

A construction site featuring large yellow cranes and workers on a concrete structure. The cranes are labeled 'TRAVELIFT' and have markings for 5, 10, 15, and 20. Workers are wearing hard hats and safety vests. The background shows a brick building and a clear blue sky.

# Better. Faster. Cheaper.

Year in Review & Strategic Plan  
March 2025



Construction & Development



# Letter from the President

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This past December, we celebrated the fifth anniversary of the creation of MTA Construction & Development.

There's a lot to celebrate. Over the course of the past five years, we have transformed the way the MTA delivers capital projects. At every stage of a project—from scoping, to choosing the right contracting tools, to empowering strong project management—we have changed the way the MTA does business. Combined with the extraordinary collection of talent we've assembled, we have become an owner-of-choice in the public works industry.

The savings are adding up. Our new approach to signal modernization projects has cut costs by close to 50 percent. Creatively streamlining the design of accessibility projects has saved hundreds of millions of dollars. An innovative engineering approach has allowed us to advance replacement of the Park Avenue Viaduct 51 months ahead of schedule—saving nearly \$100 million in the process. All told, since 2020 we've saved more than \$1.1 billion on contracts we've awarded compared to our engineering estimates—and then saved another \$750 million by managing projects successfully after construction has begun.

The work we do matters. In the face of aging infrastructure in our century-old transit system, the behind-the-scenes state of good repair we do keeps six million-plus New Yorkers moving on a daily basis. Since 2020, we've replaced pre-World War II signal equipment and replaced it with modern systems across 52 miles of track. Another 68 miles are in construction today. Our accessibility program is transforming the system for customers with disabilities, parents with strollers, seniors, and everyone. Since 2020, we've made 47 stations across the MTA made accessible. Our resilience work is protecting our system against ever-worsening storms and threats. Since 2020, we've protected our two largest train yards against future storms along with dozens of stations.

There's a lot more we will do to deliver critical projects efficiently. This year, we will award contracts and move into construction on vital projects supported by revenue from the Congestion Relief Zone initiative. After working with our partners in Albany and City Hall to secure approval and funding for the 2025-2029 Capital Plan, we will advance another cohort of critical projects.

Perhaps most importantly, we will continue to innovate to drive down costs and get more done. Thanks to the world-class team we have assembled, I am confident the next five years will be even better, faster, and cheaper.

