



Construction &  
Development

June 2023

# Capital Program Committee

Signals & Train Control, Plan Amendment, & DDCR

# Remembering Michael Horodniceanu



# Remembering Dick Ravitch



Photo: New York Times

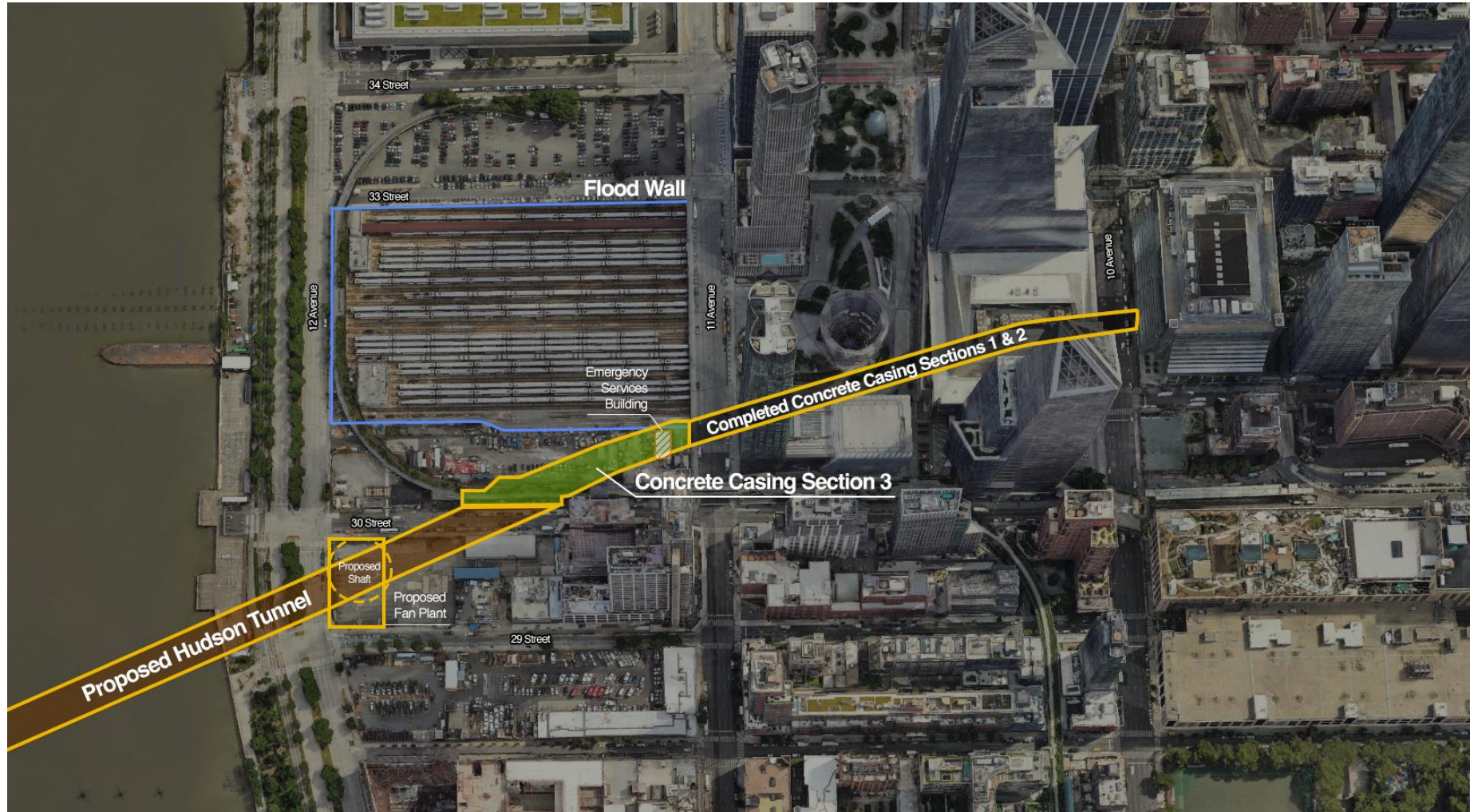
# Court Street **R** Elevator Replacement



# Broadway Junction



# Hudson Yards Concrete Casing



# Penn Station Reconstruction





Construction &  
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# Update to CPC Signals & Train Control

June 26, 2023





# CBTC Strategic Review Update

Last year, C&D undertook a strategic review of signal modernization, outlining steps to:

- **Address challenges and complete existing projects**
- **Reform procurement and technical approach to new projects**
- **Take program-wide steps to maximize CBTC's benefits**



