15 to 20 trained contractor installation staff who must perform this work in multiple bus depots on multiple shifts. The IEC recommends that the project ensures that the contractor augments the current staff with sufficient qualified persons to complete the remaining work according to the schedule. Finally, the IEC noted that while MTA and the contractor have been resolving many technical and operational issues found during the functional testing of the 13 buses equipped with the new digital bus radio system, the IEC believes the project would benefit from in-service testing of additional buses and recommends that more buses be equipped and placed in service prior to the start of the Pilot in January 2022. Further details of the presentations, and Committee Members' comments and questions with respect thereto, are included in the video recording of the meeting maintained in MTA's records.

MTA Capital Program Commitments & Completions and Funding

Mr. Mulligan reported that through September, agencies have achieved commitments of \$2.3B versus a goal of \$3.9B. The current projection is to achieve 86% of that level, i.e., \$5.4B, by the end of the year.

Also, there may be additional unplanned commitments that will mitigate against this shortfall. Mr. Mulligan then reported that the 2021 goal for completions is \$7.2B, including 51 major project completions. Through September agencies have completed \$2.7B versus a \$4.9B goal. The current projection for the end of the year is to achieve 85% of that total target. Further details of the presentation, and Committee Members' comments and questions with respect thereto, are included in the video recording of the meeting maintained in MTA's records.

Adjournment

Upon motion duly made and seconded, Vice Chairman Zuckerman adjourned the October 18, 2021 meeting of the MTA Capital Program Oversight Committee at 2:54 PM.

Respectfully submitted,
Michael Jew-Gerals
Office of Construction Oversight



2021- 2022 CPOC Committee Work Plan

I. Recurring Agenda Items

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

II. Specific Agenda Items

December

Overall Capital Program

- Integrated Megaprojects

OMNY
Security Projects
Quarterly Traffic Light Report

January

Overall Capital Program

- Stations

February

Overall Capital Program

- Railroads

March

Overall Capital Program

- B&T
- Infrastructure

Quarterly Traffic Light Report

April

Overall Capital Program

- Signals and Train Control

Minority, Women and Disadvantaged Business Participation

May

Overall Capital Program

- Integrated Megaprojects

June

Overall Capital Program

Rolling Stock

OMNY

Security Projects

Quarterly Traffic Light Report

July

Overall Capital Program

- Stations

September

Overall Capital Program

- Railroads

Quarterly Traffic Light Report

October

Overall Capital Program

- Infrastructure

November

Overall Capital Program

- Signals and Train Control

Minority, Women and Disadvantaged Business Participation

Small Business Development Program

MTA Board & Capital Program Committee Update Signals and Train Control Projects November 2021

MTA Construction & Development’s last report to the Capital Oversight Program Committee on Signals and Train Control Projects was in May 2021. This document summarizes the progress on some of the most significant projects, primarily CBTC projects, and identifies the primary factors influencing the projects’ performance.

Since being taken over by C&D, the four Signals & Train Controls projects presented have been reviewed by C&D with consequent changes made to the management personnel and organization. Where possible, measures have been put in place to mitigate past performance. These measures, however, are unlikely to be sufficient to bring all projects back within their original budget and schedule.

One major area of improvement since the last C&D report on Signals & Train Control has been the transparency of equipment fabrication and delivery provided by Siemens, who is a major player in each of the three CBTC projects underway.

Eighth Avenue

CBTC

C48006
 S48013-1
 S48013-2
 S87055-1

The project will provide Communication Based Train Control (CBTC) from 59 St in Manhattan through High St in Brooklyn. The program also includes providing CBTC equipment to the existing R-179 vehicles and CBTC equipment to support the manufacturing of the R-211 vehicles.

PROJECT STATUS	Original	Revised	Forecast
Substantial Completion	January 2025	January 2025	January 2025
Budget	\$735M	\$760*	\$760 M

The project is approximately 40% complete

* Revised to include additional scope for Flushing signals removal

This project builds on the technology introduced in previous CBTC projects, notably the CBTC interoperability achieved on the QBLW line, and for the first time introduced Axle Counters in lieu of Insulated Joints/Track Circuits to reduce overall project cost and schedule.

The project is approximately 40% complete and is on schedule and on budget. The prime contractor (LK Comstock) continues to plan and perform well and is working diligently with the C&D project team to resolve project issues as they arise.

Current activities include:

- Racks are being installed at the two relay rooms at 34 St and 42 St to house the equipment necessary for the interlockings
- Installing wayside equipment, including radio equipment, fiber optic cable and the messenger wire that the cable hangs on, and axle counter heads

- Testing the signal control technology on both train car types to run on the Eighth Ave line
- Equipment design for the R179 cars is approved and installed on the first two vehicles for testing. Prototype equipment for R211 cars is being tested

Factors that may affect future project performance:

- Schedule for the manufacturing of equipment by Siemens, and the racks to support CBTC equipment and additional DCS equipment
- On-vehicle equipment testing and installation – R179 and R211 cars are going through post installation testing in advance of production
- Continuing development of CBTC software from the QBL CBTC project. The Eighth Av line has three services (A, C, E) and carries more than 710,000 daily riders (pre-COVID).

**Queens Boulevard
 Line West CBTC
 (QBL-W)**

S48004-1
 S48004-2
 S48005

The project will provide CBTC from Union Tpke in Queens through 50 St/8 Ave on the 8th Avenue line and 21 St/Queensbridge on the 6th Avenue line. The project also includes equipping 309 R160 units with CBTC equipment and deploying the B-Division ATS system. QBL-W is the first interoperable CBTC project implemented for NYCT, allowing trains with CBTC from different suppliers (Siemens and Thales) to run on the same line at the same time. Three separate contracts were awarded to deliver the project.

PROJECT STATUS	Original	Forecast
In Service CBTC	March 2021	Q4 2021
Budget	\$663.1 M	\$729.2 M
LK Comstock	75-80% complete	
(Installer) Siemens	90-95% complete	
Thales	83% complete	

Project has already placed CBTC into service on three of the four sections along the line, with the last section being put in operation at the end of 2021.

305 of the 309 train units have been upgraded to run in CBTC mode. The team continues performance monitoring to assess fleet stability which has not yet been fully achieved. Since the last report to CPOC, multiple software upgrades have been installed and are being tested to improve reliability performance.

Further updates to software will be necessary in 2021, once full CBTC is operational, to achieve the specified performance levels.

As reported in November 2020 overall project costs will exceed the budget primarily due to the (1) late award of the LK Comstock installer contract in 2017; (2) lack of coordination between other contracts; (3) late equipment supply; and (4) insufficient initial allocation of FA and TAL funds. C&D will report on final cost projection once the effectiveness of the current software

updates has been determined.

Culver Line CBTC

5-47009
 S-32398
 S-32399
 M-44431

Culver Line Signal Modernization will improve reliability and resiliency of service between W8 St and Church Ave in Brooklyn by modernizing signals, upgrading interlocking systems and equipment facilities, and making needed station improvements. The new signaling system will employ Communication-Based Train Control (CBTC), and add three new signal facilities at Ditmas Ave, Bay Parkway and Avenue X. This project will improve service along 4.7 route miles of subway track, for 12 subway stations.

Unlike the QBL line, which includes separate contracts for suppliers and installers, this project adopted a single combined contract for the installer and supplier. Tutor Perini was selected in 2019 as the primary contractor and installer, with Siemens as their CBTC supplier for signaling and CBTC technology.

PROJECT STATUS	Original	Forecast
Substantial Completion	Aug 2022	Jun 2023
Budget	\$482 M	\$482 M
The project is approximately 67% complete		

Notable activities include:

- Energization of the new relay building at Ave X was completed
- Strengthening of the lower-level structure at Church Street was completed
- Ongoing installation of relay room equipment at Ave X, Ditmas and CIR 470
- Signal cable pull/installation (98% complete, Avenue X Interlocking)
- Wayside equipment installation
- Special trackwork installation at Avenue X is scheduled for Nov. 2021

Substantial completion of the project is forecast to be late by a minimum of nine months because of delay in the delivery of equipment and materials caused by COVID. Other concurrent delay has been associated with the deterioration of the line structures resulting in substantial modifications to the ties supporting the elevated special trackwork to meet alignment tolerances.

ISIM-B Module3

W32789
 W32801
 T7080614

The program is to provide the systems and subsystems to build out the new South Wall in the centralized Rail Control Center, which includes a Data Warehouse, Large Scale Display and 41 QBL workstations. The project also includes health status indications for signal devices for the MOW/Signals Central Monitoring System. When completed the program will provide the ability to perform preventive and corrective maintenance.

While the project remains on budget and schedule it has been substantially descoped as some of NYCT needs have changed significantly in the three years since the project was originally designed and contracted in 2018.

PROJECT STATUS	Original	Forecast
Substantial Completion	Dec 2022	Dec 2022
Budget	\$154 M	\$154 M
The project is approximately 61% complete		

The adjustments include:

- Cancellation of the Data Warehouse with the scope of work taken over as an internal initiative by MTA-IT
- Deletion of the AIM processor for information management to avoid duplication of similar command and control software
- Modification to a current Siemens contract to expand the ATS-B command and control management system to incorporate the Module 3 requirements. This is an existing software that is widely used across B-Division

The project team is working through the architecture and commercial details of these changes and will report back to CPOC at a future meeting. Contract negotiations to capture the associated cost savings are in progress. Further cost savings to maintenance and operating costs are inherent.

Notable Activities include:

- Field indications are continuing with 17 of 37 locations completed
- Large screen display is undergoing testing with RCC integration commencing in early 2022
- 41 new consoles are in place in the RCC

November 2021 CPOC Independent Engineering Consultant Project Review

Communications-Based Train Control Projects

- CBTC 8th Avenue
- CBTC Queens Blvd. Line
- CBTC Culver

MTA C&D Signals & Train Control Business Unit



McKISSACK

MTA Independent Engineering Consultant

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

**CBTC 8th Avenue - Design, Furnish, &
Install Program**



McKISSACK
MTA Independent Engineering Consultant

CBTC 8th Avenue

Scope

The project scope consists of supply and installation of a Communications-Based Train Control (CBTC) system on the 8th Ave Line from south of the 59th Street interlockings in Manhattan to High Street Station in Brooklyn. The new CBTC system ties into the Queens Boulevard Line (QBL).