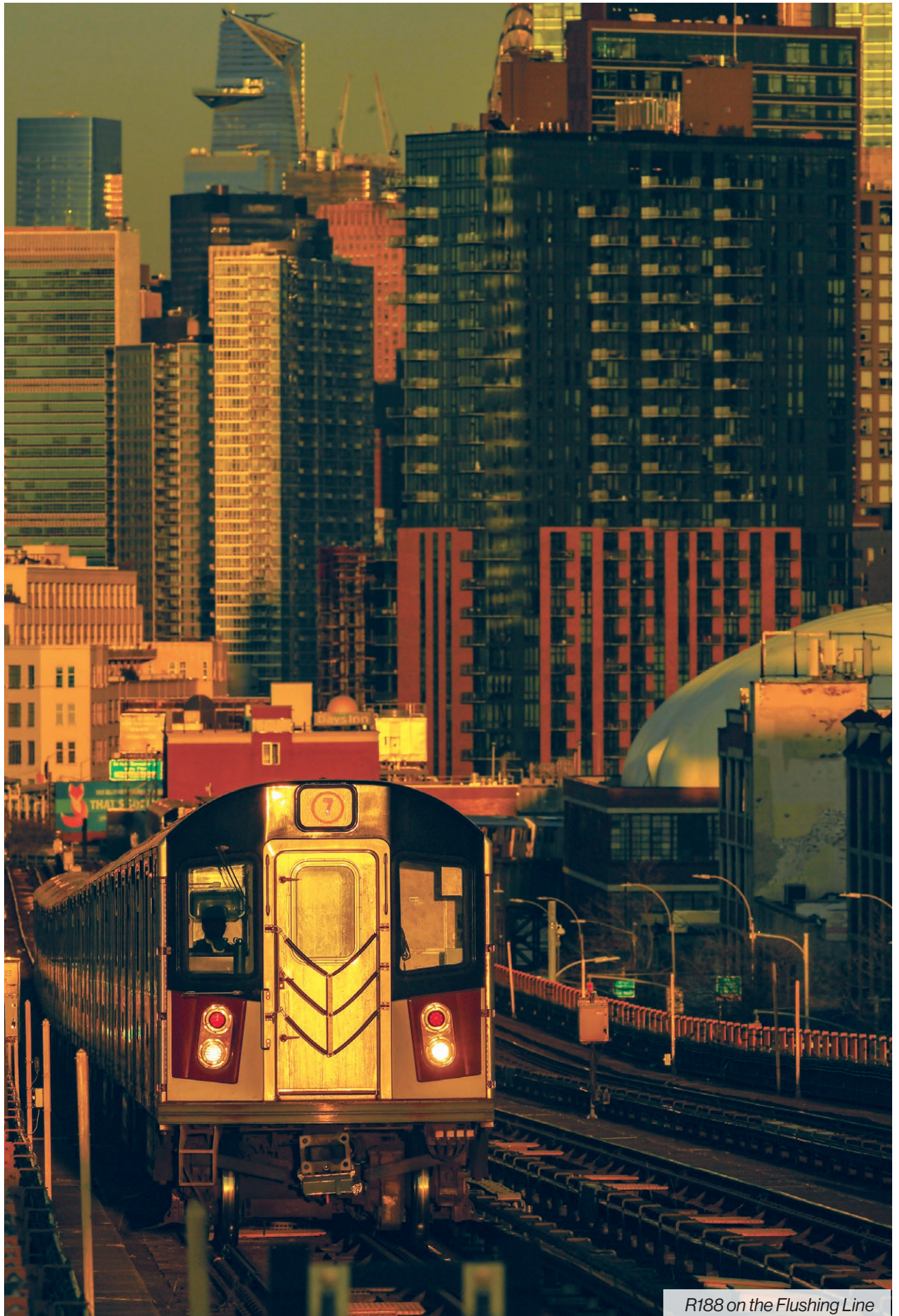
Sincerely,



Jamie Torres-Springer  
President,  
MTA Construction & Development

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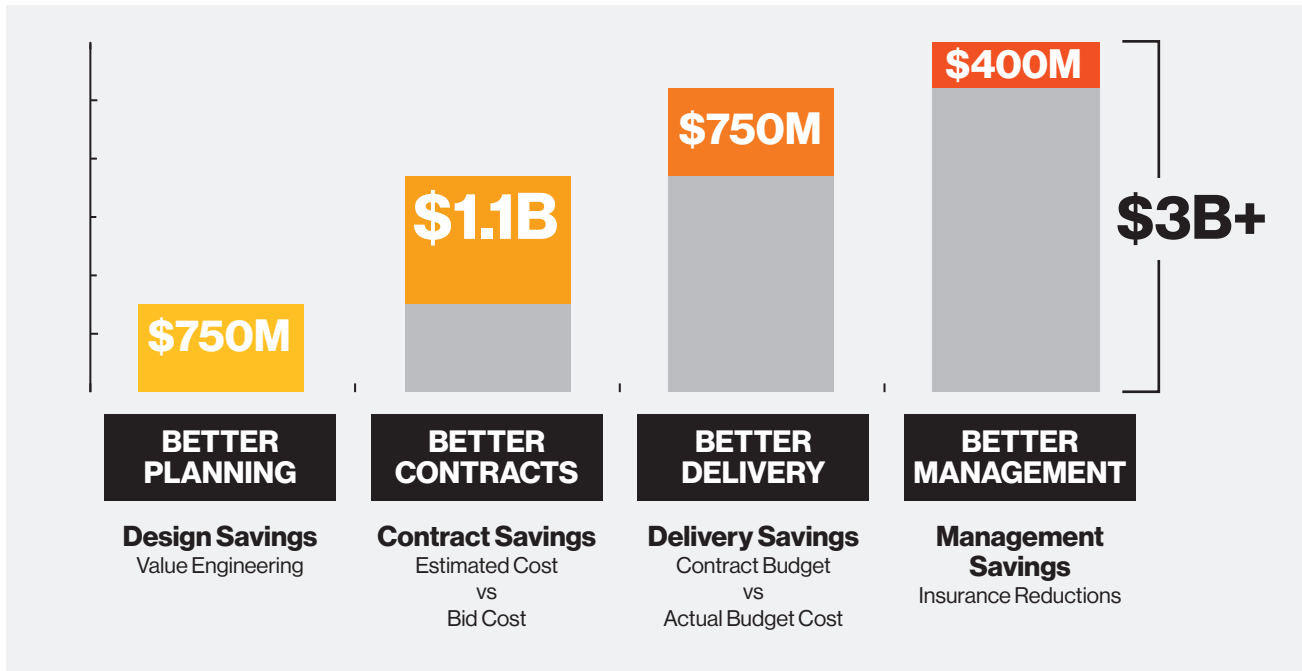
*R188 on the Flushing Line*

# BETTER FASTER CHEAPER

## The New MTA

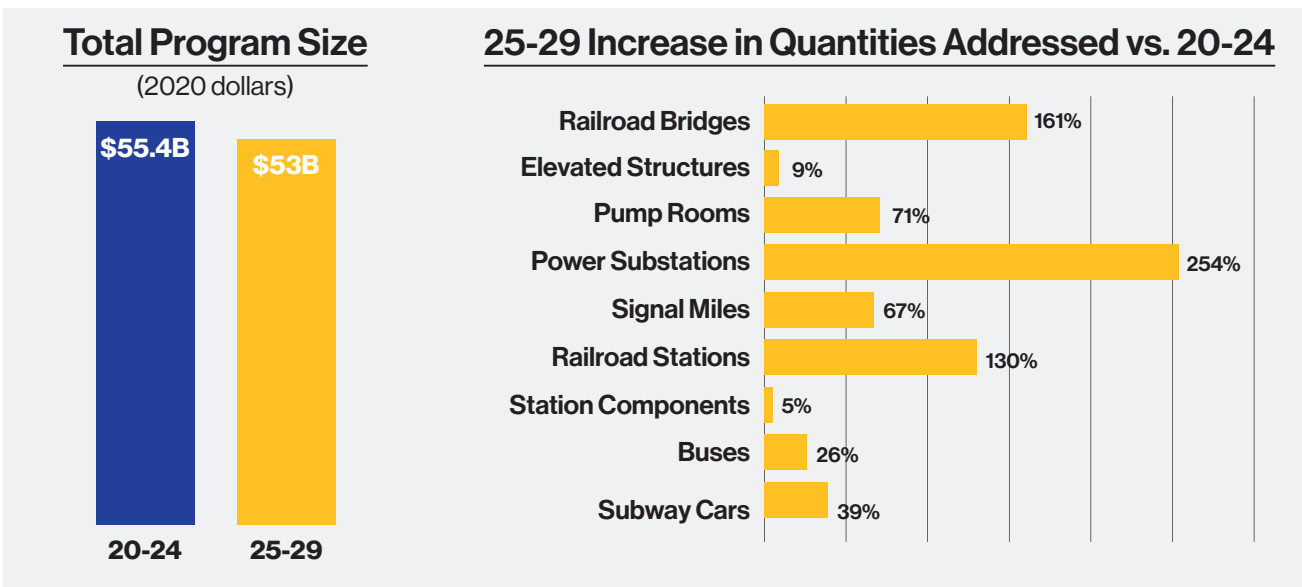
### \$3B in Savings since 2020

MTA C&D is delivering vital capital work **better, faster, and cheaper** at every stage of projects.



### More for Less in 2025-2029 Plan

The 2025-29 Plan will deliver more for riders, even as it **costs 4% less** than the 2020-24 Plan in inflation-adjusted dollars.



# We've achieved this through reforms at every stage of the project life cycle.

## Better Planning

Smarter design and more proactive planning have **saved \$750M before projects even start procurement.**

Inventory and status		
Asset	Total	Percent in Poor/Marginal Condition
Undergrade Bridge (structure)*	504	13%
Undergrade Bridge (waterproofing)	409	69%
Undergrade Bridge (painting)	390	69%
Overgrade Bridge	56	19%
Tunnel	4	75%
Viaduct	29	24%
Retaining Wall	103	18%
Signal Tower	86	19%

## 20-Year Needs Assessment

**Action:**  
Comprehensive analysis of 6 million assets.

**Outcome:**  
Data-driven 5-Year Plan with detailed state of good repair targets.

## Better Contracting

Simplified contracts and bundling have **saved more than \$1.1 billion (7%) on construction contracts.**



## Park Avenue Viaduct

**Action:**  
Design-Build and best value determination.

**Outcome:**  
\$95M and 4 years of savings.

## Better Delivery

Innovation and accountability have **saved more than \$750 million (14%) on projects once construction starts.**



## Accessibility

**Action:**  
Challenging the old way of doing business to build direct-to-platform elevators.

**Outcome:**  
\$250M+ in savings at more than 20 stations.

## Better Management

Improved data and a business approach to costs have **saved more than \$400 million on insurance and other program-wide costs.**



## LIRR Third Track

**Action:**  
Proactive engagement and management of Design-Builder.

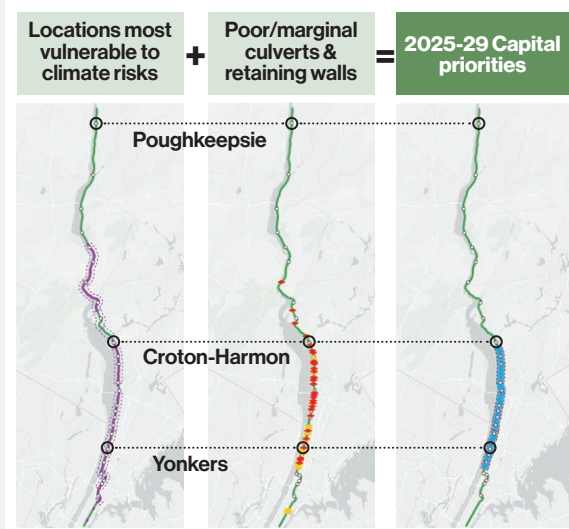
**Outcome:**  
On-time and \$100M under budget.