# Ongoing Projects

| Project                    | Status  | As of Last Report | Forecast |
|----------------------------|---|-------------------|----------|
| <b>QBL West</b><br>E F M R | Incidents reduced by 50%; software and maintainability issues remain              | Q2 2023           | Q4 2023  |
| <b>Culver</b><br>F         | Refabricated track components have been delivered and installation is progressing | Aug 2024          | Aug 2024 |



# Ongoing Projects

| Project         | Status  | As of Last Report | Forecast |
|-----------------|---|-------------------|----------|
| 8 Av<br>A C E   | Concurrent delays:<br>R211 deliveries,<br>conventional signal<br>equipment<br>manufacturing | Oct 2025          | Oct 2025 |
| QBL East<br>E F | On Schedule   | Q2 2026           | Q2 2026  |

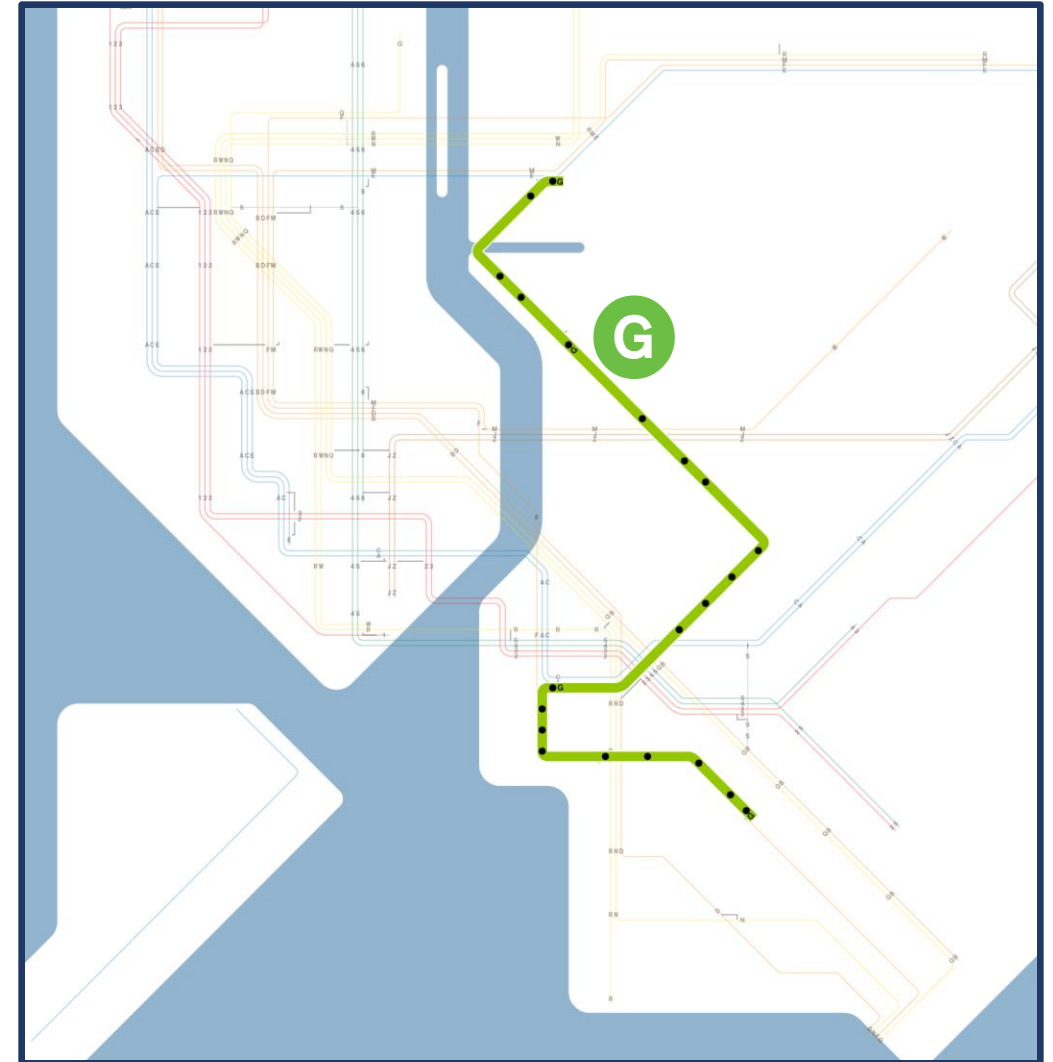


# MTA's First CBTC Design-Build Project

## Crosstown project awarded in December 2022 as design-build

- 11.4 miles in length
- 30 miles of track
- Upon completion, 127 track miles of B Division (30%) will be CBTC-enabled

|             |   |
|-------------|---|
| Contractor: | Crosstown Partners<br>(TC Electric/Thales/AECOM Consortium) |
| Value:      | \$406.4M  |
| Completion: | Q4 2027   |