This contract was awarded to LK Comstock (LKC) in January 2020, with an original duration of 60 months (to January 2025) and a program budget of \$734.9M.

This project includes replacement of the 30th Street and 42nd Street North interlockings with processor-based (solid state) signals, and the decommissioning of the 42nd Street South Interlocking. It also includes the design, supply, and installation of an Axle Counter System which will replace the traditional track circuits.

Also, the project is responsible for the supply and installation of carborne systems for the R179 and R211 subway cars.



MTA Independent Engineering Consultant

CBTC 8th Avenue

Budget Review

- The current project budget and Estimate at Completion (EAC) is \$760M an increase of \$25M from our last report due to scope being moved to this project for the Flushing Line signal removal and track restoration work.
- Based on our review of project expenditures, contingency, reserve, soft costs, change orders, and risks, the IEC agrees with C&D's Budget and EAC.



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CBTC 8th Avenue

Schedule

- ❑ The project, which is 40% complete, was awarded in January 2020 with a substantial completion date of January 2025.
- ❑ As last reported, the project had experienced a 110-day delay due to late delivery of Data Communication System (DCS) equipment from Siemens. The Contractor has re-sequenced activities to mitigate this delay.
 - ❑ The IEC remains concerned that this mitigation is highly dependent upon NYCT approval of the Contractor's request for General Orders (GOs).
- ❑ The IEC finds the following items are critical to the projects schedule:
 - ❑ The 42nd Street and 34th Street interlockings to be in beneficial use by June and July 2023 respectively,
 - ❑ CBTC infrastructure needs to be ready for CBTC in-service testing in February 2024.
 - ❑ The R211 fleet is a critical component for this testing.

CBTC 8th Avenue

Observations

- The project has effectively managed delivery of equipment from various suppliers and mitigated the delays by Siemens.
- Several AWOs were issued to the contractor to address updated requirements and design issues with no schedule impact.

Risks

- GO availability.
- First use and Integration of axle counters into Solid State Interlockings (SSI) and CBTC operation at NYCT.
- Testing and commissioning of unproven interoperable CBTC components from suppliers.
- Delayed testing of on-board CBTC systems on the R211 and R179 trains.
- Limited flaggers to support multiple contractor crews at multiple locations under flagging conditions.

The IEC finds the project is making every effort to mitigate these risks.

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

**Communications Based Train Control
(CBTC) Queens Blvd. Line (QBL)-Design,
Furnish & Install**



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CBTC QBL

Project Scope

The QBL CBTC project will provide design, material, and labor for a complete CBTC signal system overlay on the Queens Boulevard Line from north of Union Turnpike to south of 47-50th Street on the 6th Avenue Line (F) and to 50th Street on the 8th Avenue Line (E). Centralized traffic control is provided by an Automatic Train Supervision System (ATS) at designated locations and the Rail Control Center (RCC).

To implement the project, three contracts were awarded in 2015-2016. Phase 1 is the design, supply, test, and commission of the CBTC system and Phase 2 is supply and installation of the Auxiliary Wayside System (AWS) and CBTC Wayside systems. Siemens and Thales were awarded Phase 1 and, L.K. Comstock (LKC) was awarded Phase 2.

The project will also validate the Interface and Interoperability Specifications in revenue service operation.



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CBTC QBL

Schedule

- The current forecast by C&D indicates that all in-services for the design & furnish contracts will be completed by December 2021. This represents a 3-month additional delay from the last report to the Board. Substantial Completion (SC) will be achieved after all software and hardware updates are completed and deployed.
- In our opinion, completion of in-services may extend to the 1st Quarter of 2022, due to the need for additional time to resolve software, communication, and interoperability issues. SC is likely to extend by an additional 3 months following the completion of in-services.
- LKC forecasts completion of asbestos mitigation and legacy signal removals by September 2022 versus the contractual date of July 2022, a 2-month delay. To mitigate this delay, the contractor has re-sequenced the work allowing a reduction in weekend GOs.



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CBTC QBL

Schedule Risks

- The following are the top schedule risks:
 - Issues arising out of each cutover could further delay remaining cutovers.
 - Outstanding software issues that are currently affecting system stability could further delay SC.
 - Implementation of remote uploading of database by Siemens continues to be delayed.
 - Siemens and Thales are planning additional software releases in Q1 2022, which may require rework & testing.
 - The Contractors may require more additional software releases than currently planned.
 - Resolution of the Zone Controller (ZC) capacity in the Thales section.



CBTC QBL

Budget

- The project budget is \$663M. The current project Estimate at Completion (EAC) now stands at \$729M, a shortfall of \$67M which is an increase of \$23M from the last CPOC report (April 2021), due to increased TA Labor, Force Account, and Soft Costs.
- The IEC has reviewed expenditures to date, cost of remaining work, change orders, and potential claims and believes the current EAC of \$729M will be sufficient to complete the project as planned.
 - Should schedule risks identified by the IEC (see page 4 of this report) be realized, there may be additional cost impact.



CBTC-QBL

IEC Observations

- Since the last report to the Board, three sub-sections were placed into CBTC operation.
 - As a result of issues encountered, C&D had paused (a decision which the IEC supported) until the contractors resolved system performance issues through new software releases.
 - Another sub-section was placed into CBTC operation on 11/6/2021 and early results are encouraging.
 - Future software releases are planned to resolve additional issues.
- Thales deployed a new Zone Controller (ZC) software in the Intermediate Section/Section 1, which has improved system performance.
 - Project Team has requested Thales to increase their ZC capacity.



CBTC-QBL

IEC Observations (Cont'd)

- Siemens continues to have issues with the remote database upload function to the CC. This is an important project deliverable.
 - Siemens has not yet identified all the root cause of this issue.
 - The project is using a manual upload process to progress the in-services until this issue is resolved.
 - This issue is also critical to Service Delivery to ensure that all trains have been uploaded with the latest database prior to entering a new section.
- The IEC observed that multiple software releases were required to address defects before successful field deployment. Process improvements are needed at the Suppliers' factory testing facility and NYCT Integrated Test Facility (ITF) prior to field testing, to minimize adverse impacts.

CBTC-QBL

Concerns

- The IEC is concerned that the Interoperability and Interface Specifications have not been fully validated in passenger service.
 - Interoperability between the Thales equipped trains and the Siemens Zone Controllers has not been sufficiently tested operationally.
 - Testing of coupling between Siemens and Thales trains uncovered one issue requiring implementation of a Thales solution.
 - Validation of performance of Thales trains in passenger service is critical to the 8th Avenue CBTC program and future CBTC projects.
 - Thales is equipping the R-211 fleet with on-board CBTC computers.



CBTC-QBL

Recommendation

- The Project Team should work closely with Service Delivery to define operational metrics that must be met for system stability.
- Upon achieving stability, the Project Team should ensure that the CBTC suppliers meet the reliability/availability requirements of the contract.

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

**CBTC Culver - Design, Furnish, & Install
Program**



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CBTC Culver

Project Scope

The contract was awarded to Tutor Perini in February 2019, with a duration of 42 months, to provide the Culver Line with a Communication-Based Train Control (CBTC) system.

The project also includes:

- The construction of 3 new relay rooms at Avenue X, Ditmas Avenue, and Bay Parkway.
- Modernization and commissioning of the interlockings associated with these relay rooms.
- The support and replacement of track work and certain portions of Church Avenue, Avenue X, and Ditmas and a CBTC systems overlay on existing signals installed between 8th Avenue and Church Avenue, on the Culver Line.



MTA Independent Engineering Consultant

CBTC Culver

Schedule Review

- As reported in April 2021, poor project planning and coordination by the Contractor resulted in delay in a 7-month delay in the delivery of signal cable. The project has been delayed by an additional 3 months due to the Contractor's late installation of signal cable. This results in the SC moving from August 2022 to June 2023.
- The IEC forecasts an additional 3-month delay beyond the current SC date due to further impact by the contractor's inability to complete planned construction and testing activities.

CBTC Culver

Budget Review

- At 50% complete, the project budget and Estimate at Completion (EAC) is \$482M and remains the same as the original budget.
- The IEC forecasts an increase in Engineering Force Account and TA Labor due to the impact of the project delay, which could be as much as \$5M over plan; however, the project remains within budget.



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CBTC Culver

Observations

- The Project Team has taken action to prevent further impact of the signal cable and AWS deliveries on the project schedule.
- C&D and NYCT have found a solution that eliminates the necessity to carry out planned structure and track replacement work at interlockings, thereby minimizing cost risk.

Project Risks

- Technical issues currently affecting CBTC QBL System may impact CBTC Culver.
 - Resolution of carborne controller, radio communication between train and wayside, and other technical issues is required for the Culver CBTC Project to commence testing in July 2022.
- A shortage at Siemens of qualified CBTC engineering resources to complete the project on time.
 - Culver project is relying on Siemens for the design and supply of wayside CBTC equipment, Auxiliary Wayside System (AWS), and Data Communication System (DCS).