# The 2025-2029 Capital Plan will be even more efficient.

## Building Integrated Projects

Action: Integrate strategy about what to build & address multiple needs at the same time.

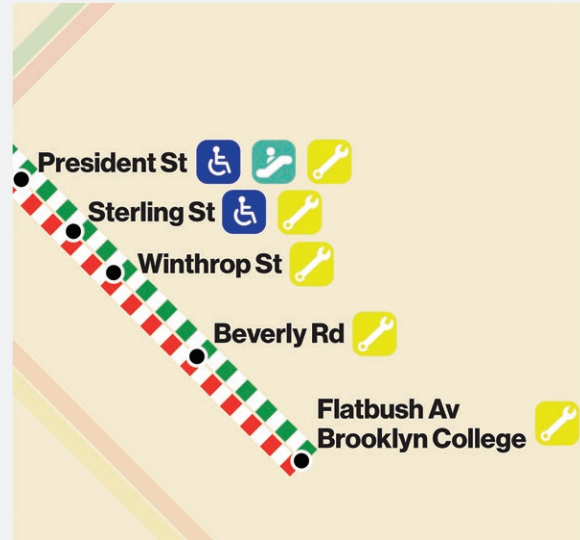
Outcome: 20 miles of integrated Hudson Line resilience & state of good repair.



## Strategic Project Bundling

Action: Create more integrated bundles in more places.

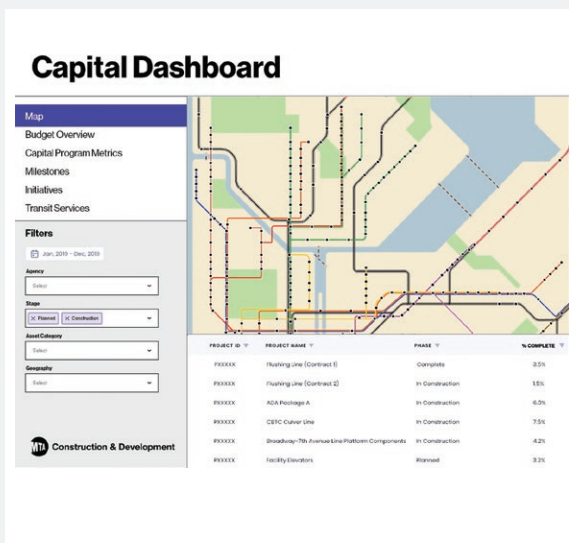
Outcome: Bundles with accessibility, station work, and tunnel repairs on at least 10 subway lines.



## Digital Transformation

Action: Use cutting edge digital tools and systems.

Outcome: Improved accountability & real time status tracking.



## Building a World-Class Organization

Action: Continue to attract and improve talent.

Outcome: Reduced reliance on consultants.



# The 2025-2029 Capital Plan will deliver even more.

## Provide Frequent and Reliable Service

- Order 2000 new subway and rail cars
- Upgrade 177 miles of signals
- Rebuild 80 power substations



## Improve the Customer Experience

- Make 66+ stations accessible
- Install new fare gates at 150+ stations
- Rehabilitate 180+ stations



## Take Action on Climate Change

- Protect 20 miles of the Metro-North Hudson Line
- Upgrade 14 pump rooms
- Purchase 500 zero-emissions buses



**90%+ dedicated** to state of good repair and core infrastructure

**72,700 jobs** created across all regions of New York State

**4% cheaper** in real dollars than the prior plan

# 2024 Year in Review

## Core Infrastructure Supports Our Customers



### Reliability

On-time service that customers have confidence in

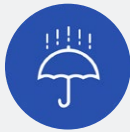
**2024 Action:** Launched the first R211S subway cars on Staten Island Railway, SIR's first new train cars in more than 50 years. The new cars are six times more reliable than cars in the current fleet.



### Accessibility

Ensuring everyone can access and navigate the system

**2024 Action:** Made 16 stations ADA accessible and awarded contracts for 5 more, making it easier for riders with disabilities, parents with strollers, and travelers with luggage to use the subway and commuter rail.



### Resilience

A system that can withstand extreme weather

**2024 Action:** Completed a new 2,400-foot flood wall and five flood gates at 207 St Yard to protect the yard and portal from future tidal surges, preventing service disruptions during severe weather.



### Sustainability

Reducing the region's climate impacts

**2024 Action:** Purchased 60 new Battery-Electric Buses as part of MTA's transition to a zero-emissions bus fleet by 2040, providing a quieter, cleaner ride.



### Longevity

A system that is built to last

**2024 Action:** Began phase 2 of reconstruction of the Park Avenue Viaduct – a 100-year old structure used by 98% of Metro-North trains – without service impacts for customers.



### Customer Experience & Safety

Providing a safer system for customers

**2024 Action:** Installed platform barriers at 14 subway stations to advance safety by preventing intrusion onto the tracks, reducing the risk of accidents on the platform.

## Hitting the Ground Running Thanks to Congestion Relief

Activating congestion relief unlocks a previously paused \$15 billion. We are now able to proceed with critical projects that will transform public transit in New York. Through the Central Business District Tolling program, also known as Congestion Relief, \$15 billion in critical funding will support projects related to accessibility, signal modernization, infrastructure upgrades, and much more throughout the MTA system.

### Projects Now In Procurement:

- ADA upgrades: 42 St- Bryant Park **B D F M**, 145 St **A C B D**, 110 St **6**, Wakefield-241 St **2**, Briarwood **E F**, Parsons Blvd **F**
- Zero-Emissions Buses
- Verrazzano-Narrows Bridge ramp construction and main cable dehumidification
- Dual-mode locomotives for Long Island Rail Road
- CBTC-Signal Modernization to Fulton Line (and now bundling Liberty Line)