# Strategy Implementation – Crosstown

Crosstown  isn't just the latest CBTC project. It reflects a completely transformed approach to delivering signal modernization



## Procurement

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-  Implement design-build with performance requirements
-  Long-term maintenance part of the procurement
-  Minimize non-signals scope

## Technical

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-  Simplify the system
-  Reduce legacy wayside equipment

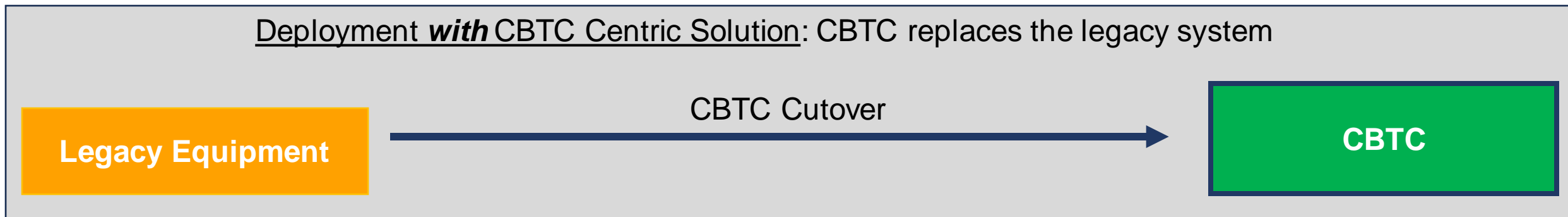
# Simplify the System

CBTC takes control of switches and signals, eliminating the need for the legacy system.

Deployment **before** CBTC Centric Solution: CBTC layered on top of the legacy system

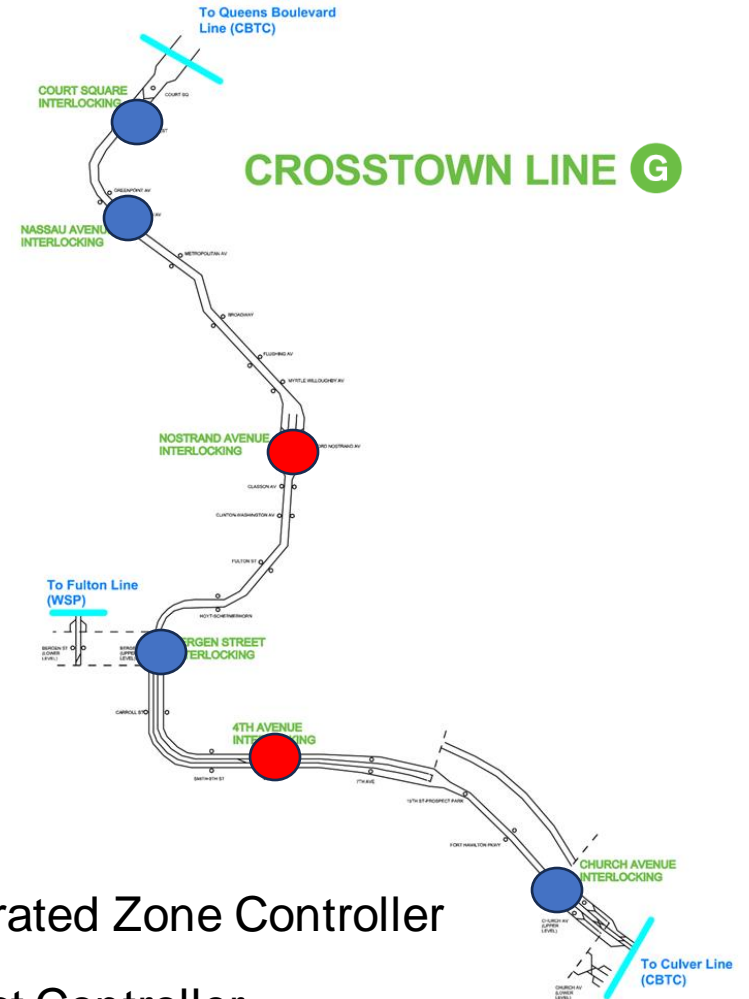
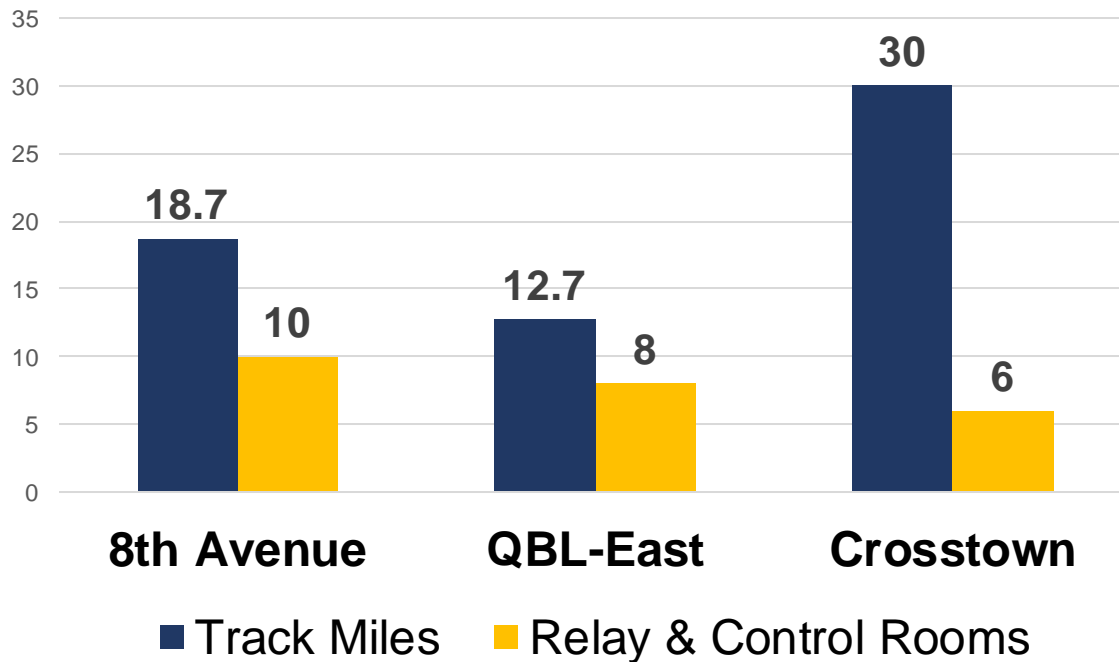