Signals & Train Control Business Unit Summary

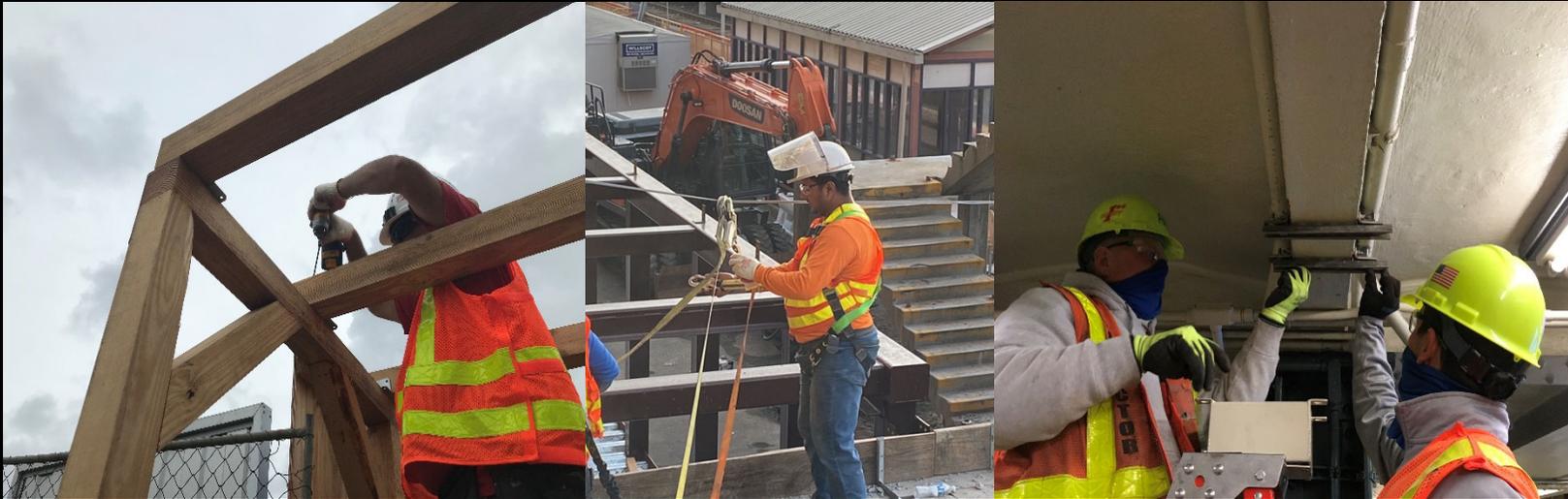
- In the September 2021 Traffic Light Report (TLR), the IEC reviewed 33 Signals and Train Control projects* for Cost and Schedule Performance.
 - 29 of projects were Green.
 - 3 projects were Previously Red, with no new variances this quarter.
 - 1 project was Red.
- The overall Signals and Train Control Business Unit in the TLR comprised 29 projects in construction, 1 in procurement and 3 in design.
- One Signals and Train Control project triggered a Key Performance Indicator (KPI) this quarter for schedule slippage. The Red project, ISIM-B Module 3A Rail Control Center Build Out, is part of a larger comprehensive Signals hardware and software upgrade and integration project which is separately monitored by the IEC and is reported on by C&D in this month's CPOC book.
- The root causes for the current ISIM-B Module 3A schedule variance are related to existing field conditions, actions by third party external stakeholders and limited work site access. After reviewing the problems and proposed mitigations, the IEC substantially agrees with the actions and mitigations undertaken by C&D to address the project root causes.



Projects may also be identified as project tasks

MTA Independent Engineering Consultant

Annual Update MTA Small Business Development Program



Program Management / Execution



Small Business Development Program (SBDP)

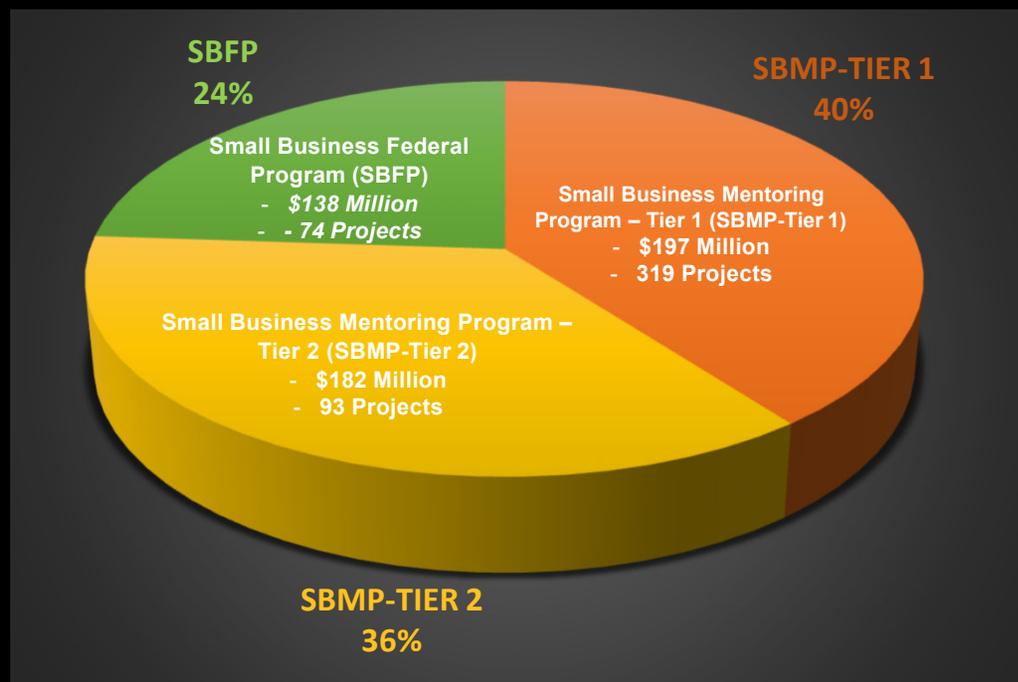
SBDP Program is composed of three tiers

- Small Business Mentoring Program – Tier 1 (SBMP-Tier 1)
- Small Business Mentoring Program – Tier 2 (SBMP-Tier 2)
- Small Business Federal Program (SBFP)
- SBDP Program created in 2010 and extended until 2029
- NY State and Federal funded prime contracts of up to \$3M
- Prequalified firms can participate in each program tier for up to 4 years
- Owner Controlled Insurance Program (OCIP)
- Retail a Construction manager mentor firm

SBDP Contract Awards from the Inception

Total SBDP Awards (\$)
\$516 Million

Estimated 12,386 Jobs Created



Total SBDP Awards (#)
486



Program Year 12 (01/2021 - 12/2021) Awards Vs Goals

Program Year 12 Awards		
Program	PY 12 Goal	In-bidding/ Awarded
Tier 1	\$28M	\$16.3M
Tier 2	\$21M	\$21.8M
Federal Program	\$21M	\$24.5M
Total	\$70M	\$62.5M

Bids – Engineer’s Estimates = \$2.5 million



Mentor Construction Manager (MCM) Functions

- **Pre-Qualification**
 - Review applications including trade reference and background check, and firms' financial statements
 - Coordinate/schedule project bidding activities, and create bid lists from prequalified contractors' pool
- **Pre-Award**
 - Perform constructability review of the bid packages
 - Participate in pre-bid meetings and bid evaluation/award process.
 - Assist agencies in awarding contracts (Goal = 22 business days)
- **Post Award (SBMP-Tier 1 projects)**
 - Conduct project meetings, manage subcontractors' approval process, Owner Controlled Insurance Program enrollment.
 - Assist Mentor contractor with:
 - product submittals, safety and quality work plans (Goal = approval within 10 business days)
 - review of Requests for Information during construction (Goal = response within 5 business days)
 - on-site quality and safety compliance (loss time in 2021 = 0 hours)
 - attaining approval of progress payments (Goal = 10 business days)
 - completion of punch list work and conduct final acceptance inspections (Goal = 20 business days)

SBMP-Tier 1 – Bridges & Tunnels (B&T)

Randall's Island Salt Dome Repairs

Reis/Akar Renovation, Inc.



SBMP-Tier 1 – Long Island Railroad (LIRR) Hillside Facility Emergency Generator Replacement

PE and Consultants, New York LLC



SBMP-Tier 2 – New York City Transit Department of Buses (NYCT DOB)

Replacement of Bus Washers at Jackie Gleason Bus Depot in the Borough of Brooklyn

S & P Construction Management Inc.



SBMP-Tier 2 – New York City Transit (NYCT)

Roof & Enclosure Rehabilitation at Washington Heights Substation

Saheet Construction Corp.



SBFP – Metro North Railroad (MNR)

Beacon and Cold Spring Station Parking Facility Improvements

BLH Construction Inc.



Business Development



Return on Investment Success of SBDP Graduates

MTA Contracts Outside of SBDP (Millions)	# of Projects	Amount
Masterpiece U.S. Inc.	3	\$25.3M
Monpat Construction, Inc.	2	\$16.2M
Minhas Construction Corp.	2	\$72.7M
Voltamp Electrical Contractors	6	\$62.5M
Zion Contracting, LLC	5	\$33.2M
Aurora Electric, LLC	3	\$19.2M
Venus Group, Inc.	3	\$45.7M
Zaman Construction Corp.	2	\$32.4M
Totals	26	\$307.2M



SBDP Firms Distribution by Location

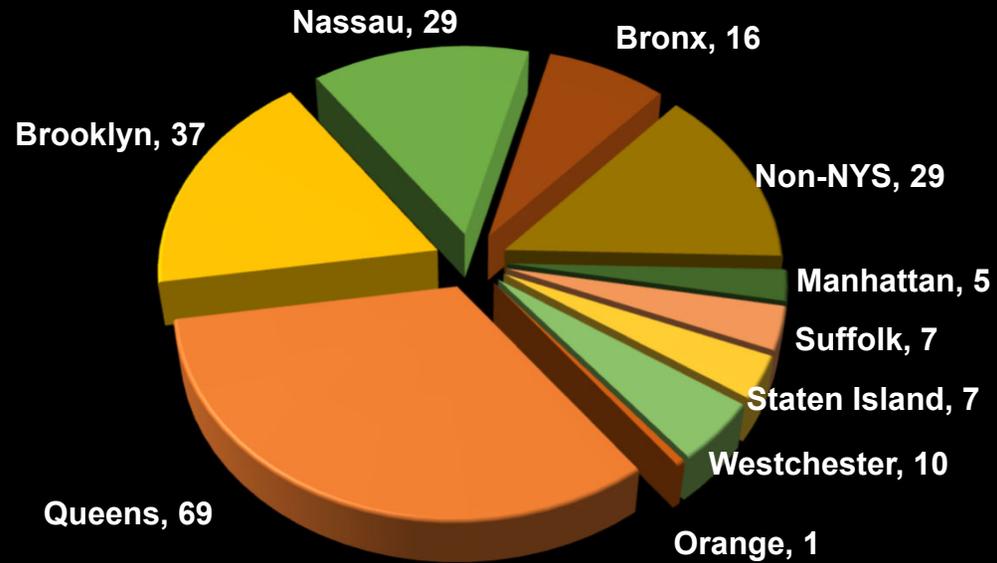
210 Prequalified Firms (as of September 30, 2021)

Small Business
Mentoring Program
All Tiers

Certification *

MBE	125
WBE	22
DBE	53
SDVOB	11
Non-Certified	71

* Firms may have
multiple certifications



MTA Small Business Development Program (SBDP)