# By The Numbers



**\$1.1 Billion**  
in savings on all contracts since 2020

**10.6%**  
**\$176M savings**



bid versus estimate across 47 contracts in 2024



**8 bidders**  
on average for  
Design-Bid-Build projects



**4.7 months schedule savings**  
on A+B contracts

**\$368M**  
Payments to  
**MWBE** firms

**\$16M**  
Payments to  
**SDVOB** firms

**\$400M**  
Payments to  
**DBE** firms

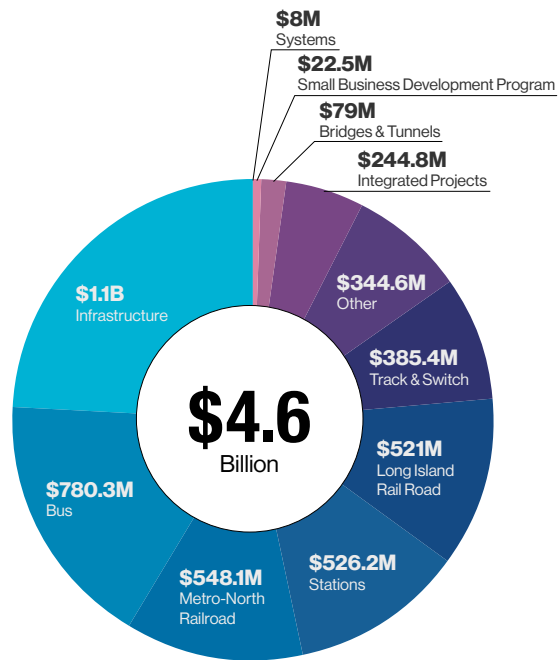
**\$784 Million**



C&D total payments to MWDBE and SDVOB firms in FY2024

# Commitments

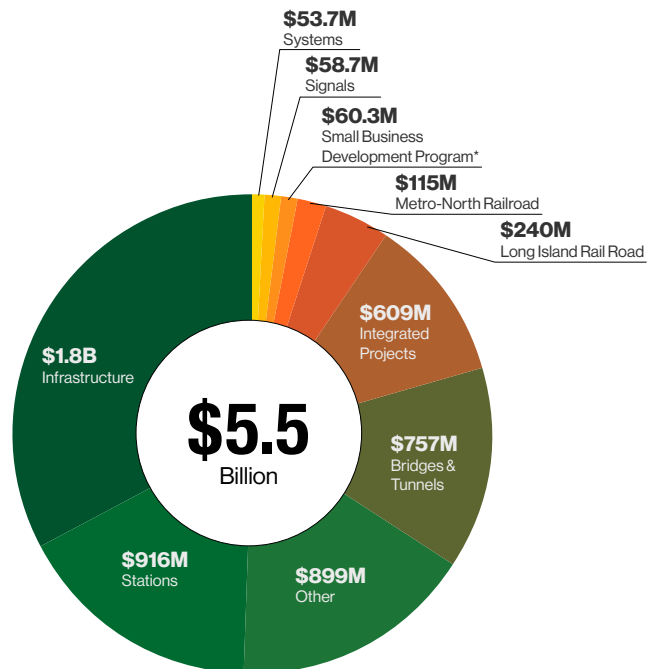
Commitments value reflects the amount of work getting started – a key milestone resulting from dedicated efforts by C&D and partner operating agencies to identify asset needs, structure the right project, design and bundle the package of work, and draft the appropriate contracts. In 2024, these commitments include continuing repair of Park Avenue Viaduct, purchase of 225 battery electric buses, and repair of the East River Tunnel following impacts from Superstorm Sandy.



**2024 Commitments**  
by C&D Business Unit

# Completions

Completions values reflect the amount of work C&D got done and the value put into use for the system and for riders. In 2024, projects that reached substantial completion included resiliency improvements at 207 St Yard, ADA upgrades on the subway and commuter rail, and station improvements along the Harlem Line.



**2024 Completions**  
by C&D Business Unit

# The 2025-2029 Capital Plan

## The proposed 2025-2029 Capital Plan builds on progress.

By improving how we Execute the Program, Plan for the Future, and Build the Organization – C&D will take its place as a world-class capital agency. We've incorporated new ways to use technology to improve our system, rewritten our contract terms to more reasonably share responsibilities and risks with our contractors, and increased our capacity to deliver on our commitments. By prioritizing new trains and buses, more elevators, new signals, and the hidden infrastructure that underpins the whole system, this plan keeps us on the path to more reliable, accessible, and sustainable transit in New York.

## Maintaining funding to meet system needs is critical now – and for the future.

This year, C&D is developing the 2025-2029 Capital Program, which will translate the needs of the system into tangible capital projects. Released at the end of this year, the next capital program will be the heart of the work of C&D – and represents the foundational investment into the MTA of the future.

**The MTA will work with partners in Albany to ensure the program is funded and work can begin on these vital projects.** Uncertain funding at the start makes it challenging to plan and award projects, leading to cascading effects that will impact future work. This plan is structured for realistic delivery within procurement and project management capacity, outage constraints, and the volume of work private industry partners can take on. Adequate funding is critical, as the size of the need identified in the Capital Plan is in line with reports published by independent groups including the Citizens Budget Commission, the New York State Comptroller, and JP Morgan.

**There's no New York without transit.** Transit makes New York possible. With investments like the 2025-2029 Capital Plan, we make not only transit possible but remarkable economic activity. MTA capital investment generates thousands of good-paying jobs across industries throughout New York State, especially in construction and building trades, professional services, and manufacturing. It will support over 72,700 jobs and \$106 billion of economic output – including supporting diverse firms, paying out over half a billion to minority- and women-owned businesses each year. The MTA drives New York's \$2 trillion economy, as millions of residents of the region depend on trains and buses to get to work and other destinations every day. The future rides with us.

## What's in the Plan

The 2025-2029 Capital Plan includes several projects to expand and improve the MTA system. More importantly, it is to keep physical assets in good working condition.

### Provide Frequent and Reliable Service

- New Railcars
- Modernized Signals
- Start building the Interborough Express

### Improve the Customer Service

- More Accessible Stations
- Improved Station Environment
- Enhanced Communications & Safety

### Take Action on Climate Change

- Zero-Emission Bus Fleet
- Subway Stations Safe-Guarded from Stormwater Flooding



# Our Strategic Priorities

As we reflect on 2024 and plans for 2025 and beyond, these strategic initiatives guide our work

## EXECUTE THE PROGRAM

The heart of C&D's mission is executing our capital program better, faster, and cheaper. In 2025, this means continuing to deliver on historic 2020-2024 commitments and putting the pieces into place to successfully launch the next 2025-2029 Capital Program.

### Set 2025-2029 Capital Projects Up for Success

By using innovative delivery models and bundling projects together, C&D is keeping pace with our historic Capital Program.

### Improve Cost and Schedule Performance

C&D is containing costs through initiatives at every stage of the project lifecycle and delivering projects on time with improved performance tracking and management.

### Build Contractor Capacity & Diversity

Delivering a historic amount of capital projects requires a robust and deep bench of contractors. C&D is building capacity for small businesses and maximizing contracting opportunities for qualified, diverse firms.

## PLAN FOR THE FUTURE

C&D is making sure the MTA stays ahead of the curve through strategic initiatives and long-term planning.

### Advance Long-Range Planning

C&D is making sure the MTA stays ahead of the curve through strategic initiatives and long-term planning.

### Build in Sustainability and Resilience

C&D is taking on climate change, protecting our system from its effects, and advancing the MTA's leadership in greenhouse gas emission reduction.

### Leverage MTA Assets

C&D is undertaking strategic moves to leverage MTA assets to generate benefits for our system and working with cities and communities to foster transit-oriented development.