Deployment **with** CBTC Centric Solution: CBTC replaces the legacy system



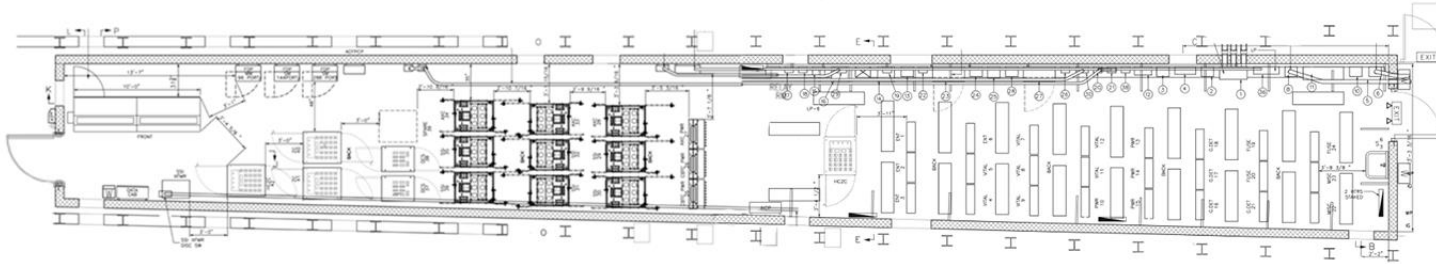
# Reduce Legacy Wayside Equipment

Despite Crosstown's ambitious scale, equipment needs have been reduced dramatically

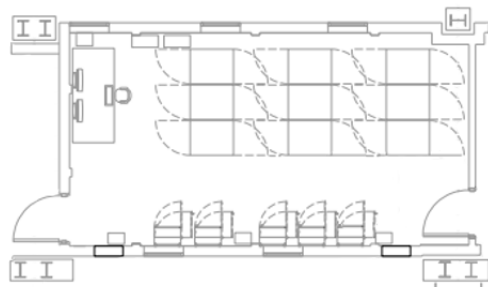


- Integrated Zone Controller
- Object Controller

# Modern Technology Comparison



**A C E** 8 Avenue – Relay Room Layout



**G** Crosstown – CBTC Room Layout





# Virtual Testing and Upgrade of Radio

## Virtual testing

Upgraded, cloud-based software testing  
*In place for Crosstown & upcoming projects*