SBDP Loan Program

134 Loans Approved

18.6 Million Dollars

Maximum Loan Available

Tier 1 - up to \$150,000

SBFP and Tier 2 - up to \$900,000

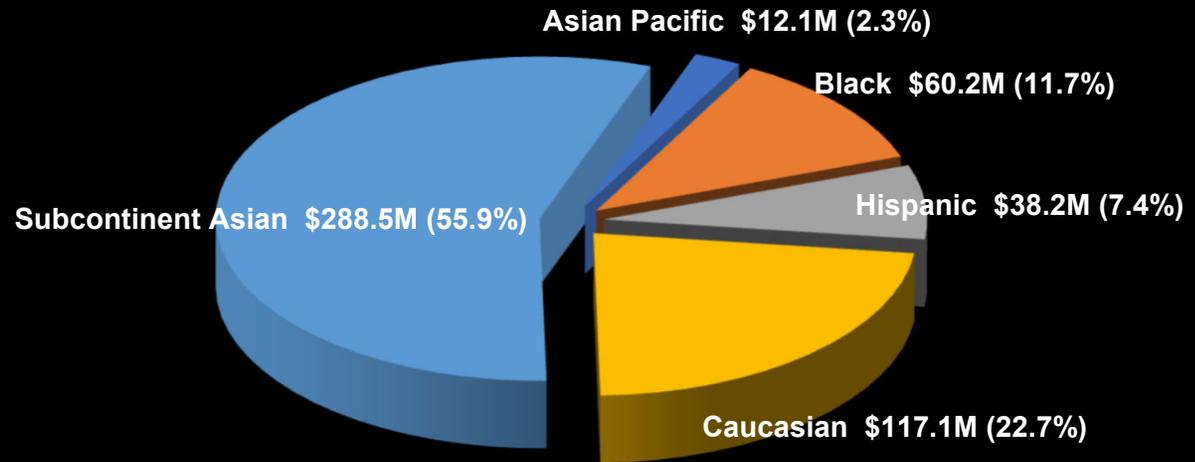


SBDP Firms Distribution By Ethnic Group

Total SBDP Contract Awards by Ethnic Categories

Category	Awards
Subcontinent Asian	\$288.5M
Caucasian	\$117.1M
Black	\$ 60.2M
Hispanic	\$ 38.2M
Asian Pacific	\$ 12.1M
Total SBDP Awards	\$516.1M

(Awards in Millions of Dollars)



SBDP Training Program

**As of
FALL 2021,
909 firms
participated
in the training
program**

18-Session Technical & Business Development Classroom Training

- Doing Business with the MTA and Prime Contractors
- Prevailing Wages / Project Management
- Estimating and Bidding Strategies at the MTA
- Project Scheduling at the MTA
- Cash Flow and Financial Management
- Marketing Your Business to the NY Construction Industry
- Developing a Profitable Business in the MTA Region
- Business Communications
- Safety & Quality Planning at the MTA
- Requisition and Change Order Process
- Construction Law and Contract Review
- How to Acquire Surety Bonding / Access to Capital
- Navigating MTA Contracts and MWBE Compliance
- Strategic Business Development
- How to be a Prime Contractor
- What Every Small Business Owner Should Know About Government & Politics



Business Development Activities

Wide range of services

- Recruiting of and outreach to potential program contractors
- Mandatory and voluntary training classes
- Assessment & Action Plans of existing contractor businesses
- Ongoing contractor interface with high level of customer service
- Business Consulting and guidance
- Technical and Business Operations support
- Work with MTA Agencies to provide projects at \$3M to \$15M



Return on Investment Success of SBDP Graduates

Zion Contracting, LLC

Project Name: C-40252 - Far Rockaway Bus Depot Rehabilitation, Queens, NY

Contract Value: \$7.18 Million



BEFORE

AFTER



Return on Investment Success of SBDP Graduates



Zion Contracting, LLC

Project Name: NYCT A-37126 – Additional Platform Stairs at Broadway Junction Station, Brooklyn, NY

Contract Value: \$5.05 Million

BEFORE

AFTER



Return on Investment Success of SBDP Graduates

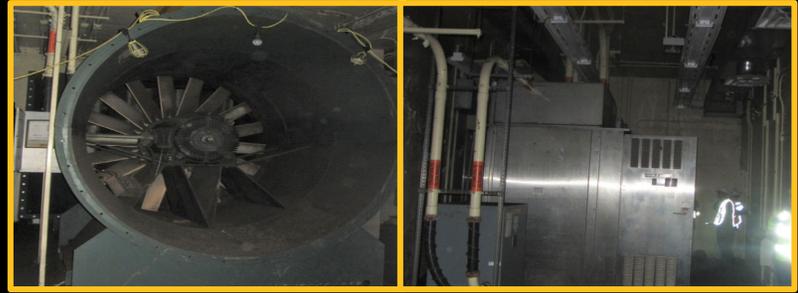


Voltamp Electrical Contractors, Inc.

Project Name: NYCT E-31509 – “Sandy” Fan Plants & Pumps, Manhattan, NY

Contract Value: \$15.90 Million

BEFORE



AFTER



Return on Investment Success of SBDP Graduates



Voltamp Electrical Contractors, Inc.

Project Name: NYCT P-36472 – Rehabilitation of New Circuit Breaker House #210 at 239th Street Yard, Bronx, NY

Contract Value: \$11.85 Million

BEFORE



AFTER

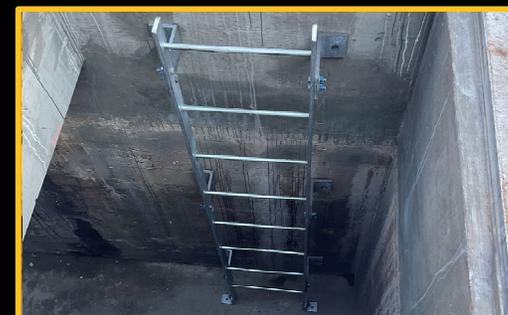


Whitewood Renovations, LLC



Mentor Contractor Since 2016

- \$1.25 Million in MTA SBDP Prime Contract Awards
- 2 SBDP Contract Awards



Empower Contracting, Inc.



Mentor Contractor Since 2018

- \$934K in MTA SBDP Prime Contract Awards
- 2 SBDP Contract Awards



K.O. Technologies, Inc.

Mentor Contractor Since 2013

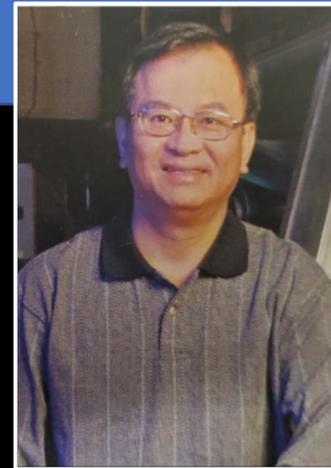
- \$2.9M in MTA SBDP Prime Contract Awards
- 2 SBDP Contract Awards



Ko Jin Industries

Mentor Contractor Since 2013

- \$5.1M in MTA SBDP Prime Contract Awards
- 4 SBDP Contract Awards



SBMP Initiatives

Actions to improve growth in the SBMP Program:

- Increase staffing to plan, design, and award 70+ projects in a 12-month cycle
- Rigorous re-alignment of projects to match bidders' pool
- Increase annual commitment of smaller projects < \$200K
- Increase number of diverse contractors in the Regions North of New York City
- Increase diversity in the pool of contractors in Tier-2 and Federal program

SBMP Initiatives:

- Obtain funding commitment to significantly exceed the 2021 award goal of \$70M
- Streamline process to deliver SBMP projects using integrated schedule
- Start design in 2021 for 2022/23 commitment
- Design smaller value projects with operating funds for the less experienced contractors



Metropolitan Transportation Authority Department of Diversity and Civil Rights

M/WBE, DBE, and SDVOB Participation on
Capital Projects

November 15, 2021



MWDBE and SDVOB Participation on MTA Capital Projects with Goals*

■ Federal Participation Goal: 20% (Federal Fiscal Year 2021 (October 2020 to September 2021))

- Total Awards: \$92M
- Total DBE Awards: \$21M (23%)
- Total Payments: \$467M
- Total DBE Payments: \$88M (19%)

■ New York State MBE Participation Goal: 15% (First and Second Quarters of NYS Fiscal Year 2021-2022 (April 2021 – September 2021))

- Total Awards: \$56M
- Total MBE Awards: \$9.5M (17%)
- Total Payments: \$98M
- Total MBE Payments: \$21M (22%)

■ New York State WBE Participation Goal: 15% (First and Second Quarters of NYS Fiscal Year 2021-2022 (April 2021 – September 2021))

- Total Awards: \$56M
- Total WBE Awards: \$6.5M (12%)
- Total Payments: \$98M
- Total WBE Payments: \$13M (14%)

■ Service Disabled Veteran-Owned Business Participation Goal: 6% (First and Second Quarters of NYS Fiscal Year 2021-2022 (April 2021 – September 2021))

- Total Awards: \$28M
- Total SDVOB Awards \$1.1M (4%)
- Total Payments: \$183M
- Total SDVOB Payments: \$2.6M (1%)

*Report is based on original contract amount provided by MTA Agencies for third-party design and construction contracts (excluding rolling stock and signals).