## BUILD THE ORGANIZATION

C&D is a young, dynamic agency that will innovate in the field and in our offices across the region.

### Grow In-House Capacity

C&D is growing our organization to meet the ambitious mandate of our Capital Program.

### Harness Data & Technology

C&D is improving data tracking, deploying cutting-edge technology, and upgrading tools to enable more robust project management.



*Foundation Work at Jamaica Bus Depot*



Track Panel Installation on the Culver Line

# **EXECUTE THE PROGRAM**

**The heart of C&D's mission is executing our capital program better, faster, and cheaper. By streamlining capital program functions into one agency, we can learn from and replicate best practices as we manage and structure contracts and implement cost containment initiatives at scale.**

# Set 2025-2029 Capital Projects Up for Success

The historic MTA Capital Program means we must deliver capital projects at an unprecedented scale. By using the right delivery models and bundling projects together, C&D can get more work done.



*Tunneling Under Grand Central Terminal*

## Strategic Project Bundling

Each year, much of the system's elevators, escalators, platforms, and other critical infrastructure need repairs or upgrades. To save money and reduce disruptions, C&D bundles similar projects so they can be tackled at the same time. For the 2025-2029 Capital Plan, we're refining this by focusing more on location, allowing us to address things like station improvements and tunnel repairs during the same service outage.

### Bundling

Bundling projects together can achieve economies of scale and geography while streamlining project management.

#### Implementing Efficient Project Bundling Strategies

Packaging work together into "bundles" allows us to reduce costs by leveraging economies of scale within our contracts and to minimize disruptions by combining work into fewer track outages. As we launch the 2025-29 Capital Plan, we're advancing our bundling strategies to organize planned work by line segment. By bundling various project types together within a given line segment, we'll be able to further minimize disruption to customers, reduce our project support costs, and maximize our productivity – ensuring that we are performing as much work as possible whenever we take a portion of track out of service.

## Strategic Delivery Model Selection

Choosing the right approach to manage projects helps ensure better results. For projects where the details must be clearly defined upfront, C&D uses a version of Design-Bid-Build contracting that includes heavy budget and schedule incentives for contractors. For projects with more opportunities for innovation, Design-Build brings an integrated team of designers and contractors together from the start for greater collaboration. C&D has adopted advanced methods such as Public-Private Partnerships (P3), Progressive Design-Build, and "A+B" bidding, which weigh both cost and schedule in selecting contractors, to deliver projects better, faster and cheaper.

### Delivery Model Selection

Selecting a delivery model involves evaluating project complexity, risk allocation, and schedule requirements. This assessment ensures that the chosen approach aligns with the project objectives, helps optimize resources, and fosters innovation. This, in turn, improves overall project outcomes and delivers greater value.

#### Second Ave Subway: Saving Millions through Innovative Contracting

In Phase 1, the Second Ave Subway project was executed through 10 Design-Bid-Build contracts, which created many coordination challenges. To improve contracting and project management, C&D took a new approach for Phase 2. We reduced the number of contracts to just four. Two of these contracts – advanced utility relocation and final station fit-outs – will remain Design-Bid-Build to minimize risk, while two will be structured as Design-Build to take advantage of industry innovation. Selecting the right delivery model led to design refinements, resulting in over \$300 million in cost savings.



## ADA Project Highlights

### Improving Interborough Connectivity

The MTA is making accessibility improvements beyond stations. In 2024, C&D delivered three significant projects that created or enhanced bike and pedestrian access across three boroughs. The Henry Hudson Bridge now has an ADA compliant connection at both ends of the bridge, improving accessibility between Spuyten Duyvil and Inwood Hill Park. Bike and pedestrian access was reconfigured between the Robert F. Kennedy Bridge and Randall's Island to now have three new Bike-Ped paths. At the Cross Bay Bridge, we replaced the pedestrian ramp with an ADA compliant Bike-Ped Ramp—the final link in an ADA-compliant Bike-Ped path across the entire bridge connecting Broad Channel to the Rockaways.

### Direct-To-Platform Elevators

ADA projects frequently have complex designs and can sometimes require service outages. Value engineering during the design of the Woodhaven Blvd JZ station allowed C&D to design elevators that rise directly from the street to the elevated platform level, instead of requiring complicated mezzanine level connections. This design innovation saved \$40M compared to the initial estimate and brought accessibility to a bustling commercial corridor.

### Increasing Competition

Sourcing materials and equipment is a challenge the MTA faces, stretching an already thin supplier capacity. By structuring contracts through bundling and using alternative delivery models, a public-private partnership attracted additional elevator manufacturers to supply the MTA. We have also been able to attract more talented contractors and vendors to work in our system, bringing more competition that leads to savings.



ADA Work at Borough Hall

# Advancements on Major Projects

## COMPLETED

### 207 St Yard

As the main storage for the **A** and **C** subway lines, the 43-acre yard not only underwent repairs for damages caused by Superstorm Sandy, but this project also fortified the vital facility against future flooding events. C&D strategically aligned five separate projects under one project management team for a single point of accountability to control cost, schedule, risk, and safety. With a focus on sustainability, the project incorporated recycled green asphalt and electric equipment, or the cleanest diesel emissions available for non-electric equipment, reinforcing MTA's commitment to climate control.

This project incorporated a new approach for the MTA and C&D, micro-tunneling, to avoid relocation of an existing utility line. As a result, the innovative method reduced the project cost by \$8 million, avoided open street excavation, and demonstrated the effectiveness of our third-party coordination.



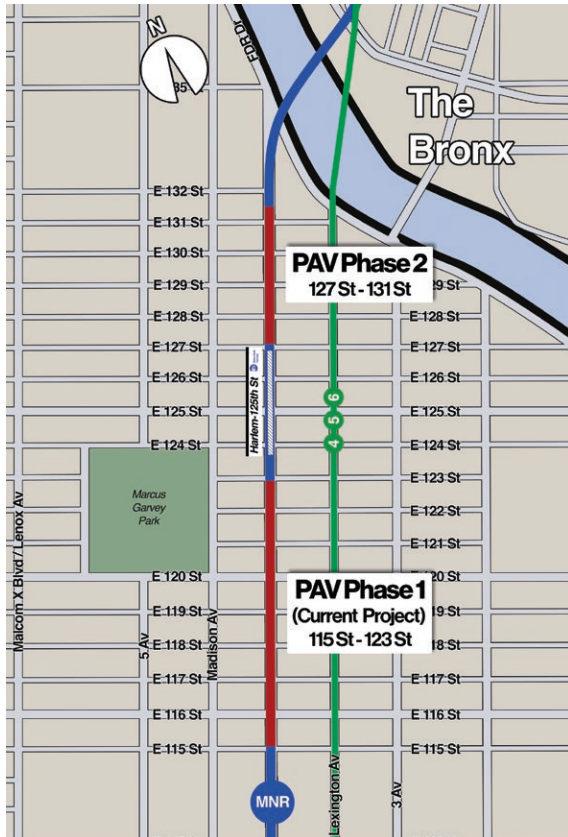
## ADVANCING

### Crosstown **G** CBTC

C&D is building a world-class signaling organization with a transformed approach to delivering signal modernization.