## Upgrade CBTC radio

Migrating to a state of art standard radio  
*Funded in Capital Plan Amendment; in place for Crosstown & upcoming projects*



# Work Trains and Rolling Stock

## Equip work trains

Improve work train reliability & further reduce legacy equipment

*Funded in the Plan Amendment; procurement in 2023*

## Explore rolling stock retrofit

Potential to speed A-Division transition by retrofitting the existing fleet

*RFI completed in April; review ongoing*



# Global Best Practices

NYCT and C&D have jointly reviewed in detail the experiences from London, Copenhagen and Paris

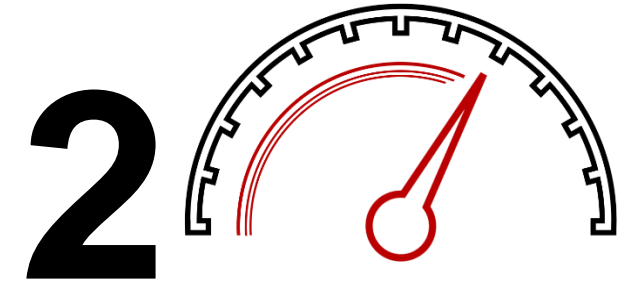
All the properties experienced several years of system stabilization period after first in-service and gain in momentum after a learning curve

We are aligned with the worldwide practices for CBTC implementations:

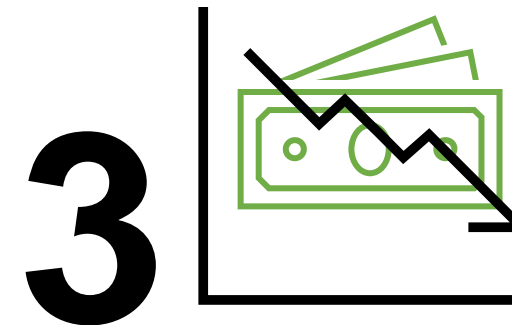
- DB with long term maintenance
- Standard IP radio
- No legacy underlay system
- Equipment of the work train



**Improve reliability and maintenance**



**Speed up deployment and reduce disruption**



**Reduce life cycle cost**

# Signals & Train Control



**IEC**  
**Comments & Questions**



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Development

June 2023

# 2020-2024 MTA Capital Program

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## Amendment #3

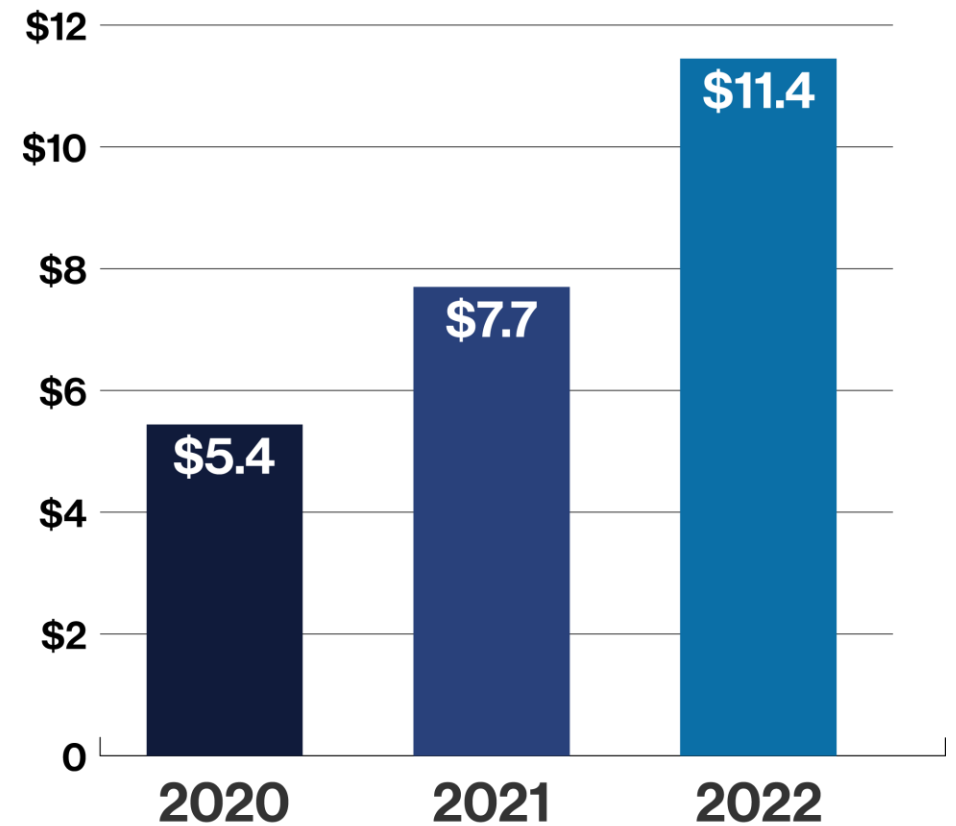
# Capital Program Progress

The historic 2020-2024 Capital Program continues to advance

Last year, a **record-setting \$11.4 billion in commitments**

Overall, despite a 15-month pause, 35% of the program has been committed

MTA Capital Commitments  
(\$ billions)