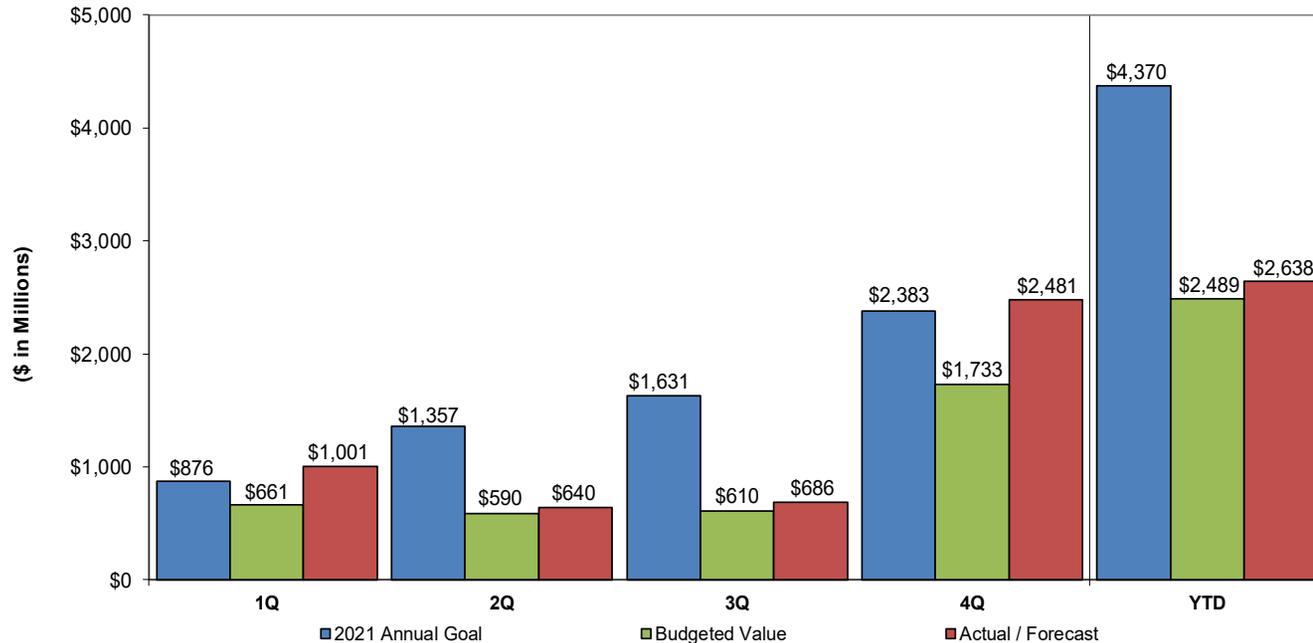


MTA Capital Program Commitments & Completions

through
October 31, 2021

Capital Projects – Commitments – October 2021

MTA-wide 2021 Commitments



Annual Goals: Dollar and time-based programmatic milestones for the commitment of contracts established at the start of each year and which are achievable during the year.

Actuals: The value of the goals and any additional unplanned commitments as they are achieved during the year.

Forecasts: The updated estimates by quarter for remaining goals as well as any unplanned commitments that might occur during the year.

Budget: The budgeted value assumed in the capital program for the Actual and Forecasted commitments being tracked during the year.

Commitments Summary

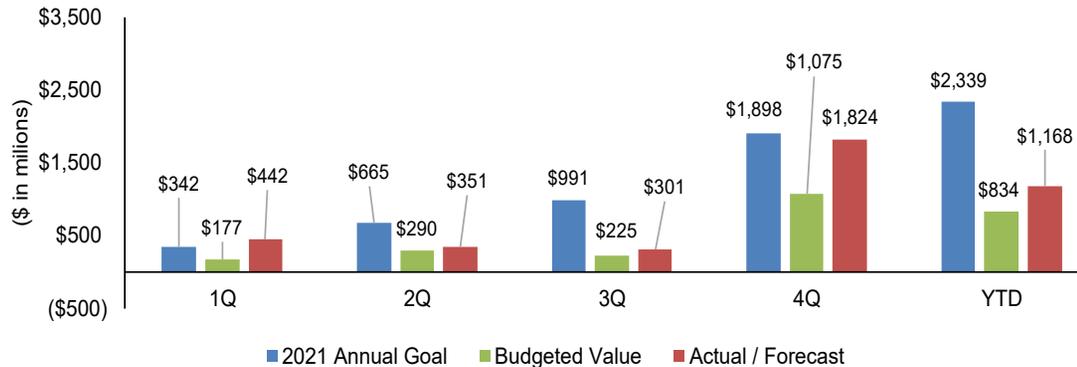
In 2021, agencies have a goal of \$6.2 billion in overall commitments, including \$3,839 million for NYCT, \$485 million for LIRR, \$777 million for MNR, \$57 million for MTA Bus, \$40 million for MTA Interagency, \$867 million for MTA Network Expansion, and \$173 million for B&T.

Through October, agencies have committed \$2.6 billion versus a \$4.4 billion YTD goal including a total of over \$0.6 billion of unplanned commitments that partially offset delayed awards. Currently, the MTA forecasts achieving \$4.9 billion (79% of the overall 2021 commitment goal) during the year. The year-end shortfall is due to the impact of commitments now forecasted to be delayed until 2022. At the end of each quarter in 2021, schedule variances are explained on the following pages with current explanations covering the first three quarters of 2021. Fourth quarter results will be reported in the year-end report.

NYCT/MTA Bus Capital Projects – Commitments – October 2021 – Budget Analysis and Schedule Variances

NYCT and MTA Bus Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Annual Goal	\$342	\$665	\$991	\$1,898	\$2,339
Actual / Forecast	\$442	\$351	\$301	\$1,824	\$1,168
Budgeted Value	\$177	\$290	\$225	\$1,075	\$834



Q1, Q2 and Q3 Schedule Variances

Project	Commitment	Goal	Forecast
3 NYCT/MTA Bus Amber Commitments			
Amber delays are within 2 months of goal.			
<i>Passenger Stations</i>			
Replace 8 Traction Elevators / Various	Construction Award	Q1	Q2(A)
		\$66.0	\$50.0
The project's award was delayed due to bid opening delays early in the year which were caused, in part, by time needed to answer requests for information. Bids were received in late March. The project cost decreased reflecting good bid savings.			
<i>Superstorm Sandy Repairs</i>			
Roackaway Line Wrap-Up	Construction Award	Q2	Q3(A)
		\$56.4	\$40.4
Project award was delayed pending resolution of a bidder qualification hearing earlier in the year. The contract was awarded in July. The project cost reflects good bid savings.			
<i>Shops & Yards</i>			
Livonia Maintenance Facility Ph. 1	Construction Award	Q3	Q4(A)
		\$66.9	\$21.9
Project award was delayed to comply with Federal requirements due to changing funding source from Local to Federal. The actual award value reflects favorable bidding results.			

Project	Commitment	Goal	Forecast
9 NYCT/MTA Bus Red Commitments			
Red delays are beyond 2 months of goal.			
<i>Stations</i>			
Connection-Oriented Ethernet (COE) at 265 Stations, Ph 3B-2	Construction Award	Q2	Q4
		\$43.5	\$26.4
The project's award was initially rescheduled to reflect the availability of funding. The grant has now been executed and a contract award is scheduled for November.			
Replace 12 Escalators	Construction Award	Q2	Q4
		\$120.5	\$111.1
Award delayed until October due to issues with the schedule submitted by the low bidder. Since then the schedule has been corrected/resubmitted and the procurement staff summary is being prepared. Awarded on November 11th.			

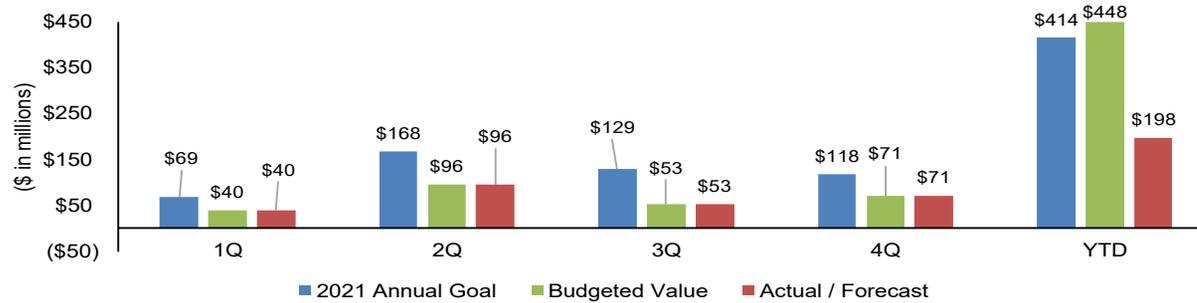
NYCT/MTA Bus Capital Projects – Commitments – October 2021 – Schedule Variances

Project	Commitment	Goal	Forecast	Project	Commitment	Goal	Forecast
9 NYCT/MTA Bus Red Commitments (continued)				<i>Power</i>			
<i>Misc./Emergency</i>				New Substation: Canal St. 8th Ave			
Livingston Plz Elec and Mech Sys Improvements, Ph. B	Construction Award	Q2	Q4	Construction Award	Q3	2022	
		\$53.6	\$53.4		\$64.7	\$69.5	
The award was initially delayed to October due to extended time needed to update specifications and to process addenda during procurement. Qualification hearings occurred in October and an award is anticipated for December.				Delayed in part due to outstanding real estate issues, now resolved. The MTA and the City have resolved an easement agreement.			
<i>Track</i>				<i>Line Structures</i>			
8th Ave ROW (Misc.) Bundle	Construction Award	Q2	2022	Line Structures Component Program: The Bronx and Vents (BL01-2519)	Construction Award	Q3	Q4
		\$83.2	\$133.7			\$191.9	\$189.4
The award was previously re-scheduled to accommodate design criteria development and related procurement activities. Review of RFP docs by C&D is ongoing with an early November released date anticipated. Project cost reflects latest estimate.				The award was re-scheduled to accommodate specification revisions and the contract advertisement and procurement method was revised from D/B to Invitation for Bid (IFB). There was a bid opening on October 18th. The project cost reflects the latest estimate.			
<i>Sandy</i>							
Mainline Track 200-207th St., 8th Ave	Construction Award	Q3	Q4				
		\$137.0	\$171.5				
The award was rescheduled to December due to contract revisions based on constructability and to address bidders' questions which extended the bid due date date to mid-November. The project's cost reflects the latest estimate.							
Tiffany Central Warehouse	Construction Award	Q3	2022				
		\$59.5	\$58.4				
The award was re-scheduled to allow for updating of technical specifications and contract documents. The bid package was released on November 1st. The project's cost reflects the latest estimate.							
<i>Signals</i>							
Ultrawide Proof of Concept	Construction Award	Q3	Q4				
		\$109.7	\$109.6				
This project's award is spread over multiple procurements with about \$35 million already committed. Remaining initiatives and proofs of concept are under review.							