At \$25 million per mile, Crosstown **G** is nearly 50% cheaper than previous CBTC projects. This cost efficiency allowed us to do 17 more miles of CBTC than previously planned, extending the project from the original Hoyt-Schermerhorn station to Church Av. We changed our procurement approach to a Design-Build contract and included long-term maintenance and support while minimizing the amount of non-signals scope.

This project implemented a 'CBTC Centric' way to simplify the system and reduce legacy wayside equipment.



## ADVANCING

### Park Avenue Viaduct Phase 2

The second phase of the Park Avenue Viaduct (PAV) replacement project will replace the over 130-year-old railroad viaduct from E127th Street to E132nd Street, along Park Avenue in Harlem. The project encompasses the entire replacement of the existing viaduct including foundations, structure, tracks, power, communications and signals. Extensive and ongoing repairs are continuously needed to keep the structure in a state-of-good repair.

This project is being delivered using innovative means and methods that don't impact Metro-North service. We've successfully accelerated the project, saving 21 months on phase 1 and advancing phase 2—saving another 30 months.

## ADVANCING

### Rockaway Resiliency

The **A** line is the most critical transportation means for the Rockaways. Super Storm Sandy caused major damage to the Hammels Wye Viaduct that connects the subway to the peninsula, causing years of issues that resulted in many train delays. Using the most efficient construction method, a 17-week full shutdown, and with close coordination with city agencies, the United States Coast Guard, and maritime operations, this project will protect the Rockaway line from the effects of age and climate change.

This project benefits from a Design-Build approach. We are constructing over 1,400 feet of the viaduct and upgrading the South Channel Bridge to improve the reliability and safe operation of the **A** Line.



# Improve Cost and Schedule Performance

It's not just about getting projects out the door and completing them—containing cost is also essential to making the most out of every dollar invested in the transportation system. Through initiatives at every stage of project planning, development, contracting, and delivery, C&D is bringing costs down and completing projects on time, while delivering greater value.



*Bridge Abutment Placement on Penn Station Access Project*

## Define the Right Scope

Clear upfront planning is essential for keeping costs under control and avoiding delays. Establishing the right project scope from the start prevents costly changes down the line and ensures projects are adequately funded. Early collaboration with the operating agencies (New York City Transit, Long Island Rail Road, Metro-North Railroad and MTA Bridges & Tunnels) creates opportunities for design reviews and other cost-saving refinements, leading to better project delivery.

## Value Analysis

### ADA Package 2: Reducing Costs Through Direct Street-To-Platform Elevators

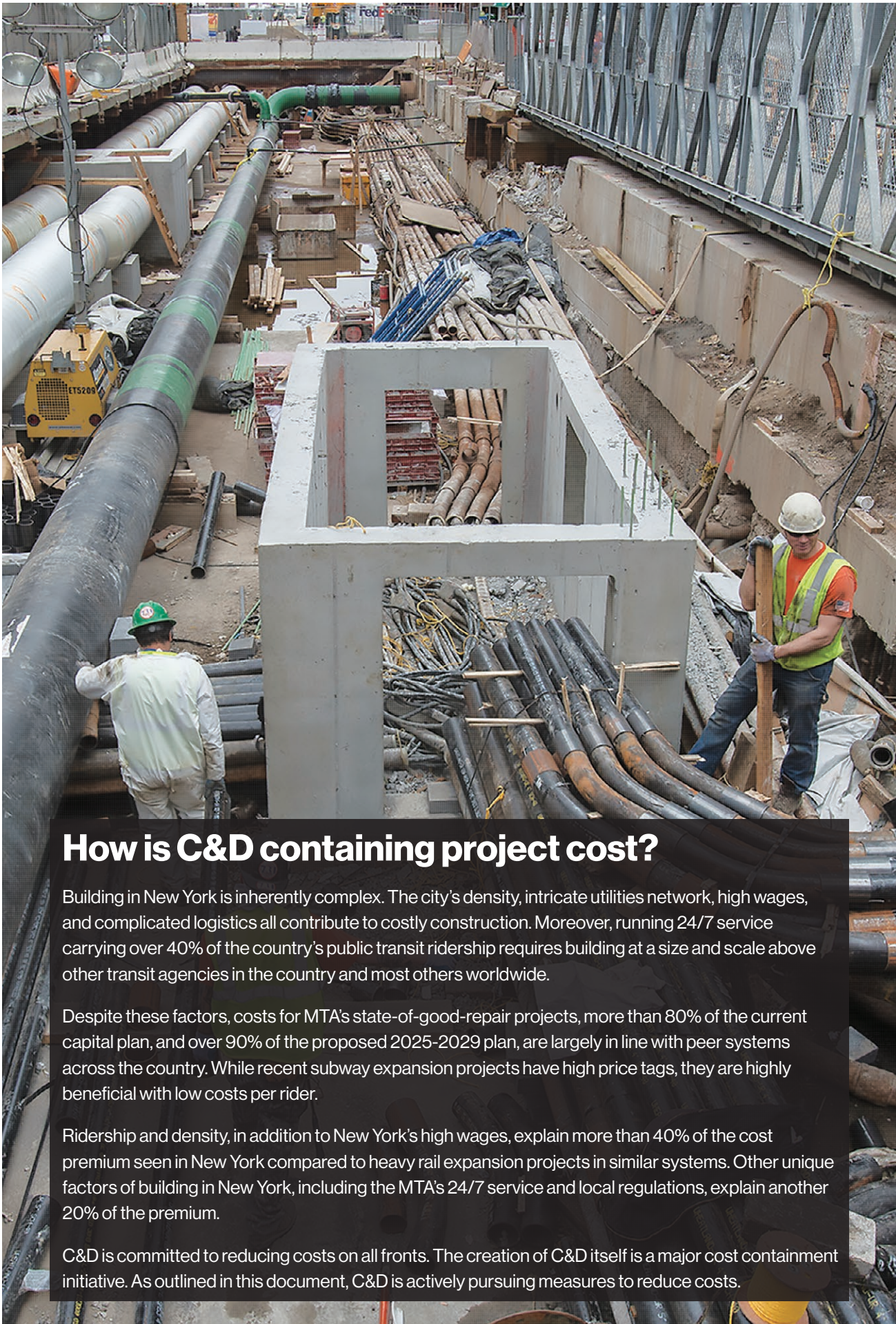
During the design phase of ADA Package 2, Woodhaven Boulevard was planned to have three new elevators. Upon design review, our project team identified an opportunity to simplify the design and build the project cheaper and even better. By creating an alternate design with direct street-to-platform elevator, we eliminated the need for one elevator. This not only reduced construction complexity, but also saved \$40 million compared to our initial estimate while improving passenger flow and convenience for our riders. C&D will be applying this innovation to more than 20 stations going forward.