*Commitments across all active programs*

# Capital Program Progress

**Significant progress on cost containment as C&D innovations save time and money**

## 2022 Cost Savings

**\$244M**

Savings on **Design-Build contracts**, compared to estimate (6% average)

**\$101M**

Savings on **A+B contracts**, compared to estimate (9% average)

**\$150M**

Savings in **internal force account costs**

**\$60-95M**

Savings on **insurance costs**, compared to market trends

## 2022 Time Savings

**4 months**

Average time savings on **Design-Build contracts**, compared to estimate

**5 months**

Average time savings on **A+B contracts**, compared to estimate

# 2020-2024 Capital Program Plan Amendments

**The MTA Capital Program is regularly updated as projects develop and conditions change**

- Crowe Audit recommended annual amendments

**Plan Amendment #3 will:**

- Provide funding to **advance expansion projects**
- **Accelerate key Core Infrastructure projects**
- Address housekeeping issues, including inflation & cost increases

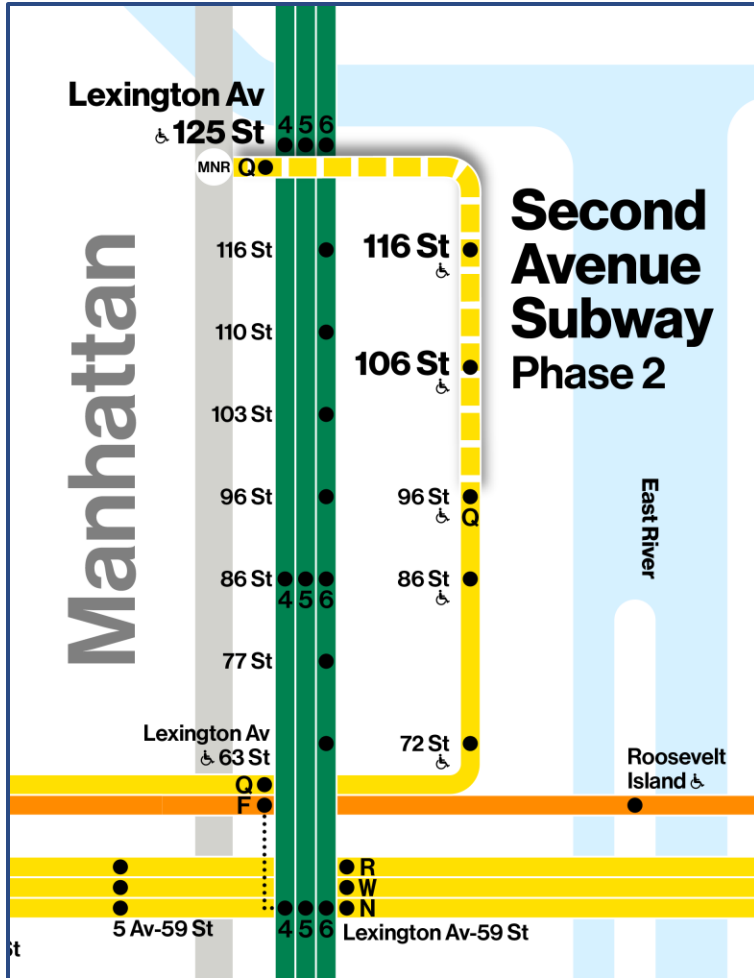
Undertaken in anticipation of additional federal grants for Penn Station Access