LIRR Capital Projects – Commitments – October 2021 – Budget Analysis and Schedule Variances

LIRR Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Annual Goal	\$69	\$168	\$129	\$118	\$414
Actual / Forecast	\$40	\$96	\$53	\$71	\$198
Budgeted Value	\$40	\$96	\$53	\$71	\$448



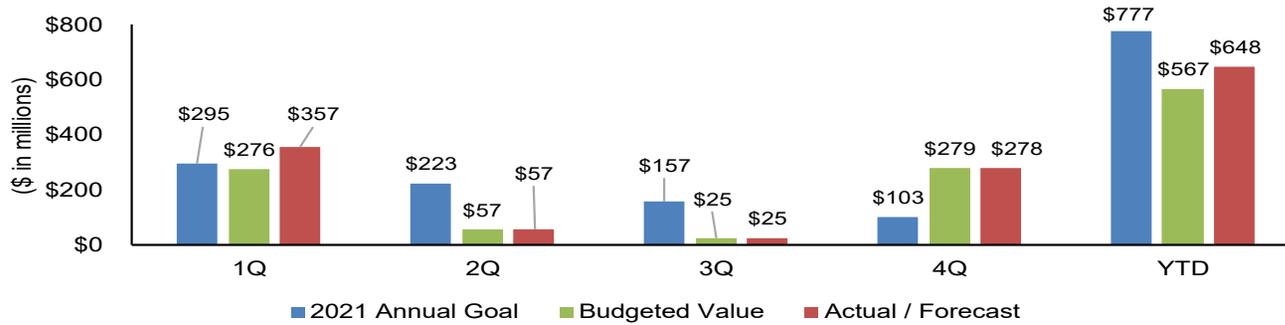
Q1, Q2 and Q3 Schedule Variances

Project	Commitment	Goal	Forecast	Project	Commitment	Goal	Forecast
4 LIRR Red Commitments				<i>Bridges</i>			
Red delays are beyond 2 months of goal.				Cherry Valley Rd Bridge Replacement			
<i>Superstorm Sandy</i>				Construction Award			
Long Island City Yard Restoration and Resiliency	Construction Award	Q2	2022			Q3	Q4
		\$13.4	\$23.5			\$25.0	\$25.0
Project award initially delayed due to additional bidder questions impacting bid opening schedule. All bids came in high and the LIRR is currently developing a funding strategy, but deferring the award to April 2022 during this time.				The project was delayed to accommodate responses to proposers' questions and contract negotiations. The award was Board approved in October and will be committed in November.			
<i>Rolling Stock</i>				<i>Signals</i>			
Work Locomotives	Purchase	Q2	2022	Babylon Interlocking Signal System Renewal and Upgrade	Construction Award	Q3	2022
		\$35.7	\$45.7			\$30.0	\$30.0
Project award initially delayed to allow more time to negotiate with vendor. More recently, additional time has been needed for the Legal Department to negotiate and finalize an agreement for work trains (\$10M) along with the larger project (\$36M).				The RFP was released in September. The current forecast is impacted by additional addendum issued and a proposal due date is currently anticipated in November.			

MNR Capital Projects – Commitments – October 2021 – Budget Analysis and Schedule Variances

MNR Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Annual Goal	\$295	\$223	\$157	\$103	\$777
Actual / Forecast	\$357	\$57	\$25	\$278	\$648
Budgeted Value	\$276	\$57	\$25	\$279	\$567



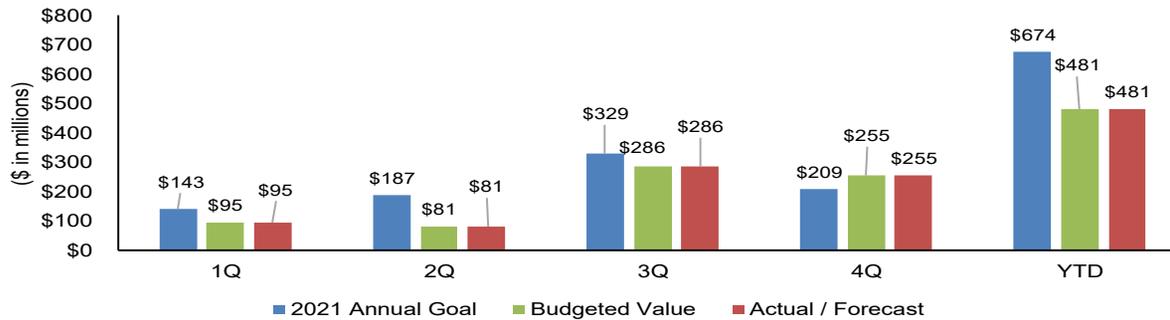
Q1, Q2 and Q3 Schedule Variances

Project	Commitment	Goal	Forecast
2 MNR Red Commitments			
Red delays are beyond 2 months of goal.			
<i>Stations</i>			
GCT Trainshed	Construction Award	Q2 \$183.3	Q4 (A) \$184.9
Due to the amount of R.F.I.'s [Request for Information] from potential contractors; JP Morgan Chase shifted the award date to October 2021.			
Upper Harlem & Hudson Stations	Construction Award	Q2 \$31.0	2022 \$31.0
The staging of this project is being altered to have two stations (Garrison and Cold Spring) completed first. Additional design is required to accommodate this resequencing of work. Because of this resequencing as well as coordination with other work in the vicinity, a new schedule has been developed.			

MTA Expansion Capital Projects – Commitments – October 2021 – Budget Analysis and Schedule Variances

MTA Expansion Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Annual Goal	\$143	\$187	\$329	\$209	\$674
Actual / Forecast	\$95	\$81	\$286	\$255	\$481
Budgeted Value	\$95	\$81	\$286	\$255	\$481



Q1, Q2 and Q3 Schedule Variances

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

2 MTA Expansion Amber Commitments

Amber delays are within 2 months of goal.

East Side Access

Rail Replacement	Construction Award	Q1 \$20.0	Q2(A) \$3.0
Project award was delayed to negotiate a change order. The award value reflects reduced material quantities required.			

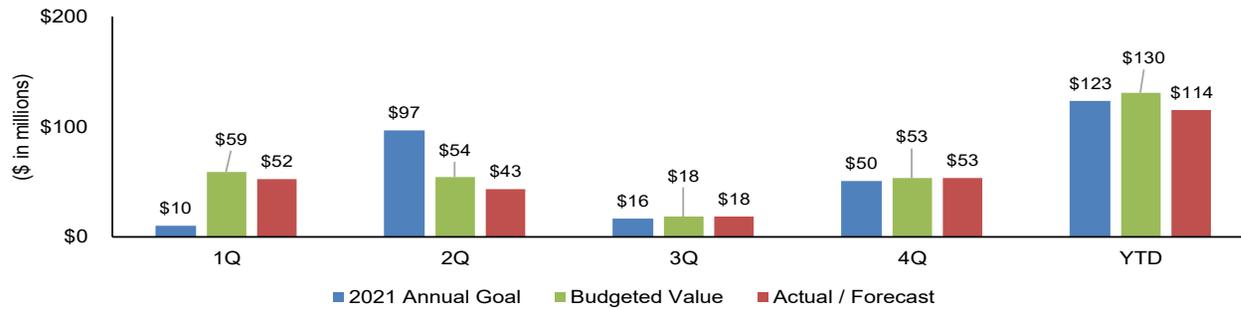
Regional Investments

Eastbound Re-Route	Construction Award	Q3 \$250.0	Q3(A) \$183.4
The contract was Board approved in July and awarded in August. The budget at award reflects the impact of good bid savings.			

B&T Capital Projects – Commitments – October 2021 – Budget Analysis and Schedule Variances

B&T Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Annual Goal	\$10	\$97	\$16	\$50	\$123
Actual / Forecast	\$52	\$43	\$18	\$53	\$114
Budgeted Value	\$59	\$54	\$18	\$53	\$130



Q1, Q2 and Q3 Schedule Variances

The Q1 schedule variance reflects the early award of the installation of protective fencing at the Verrazzano-Narrows Bridge. There are no Q2 or Q3 schedule slippages to report. Q4 schedule variances will be reported in the year-end report.

Capital Projects – Completions – October 2021

Goal	Actual	MTA-wide 2021 Major Completions												Post 2021
		Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	
Total	51	1	1	1	5	3	2	3	0	3	3	6	10	13
Jan-21	1	1												
Feb-21	2				1			1						
Mar-21	1			1										
Apr-21	3				2					1				
May-21	7		1		2	1	1				1	1		
Jun-21	7					2	1			1			1	2
Jul-21	3									1			1	1
Aug-21	5						1					1	2	1
Sep-21	2												1	1
Oct-21	7						1				2	2		2
Nov-21	2											2		
Dec-21	11												5	6

BLUE = Forecast/Actual earlier than Goal
GREEN = Forecast/actual matches Goal
AMBER = Forecast/actual within 2 months of Goal
RED = Forecast/actual beyond 2 months of Goal

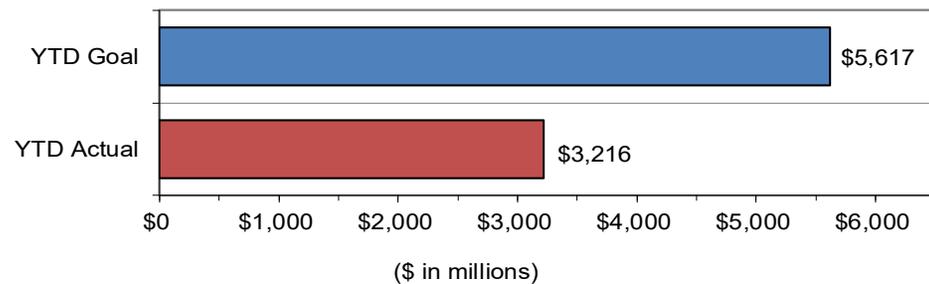
Completions Summary

In 2021, agencies have a goal of completing \$7.2 billion in work including 51 major completions. Major completions are generally those that have significant dollar value or have high visibility. Major completions for 2021 by agency include 26 for NYCT, 7 for LIRR, 7 for MNR, 2 for MTA Bus, 5 for MTA Expansion, and 4 for B&T.

Through October, agencies have completed \$3.2 billion versus a \$5.6 billion goal. The year-to-date shortfall is mainly due to slips of 16 major completions with 7 falling out of 2021. All schedule slips are explained on the following pages. The MTA currently anticipates achieving 77% of its overall 2021 annual completion goal.