*Street-to-Platform Elevator at Woodhaven Blvd*

## Reduce Customization

Design specifications tell contractors what is needed for a project, but over time, they can become overly prescriptive, limiting creative thinking. To fix this, C&D has shifted to performance-based specifications that focus on meeting project goals and delivering value. A new set of unified Project Requirements and Design Criteria (PRDC) has replaced outdated Master Specifications, and further simplifications are planned. C&D is also updating specifications to industry-standard CSI (Construction Specifications Institute) format to improve clarity and consistency. All of this has led to high-quality projects being delivered on time and within budget, while also making our projects more affordable.








## How is C&D containing project cost?

Building in New York is inherently complex. The city's density, intricate utilities network, high wages, and complicated logistics all contribute to costly construction. Moreover, running 24/7 service carrying over 40% of the country's public transit ridership requires building at a size and scale above other transit agencies in the country and most others worldwide.

Despite these factors, costs for MTA's state-of-good-repair projects, more than 80% of the current capital plan, and over 90% of the proposed 2025-2029 plan, are largely in line with peer systems across the country. While recent subway expansion projects have high price tags, they are highly beneficial with low costs per rider.

Ridership and density, in addition to New York's high wages, explain more than 40% of the cost premium seen in New York compared to heavy rail expansion projects in similar systems. Other unique factors of building in New York, including the MTA's 24/7 service and local regulations, explain another 20% of the premium.

C&D is committed to reducing costs on all fronts. The creation of C&D itself is a major cost containment initiative. As outlined in this document, C&D is actively pursuing measures to reduce costs.

Major Cost Driver	How does it impact cost?	What C&D is doing
<p>More MTA Control</p>  <p><b>Project Delivery</b></p>	<p>The area most within MTA control, C&amp;D has learned from past practices to improve project delivery – including reforming contracting terms that previously added onerous burdens (and cost) on contractors, to empowering project managers to make decisions quickly.</p>	<ul style="list-style-type: none"> <li>» Innovative contract models and incentives</li> <li>» Contract bundling</li> <li>» Aggressive project management</li> <li>» Improved digital management and analytics system</li> </ul>
 <p><b>Scope &amp; Design</b></p>	<p>Project scopes must be sized and equipped to meet the needs of the high ridership in the system – which often means MTA stations and systems must be larger and more complex than projects in smaller, lower-ridership systems. Historically complex design specifications and lack of clearly defined up-front scope has also led to increased costs.</p>	<ul style="list-style-type: none"> <li>» Better project definition and value analysis</li> <li>» Removing unnecessary tasks where possible</li> <li>» Less-customized specifications</li> </ul>
 <p><b>Operating Constraints &amp; Regulation</b></p>	<p>Rare among major cities, MTA runs 24/7 operations, which means that new stations require redundant systems, and work on existing infrastructure requires resources to ensure site safety and provide diversion services. Moreover, regulations unique to New York lead to higher costs in areas like insurance.</p>	<ul style="list-style-type: none"> <li>» Reforms in outage and force account</li> <li>» Insurance reform</li> </ul>
 <p><b>Regional Labor &amp; Materials Cost</b></p>	<p>New York has some of the highest labor wages in the world – 50% more than similar U.S. cities and more than double that of international peers like London, Paris, and Madrid. This is particularly true for trades most commonly used in our projects, which are double even other high-cost U.S. cities like Chicago and San Francisco. We welcome good wage jobs for construction workers, but they lead to higher costs.</p>	<ul style="list-style-type: none"> <li>» Labor agreements to improve labor efficiency</li> <li>» Strategic sourcing opportunities</li> </ul>
<p>Less MTA Control</p>  <p><b>High ridership and built environment</b></p>	<p>The MTA accounts for 40% of all public transit riders in the U.S. This means that stations and systems must be sized to meet our higher ridership, from needing to accommodate longer trains to meeting code requirements around safe circulation for millions of riders per day. New York's dense built environment also contributes to high costs for real estate acquisition, utilities relocation, and logistics and transport costs.</p>	<ul style="list-style-type: none"> <li>» Improved utilities coordination and review</li> <li>» Joint development opportunities to reduce real estate costs</li> </ul>

### Our approach is showing results

Recent expansion projects, like Third Track, have seen significantly lower cost premiums compared to similar at-grade projects. This is evidence that the reforms put in place in recent years are working, and with the initiatives we commit to in this strategic plan, C&D is committed to going even further.

## Optimize Internal Resources

Beyond managing our contractors, cost-effective project delivery also means management of internal resources. C&D is developing new tracking and management tools for MTA force account (internal support resources) to better plan, allocate, and monitor where support is needed for projects. In addition, C&D has identified opportunities to avoid providing multiple large outages to different projects and facilitated coordination among many stakeholders, including the Under River Tubes security project with the Crosstown CBTC outage.

## Cost-Effective Utilization

### Maximizing Efficiency During **G** Train Outage

C&D has implemented a reformed approach to delivering signal modernization. For the **G** train outage, C&D coordinated multiple projects within the same track closure to maximize efficiency and reduce costs. In addition to essential CBTC signal upgrades and state-of-good-repair work, MTA partnered with Boldyn to install 5G infrastructure in tunnels, ensuring full underground cell service. This proactive planning minimized future outages, optimized force account resource allocation, and accelerated project timelines, delivering critical improvements with minimal long-term disruption.



Switch Installation During the 2024 **G** Train Shutdown

## Improve Coordination with Third Parties

Given the complexity and density of the New York landscape, construction often requires coordination with other public and private stakeholders – from utility companies to adjacent landowners to other public entities. Often, third-party coordination poses risks and delays to projects. To address this, C&D has worked to establish early and regular coordination with partners, establishing liaisons to regularly communicate with utility companies and City, State, and federal agencies. C&D also works closely with the private sector, leveraging partnerships to accelerate MTA projects and, through our External Partner Program, supporting safe adjacent private development work as required.

## Maximize Contractor and Consultant Performance

C&D relies on a deep pool of contractors and consultants to deliver a historic amount of capital work in the system. To ensure quality and performance, C&D has instituted performance-based incentives for designers, contractors, and construction management firms that tie payments high-quality results, adherence to schedule, and cost management. C&D has also overhauled its terms and conditions to be an 'owner of choice' for contractors. These changes better share risk and eliminate unnecessary burden for contractors, attracting more competition and lowering prices.

### Performance Evaluation Incentives for Consultants

C&D uses consultants for design, engineering, and construction management support. C&D has recently launched a Performance Evaluation Program (PEP) that ties financial incentives to performance.

#### Promoting High-Quality Work Through the Performance Evaluation Program

The implementation of PEP has marked a significant milestone in enhancing project management. Consultants are evaluated on the quality of their work, with payment docked for poor performance and increased for stellar performance. Both parties are now actively invested in the overall success of the project, driving continuous improvement and accountability in project delivery.