207 Street Yard

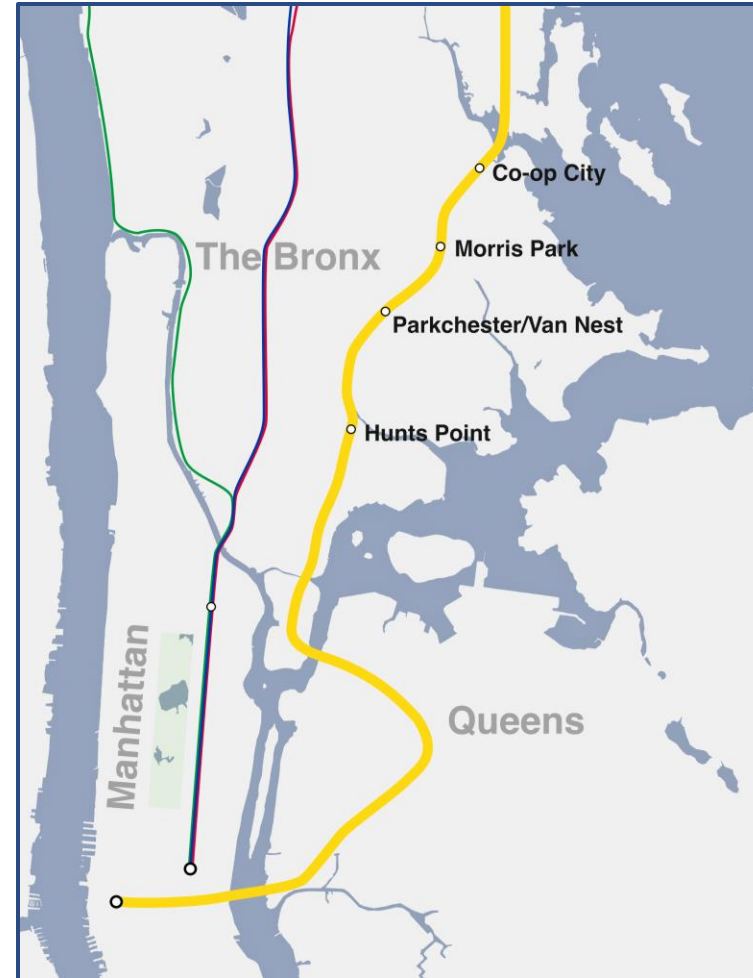


# Advancing Expansion Projects



## Second Avenue Subway Phase 2

Added funding to support the federally-required contingency



## Penn Station Access

Additional funding for rolling stock

# Key Core Infrastructure Projects



**Metro-North  
Park Avenue Viaduct  
Phase 2 Acceleration**



**NYCT Elevated  
Structures  
Enhanced  
Overcoating  
Program**



**B&T Verrazzano  
Narrows Bridge  
Main Cable  
Dehumidification**



**LIRR Hollis Station  
Accessibility and  
Platform Upgrades**

# Amendment #3 Overview

|                                  | July 2022 Approved Amendment | Proposed Program | Change         |
|----------------------------------|------------------------------|------------------|----------------|
| <b>CPRB Core Capital Program</b> |                              |                  |                |
| New York City Transit            | \$34,610                     | \$33,964         | (\$647)        |
| Long Island Rail Road            | \$3,623                      | \$3,446          | (\$177)        |
| Metro-North Railroad             | \$3,458                      | \$3,408          | (\$50)         |
| MTA Bus                          | \$870                        | \$839            | (\$31)         |
| MTA Interagency                  | \$142                        | \$168            | \$26           |
| <b>CPRB Core Subtotal</b>        | <b>\$42,703</b>              | <b>\$41,825</b>  | <b>(\$878)</b> |
| Network Expansion                | \$9,413                      | \$10,291         | \$878          |
| <b>CPRB Program Total</b>        | <b>\$52,116</b>              | <b>\$52,116</b>  | <b>\$0</b>     |
| Bridges and Tunnels              | \$3,326                      | \$3,326          | \$0            |
| <b>Total MTA Capital Program</b> | <b>\$55,442</b>              | <b>\$55,442</b>  | <b>\$0</b>     |

# Funding the 2020-2024 Capital Program

| Program Funding Plan (\$ in millions)          | July 2022 Approved Program | Proposed Program | Change     |
|--|----------------------------|------------------|------------|
| Capital from Central Business District Tolling | \$15,000                   | \$ 15,000        | 0          |
| Capital from New Revenue Sources               | 10,000                     | 10,000           | 0          |
| MTA Bonds                                      | 8,037                      | 7,393            | (644)      |
| State of New York                              | 3,100                      | 3,101            | 1          |
| City of New York                               | 3,007                      | 3,007            | 0          |
| Federal Funds                                  | 12,430                     | 13,073           | 643        |
| Other Contributions                            | 542                        | 542              | 0          |
| <b>CPRB Capital Program Total</b>              | <b>\$ 52,115</b>           | <b>\$52,115</b>  | <b>\$0</b> |
| Bridges & Tunnels Self-Funded                  | \$3,327                    | \$3,327          | \$0        |
| <b>Total 2020-2024 Program</b>                 | <b>\$55,442</b>            | <b>\$55,442</b>  | <b>\$0</b> |