Budget Analysis

	(\$m)	
2021 Annual Goal	\$7,183	
2021 Forecast	\$5,514	77% of Annual Goal
Forecast left to Complete	\$2,298	

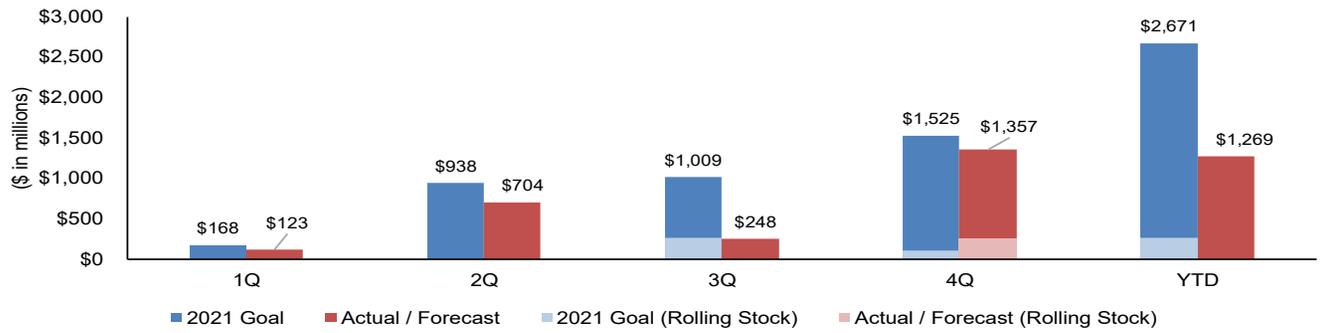


NYCT/MTA Bus Capital Projects – Completions – October 2021 – Budget Analysis and Schedule Variances

NYCT and MTA Bus Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Goal	\$168	\$938	\$1,009	\$1,525	\$2,671
Actual / Forecast	\$123	\$704	\$248	\$1,357	\$1,269

2021 Goal (Rolling Stock)	\$0	\$0	\$259	\$99	\$259
Actual / Forecast (Rolling Stock)	\$0	\$0	\$0	\$245	\$0



Schedule Variances

Project	Completion	Goal	Forecast
3 NYCT/MTA Bus Amber Completions (1 new this month)			
Amber delays are within 2 months of goal.			
<i>Passenger Stations</i>			
ADA: Gun Hill Rd / Dyre	Construction	Feb-21	Apr-21(A)
		\$55.1	\$59.5
Project completion was delayed due to an additional work order for the redesign of the fire sprinkler and fire alarm system as a result of changes to standards identified during pre-final inspection. Cost increase reflected additional project support costs.			
<i>Miscellaneous/Emergency</i>			
Power Upgrade: RCC, PCC - Phase 2 (New Item)	Construction	Oct-21	Nov-21
		\$63.4	\$63.4
Completion forecast will be extended one month due to pending AWOs and delays completing the punch list work.			
<i>Sandy</i>			
Sandy Mitigation: St. George	Construction	Oct-21	Nov-21
		\$47.5	\$51.8
Project cost increased due to additional cost to dispose of Asbestos and repair a customer platform damaged during jet grout installation.			

Project	Completion	Goal	Forecast
16 NYCT/MTA Bus Red Completions (2 new this month)			
Red delays are beyond 2 months of goal.			
<i>Signals & Communications</i>			
CBTC Queens Blvd West - 50 St to Union Tpke: Ph 1	Construction	Aug-21	Dec-21
		\$235.8	\$254.8
Project completion delayed due to software reliability issues as well as additional time needed to monitor each section of the line's performance prior to entering beneficial use. Project cost increase in part due to additional TA support services, additional work orders, as well as additional administrative services.			
<i>Staten Island Railway</i>			
SIR: New Power Station: Clifton & New Dorp	Construction	Jun-21	Apr-22
		\$49.8	\$50.4
Project completion rescheduled due to Fire Alarm acceptance testing and Con Ed delay in providing Low and High Tensions service. Project cost increase due to additional support services needed as a result of project duration increase. Substantial completion has been revised due to ongoing punch list work, tests and inspections.			

NYCT/MTA Bus Capital Projects – Completions – October 2021 – Schedule Variances

Project	Completion	Goal	Forecast
16 NYCT/MTA Bus Red Completions (continued)			
Red delays are beyond 2 months of goal.			
<i>Bus Purchases</i>			
Purchase 165 Hybrid-Electric Standard Buses	Bus Procurement	Sep-21 \$150.7	Dec-21 \$145.9
Project completion schedule extended to account for COVID-19 impact on delivery schedule.			
Purchase 126 Hybrid-Electric Standard Buses	Bus Procurement	Oct-21 \$107.9	Feb-22 \$107.9
Recent, additional delay until February 2022 is attributable to resources and parts shortages.			
<i>Miscellaneous/Emergency</i>			
Livingston Plaza: Facade & Perimeter Hardening	Construction	Aug-21 \$33.5	Jan-22 \$33.5
Project completion delayed due to issues preventing the contractor from removing the scaffolding. Completion forecast was extended one month due to a roofing materials shortage and pending negotiations on an AWO.			
<i>Superstorm Sandy Repairs</i>			
Sandy: Rutgers Tube	Construction	Aug-21 \$159.2	Dec-21 \$168.0
The completion delay is due to time needed to complete additional work orders (AWOs). The project's cost increase is primarily driven by the estimated cost for these AWOs. Project cost reflects latest estimate.			
Sandy: Clifton Shop	Construction	Dec-21 \$200.7	Jun-22 \$200.7
Substantial completion has been revised due to delays in gas activation and completion of other punch list work.			
<i>Staten Island Railway</i>			
Mainline & Clifton Yard Track and Switches	Construction	Sep-21 \$77.3	Dec-22 \$77.1
Project completion delayed until 2022 due to new switches to Clifton Yard Tracks 5 through 7 which cannot be completed until the new Clifton Shop is placed in service; which is currently forecasted for June 2022.			

Project	Completion	Goal	Forecast
NYCT			
<i>Traction Power</i>			
New Substation & CBHs: Maspeth Av-Humboldt St / Canarsie	Construction	May-21 \$59.2	Oct-21 (A) \$59.2
Con Edison advised that due to emergency feeder outages caused by the ongoing Summer heat events, they could not immediately commit to a date for energization of the 2nd HT Feeder. Energization happened the first week of October 2021 and substantial completion was achieved.			
New Substation: Harrison PI / Canarsie	Construction	May-21 \$51.3	Nov-21 \$51.3
Completion delayed pending Con Ed energization of substation; they could not immediately commit to a date for energization of the 2nd HT Feeder. Energization is now tentatively scheduled for the second week of October 2021.			
<i>Signals & Communication</i>			
Upgrade SONET Rings A,C	Construction	Jun-21 \$29.4	Dec-21 \$29.6
Project completion delayed due to limited In-house resources to support the migration work.			
<i>Depots</i>			
Bus Radio System - NYCT	Construction	Dec-21 \$195.4	Jun-23 \$214.7
Project completion delayed due to utility issues, poor contractor performance, conformed design issues, and delays related to the COVID-19 pandemic. Delays are being analyzed by MTA Legal and MTA C&D Program Controls. Ongoing project cost increases reflect latest, revised cost estimates to complete the project.			
<i>Bus Company Projects</i>			
Bus Radio System	Construction	Dec-21 \$27.8	Jun-23 \$32.1
See Bus Radio System - NYCT explanation above.			
Bus Radio System, Pt II	Construction	Dec-21 \$37.4	Jun-23 \$39.5
See Bus Radio System - NYCT explanation above.			

NYCT/MTA Bus Capital Projects – Completions – October 2021 – Schedule Variances

<u>Project</u>	<u>Completion</u>	<u>Goal</u>	<u>Forecast</u>
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16 NYCT/MTA Bus Red Completions (continued)

Line Structures

Overcoating: Below Track-Level, 48th St to 72nd St/FLS (New Item)	Construction	Aug-21 \$56.1	Nov-21 \$56.1
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Delay due to the addition of new scope to the contract for the demolition of a signal room at 114th Street. (currently under review by C&D Contracts).

Traction Power

PBX Upgrade Phase 2 (New Item)	Construction	Oct-21 \$40.6	Dec-22 \$47.6
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This project's completion date has slipped to late 2022 for two reasons. Additional design and construction is needed to fulfill a lack of DC redundant power at seven PBX sites. There is a shortage of in house support (EMD) required to access the existing communications system.

LIRR Capital Projects – Completions – October 2021 – Budget Analysis and Schedule Variances

LIRR Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Goal	\$126	\$101	\$14	\$124	\$243
Actual / Forecast	\$31	\$209	\$164	\$100	\$274

2021 Goal (Rolling Stock)	\$0	\$65	\$0	\$0	\$65
Actual / Forecast (Rolling Stock)	\$0	\$65	\$0	\$0	\$65



Schedule Variances

Project	Completion	Goal	Forecast	Project	Completion	Goal	Forecast
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2 LIRR Amber Completions (1 new this month)

Amber delays are within 2 months of goal.

Rolling Stock

Rolling Stock: M-9 Procurement	Fleet Procurement	May-21	Jun-21(A)
		\$64.8	\$64.8
Project delayed due to workmanship issues and impacts related to the COVID-19 pandemic. The 24 cars assumed for 2021 were delivered in June.			

Track

Jamaica Capacity Improvements Phase 1 (New Item)	Construction	Dec-21	Feb-22
		\$19.1	\$19.1

Time extension for North/South cutover which proved to be best value realized during Design Review for potential to save money. It will now be done in two weekend cutover time frames. The new completion date incorporates these changes.

1 LIRR Red Completion

Red delays are beyond 2 months of goal.

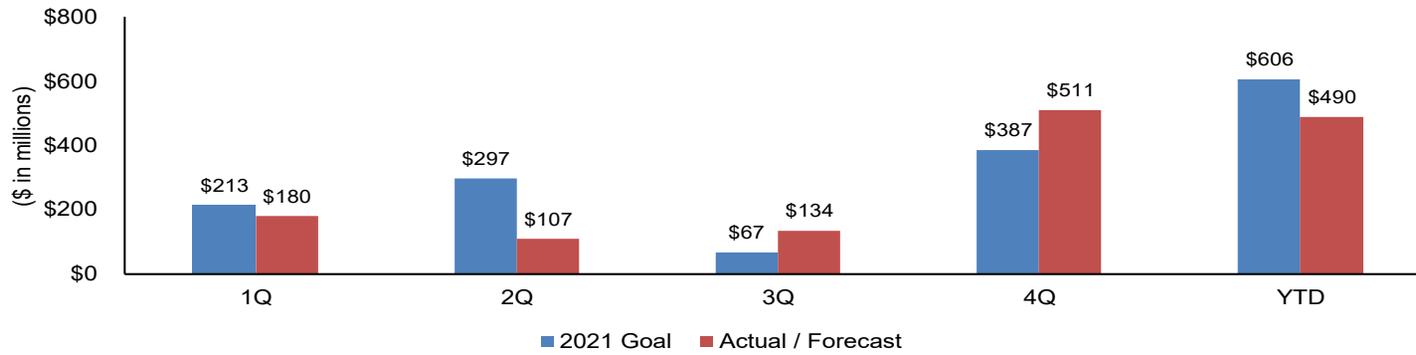
Shops and Yards

Diesel Locomotive Shop Improvements	Construction	Feb-21	Jul-21 (A)
		\$94.4	\$95.6
Project completion was delayed due to and extended process of acceptance of the Fire Alarm System.			