Numbers may not add due to rounding

- **Net Funding for the 2020-2024 Program remains unchanged**
- Federal funding is **increased by \$643 million**
  - Increase includes additional competitive grants secured
  - Federal New Starts and Formula being swapped between 2020-24 and 2015-19 programs to best accommodate SAS2
  - Fully offset by \$643 million reduction of Federal funding in 2015-2019 Program
- State funding is **increased by \$1 million.**
- MTA Bonds is **reduced by \$644 million** to keep the size of the overall funding plan unchanged

# Associated Funding Changes to 2015-2019 Capital Program

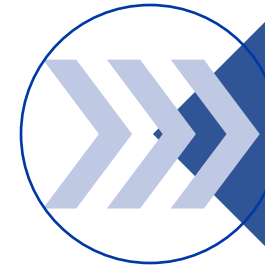
| Program Funding Plan (\$ in millions) | Sept 2019 Approved Program | Proposed Program | Change     |
|---------------------------------------|----------------------------|------------------|------------|
| MTA Bonds                             | 8,475                      | 9,118            | 643        |
| PAYGO                                 | 2,145                      | 2,145            | 0          |
| State of New York                     | 9,064                      | 9,064            | 0          |
| City of New York                      | 2,666                      | 2,666            | 0          |
| Federal Funds                         | 7,445                      | 6,802            | (643)      |
| Other Contributions                   | 1,182                      | 1,182            | 0          |
| <b>CPRB Capital Program Total</b>     | <b>\$30,977</b>            | <b>\$30,977</b>  | <b>\$0</b> |
| Bridges & Tunnels Self-Funded         | \$2,936                    | \$2,936          | \$0        |
| <b>Total 2015-2019 Program</b>        | <b>\$33,913</b>            | <b>\$33,913</b>  | <b>\$0</b> |

Numbers may not add due to rounding

- **Net Funding for the 2015-2019 Program remains unchanged**
- Federal funding is **decreased by \$643 million**
  - *Fully offset by \$643 million increase in Federal funding in 2020-2024 Program*
  - *Federal New Starts and Formula being swapped between 2020-24 and 2015-19 programs to best accommodate SAS2*
- MTA Bonds are **increased by \$643 million**, keeping the size of the overall funding plan unchanged



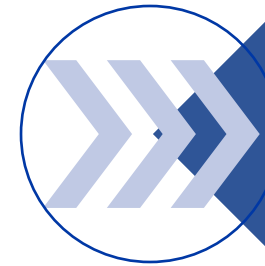
# Next Steps



Present to the  
MTA Board on  
**June 27, 2023**



Present to the Capital  
Program Review  
Board (CPRB) on  
**June 28, 2023**



Anticipated CPRB  
Approval on  
**July 27, 2023**

# MWDBE and SDVOB Participation on MTA Capital Projects with Goals\*

## Federal DBE Participation Goal: 20%

Federal Fiscal Year 2023  
(October 2022 to March 2023)

|                                |                                  |
|--------------------------------|----------------------------------|
| Total Awards: \$1.6B           | Total Payments: \$758M           |
| Total DBE Awards: \$200M (13%) | Total DBE Payments: \$144M (19%) |

## New York State MBE Participation Goal: 15%

NYS Fiscal Year 2022-2023  
(April 2022 - March 2023)

|                                |                                  |
|--------------------------------|----------------------------------|
| Total Awards: \$1B             | Total Payments: \$1.3B           |
| Total MBE Awards: \$169M (17%) | Total MBE Payments: \$195M (15%) |

## New York State WBE Participation Goal: 15%

NYS Fiscal Year 2022-2023  
(April 2022 - March 2023)

|                              |                                  |
|------------------------------|----------------------------------|
| Total Awards: \$1B           | Total Payments: \$1.3B           |
| Total WBE Awards: \$60M (6%) | Total WBE Payments: \$187M (15%) |

## New York State SDVOB Participation Goal: 6%

NYS Fiscal Year 2022-2023  
(April 2022 - March 2023)

|                               |                                  |
|-------------------------------|----------------------------------|
| Total Awards: \$359M          | Total Payments: \$518M           |
| Total SDVOB Awards: \$8M (2%) | Total SDVOB Payments: \$10M (2%) |

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



# Metropolitan Transportation Authority Department of Diversity and Civil Rights

June 2023

MWBE, DBE, and SDVOB Participation on Capital Projects