MNR Capital Projects – Completions – October 2021 – Budget Analysis and Schedule Variances

MNR Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Goal	\$213	\$297	\$67	\$387	\$606
Actual / Forecast	\$180	\$107	\$134	\$511	\$490



Schedule Variances

Project	Completion	Goal	Forecast
2 MNR Red Completions			
Red delays are beyond 2 months of goal.			
<i>Track & Structures</i>			
3rd Ave Bridge Replacement	Construction	Jun-21 \$14.4	Sept-21(A) \$14.4
There was a no cost time extension due to COVID-related delays in material and equipment.			
<i>Structures</i>			
2020 Cyclical Track Program	Construction	Dec-21 \$15.7	Dec-22 \$15.7
The 2020 Cyclical Track program has been put on hold while Metro-North Railroad attends to washouts, mudslides, and other damage inflicted by Tropical Storm Ida.			

MTA Expansion Capital Projects – Completions – October 2021 – Budget Analysis and Schedule Variances

MTA Expansion Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Goal	\$0	\$1,375	\$421	\$0	\$1,796
Actual / Forecast	\$72	\$712	\$93	\$349	\$877



Schedule Variances

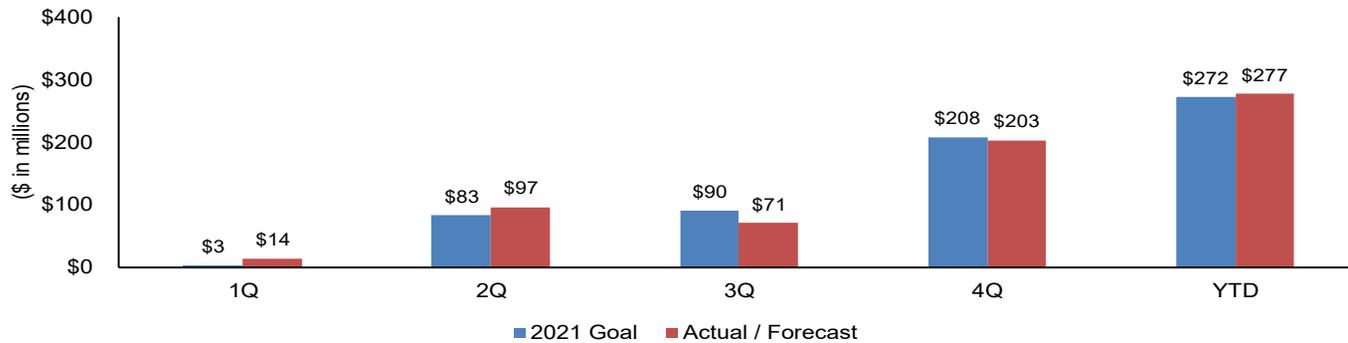
Project	Completion	Goal	Forecast
4 MTA Expansion Red Completions			
Red delays are beyond 2 months of goal.			
<i>East Side Access</i>			
B/C Approach	Construction	Apr-21 \$92.9	Sep-21 (A) \$92.9
Project substantial completion was extended to include Loop 1A trench excavation and catenary work. An additional, recent delay was due to receipt of Amtrak final acceptance.			
GCT Concourse & Facilities	Construction	Jun-21 \$574.5	Sep-22 \$574.5
Scheduled completion impacted by local systems testing delays. A more recent delay extending duration to 2022 is due to re-work required for escalator wellways 1-4. ESA is working with the contractor to mitigate.			

Project	Completion	Goal	Forecast
<i>East Side Access</i>			
Systems Package 2 - Tunnel Systems	Construction	Jul-21 \$72.0	Jan-22 \$72.0
Additional delays are due to permanent power delivery scheduling. Integrated systems testing is underway.			
Mid-Day Storage Yard	Construction	Jul-21 \$348.6	Dec-21 \$348.6
Scheduled completion was impacted by Signals/Systems integration testing delays.			

B&T Capital Projects – Completions – October 2021 – Budget Analysis and Schedule Variances

B&T Budget Analysis

Summary Chart Data	1Q	2Q	3Q	4Q	YTD
2021 Goal	\$3	\$83	\$90	\$208	\$272
Actual / Forecast	\$14	\$97	\$71	\$203	\$277



Schedule Variances

Project	Completion	Goal	Forecast
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1 B&T Red Completion

Red delays are beyond 2 months of goal.

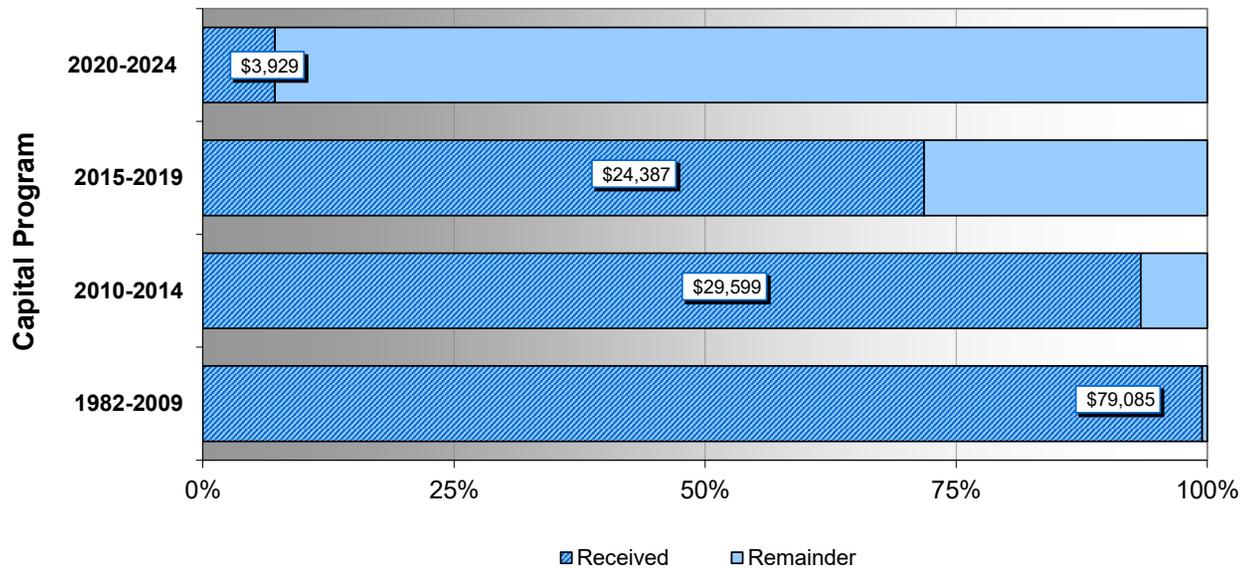
Structures

CB Scour Protect/Repair/Replace	Construction	Jul-21	Sept-21(A)
CB/MP Pier Fender		\$65.9	\$65.9
The project's completion schedule was delayed due to weather-related impacts.			

Status of MTA Capital Program Funding

Capital Funding (October 2021)

\$ in millions



Capital Funding Detail (October 2021)

\$ in millions

	Funding Plan		Receipts	
	Current	Thru Sept	This month	Received to date
2010-2014 Program				
Federal Formula, Flexible, Misc	\$5,862	\$5,857	\$ -	\$5,857
Federal High Speed Rail	173	173	-	173
Federal New Start	1,271	1,257	-	1,257
Federal Security	89	89	-	89
Federal RRIF Loan	-	-	-	-
City Capital Funds	719	608	-	608
State Assistance	770	770	-	770
MTA Bus Federal and City Match	132	113	-	113
MTA Bonds (Payroll Mobility Tax)	11,625	10,647	-	10,647
Other (Including Operating to Capital)**	1,277	1,124	-	1,124
B&T Bonds	2,022	1,844	-	1,844
Hurricane Sandy Recovery				
<i>Insurance Proceeds/Federal Reimbursement</i>	6,697	6,697	-	6,697
<i>PAYGO</i>	171	171	-	171
<i>Sandy Recovery MTA Bonds</i>	659	225	-	225
<i>Sandy Recovery B&T Bonds</i>	230	23	-	23
Total	31,696	29,599	-	29,599

	Funding Plan		Receipts	
	Current	Thru Sept	This month	Received to date
2015-2019 Program				
Federal Formula, Flexible, Misc	\$6,681	\$5,528	\$ -	\$5,528
Federal High Speed Rail	\$122	\$122	-	\$122
Federal Core Capacity	100	-	-	-
Federal New Start	500	-	-	-
Federal Security	18	15	-	15
State Assistance	9,091	4,748	150	4,898
City Capital Funds	2,667	2,050	-	2,050
MTA Bonds	8,474	8,175	-	8,175
Asset Sales/Leases	943	315	-	315
Pay-as-you-go (PAYGO)**	2,156	1,572	-	1,572
Other	273	68	-	68
B&T Bonds & PAYGO/Asset Sale	2,942	1,644	-	1,644
Total	33,969	24,237	150	24,387

	Funding Plan		Receipts	
	Current	Thru Sept	This month	Received to date
2020-2024 Program				
Capital from Central Business District Tolling	\$15,000	\$ -	\$ -	\$ -
Capital from New Revenue Sources	10,000	461	-	461
MTA Bonds and PAYGO	9,792	202	-	202
Federal RIFF Loan	3	-	-	-
Federal Formula	7,435	2,799	-	2,799
State of New York	3,000	-	-	-
City of New York	3,000	120	-	120
Federal New Start (SAS Ph2)	2,905	-	-	-
Federal Flexible	275	51	-	51
Federal Other	73	56	-	56
Federal Security	10	10	-	10
B&T Bonds	3,327	231	-	231
Total	54,819	3,929	-	3,929