## Build Project Controls Infrastructure

Strengthening project oversight and efficiency requires standardized processes, better data-driven decision making, and improved coordination between financial and schedule management. By implementing our new Project Management Information System (PMIS) we will align contract and payment applications to more aggressively control projects. These improvements will provide clearer visibility into costs, timelines, and risks, helping to reduce delays and improve forecasting.



*Platform Replacement on the Flushing Line*

# Case Study: Second Avenue Subway - Cost Containment in Expansion

The Second Avenue Subway is a project that has been long-awaited since its first groundbreaking in the 1970s.

Phase 1, which extended the **Q** line north and added new stations at 72 Street, 86 Street, and 96 Street, was completed on December 31, 2016. This was the largest subway expansion in the MTA system since its extension of the Flushing **7** line to 34 Street-Hudson Yards was completed in 2015, and its size and scope embodied the many challenges and complications of building in Manhattan's dense environment that can impede construction. With Phase 2 underway, the MTA is taking the lessons learned from Phase 1 and implementing improvements in project management practices to contain costs, reduce delays, and speed up construction.

Phase 2 will further expand the **Q** train to create new stations at 106 Street, 116 Street, and 125 Street, where it will directly connect with the Lexington Avenue **4 5 6** line and facilitate transfers to the Metro-North Railroad at Park Avenue.

Phase 2 is an example of how MTA Construction & Development has successfully implemented innovative cost-containment measures in megaprojects.



Second Avenue Subway Station in Construction

# Scope

## Phase 1 Lesson

Build only what you need.

## Phase 2 Approach

Reuse existing tunnels.  
Reduce station sizes and back-of-house space.

Compared to Phase 1 designs, Phase 2 significantly reduces the amount of “back of house” area, which is the mechanical space needed to operate the system.

The new stations still need the 10-car platform, but past the ends of the platforms, space for our user groups and other back-of-house needs are minimized.

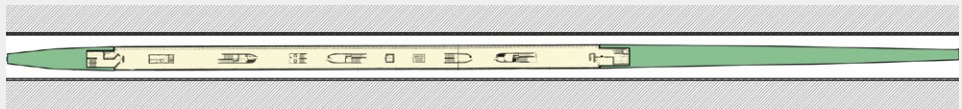
Where these critical facilities - like mechanical and ventilation equipment - are necessary, we moved the uses above ground into ancillary buildings, which are almost 10 times less expensive to build than underground areas. And we can leverage transit-oriented development opportunities to finance these buildings at an even lower cost to the MTA.

## Station Size Comparison

Taking from cost containment lessons learned during Phase 1, the MTA has reduced station sizing to only what is necessary. In particular, back of house uses have been dramatically reduced in the underground station caverns.

Back of House      Platform & Mezzanine

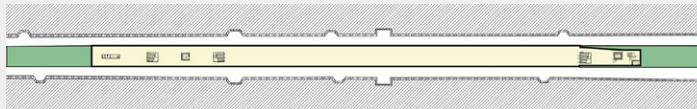
**96 St Station**  
Phase 1 Terminal Station



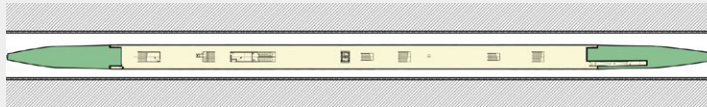
**106 St Station**



**116 St Station**



**125 St Station**  
Phase 2 Terminal Station



# Planning

## Phase 1 Lesson

Avoid surprises with utilities and real estate complications.

## Phase 2 Approach

Advance utility relocation and real estate acquisition earlier in initial contracts.

Unanticipated utility relocation led to 12 months of delays across the ten contracts in Phase 1. Leading into Phase 2, we had the foresight to stack utility relocation at the beginning of the contracts, as well as perform extensive geotechnical and invasive testing work to better prepare for cut and cover construction. Acquiring real estate upfront is another critical lesson learned from Phase 1 that limits the risk of delays and prevents steep price increases in the negotiation process.



# Management

## Phase 1 Lesson

Streamline contracts, especially at key interfaces

## Phase 2 Approach

Reduce the number of contracts by bundling them together, leverage Design-Build contracting, and utilize outside expertise.

Phase 1 was comprised of ten contracts. Dividing up the job into individual contracts divided authority and made management and accountability very difficult, resulting in conflict, delay, and expensive change orders. Bundling the many contracts into four has resulted in much more streamlined project management approach for Phase 2. In addition, moving to Design-Build has proved to be successful in shifting risk and holding contractors accountable.

### Phase 1 Contracts

<b>1</b>	TBM Launch Box and Tunneling, 69 & 72 St Shafts
<b>2A</b>	96 St Station: Heavy Civil, Structural & Utility Relocations
<b>2B</b>	96 St Station: Shell Concrete, Backfill, Permanent Utilities & Street Restoration
<b>3</b>	63 Street & Lexington Avenue Station: Reconstruction
<b>4B</b>	72 St Station: Cavern Mining, G3/G4 Tunnels & Heavy Civil Structural
<b>4C</b>	72 St Station: Entrances Ancillaries, Station Finishes & MEP Systems
<b>5A</b>	86 St Station: Excavation, Utility Relocation and Road Decking
<b>5B</b>	86 St Station: Civil/Structural
<b>5C</b>	86 St Station: Entrances Ancillaries, Station Finishes & MEP Systems
<b>6</b>	Track, Signal, Power, Communication & MEP System Equipment

### Phase 2 Consolidated Contracts

<b>1</b>	Utility Relocation (DBB)
<b>2</b>	Tunnelling, Excavation of Entrances/Ancillaries (DB)
<b>3</b>	116 St Station Rehab & 106 St Station Box (DB)
<b>4</b>	Tunnel & Station Fit-out & Systems (DBB)

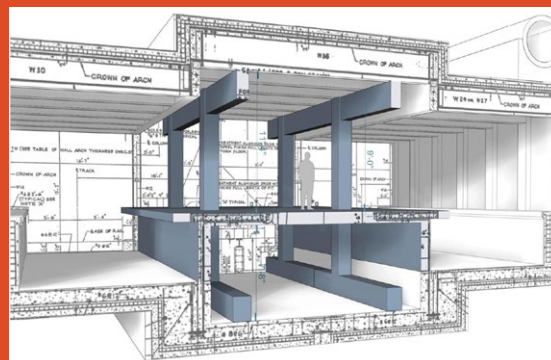
# The Results

Second Avenue Subway Phase 2 will revolutionize transportation options in East Harlem, and the cost containment reforms learned from Phase 1 allow the MTA to deliver three new ADA-accessible subway stations and many other benefits better, faster, and cheaper. We've saved \$1 billion in the Phase 2 design, and value engineering underway has the potential to save us an additional \$300 million.



## Spotlight: Reusing Tunnels

Using the original 1970s tunnels that were slated for demolition will save Phase 2 at least \$500 million. Utilizing this existing infrastructure and remaining at this depth for much of the 2nd Avenue portion ensures that the project can use cut and cover for the first station at 106th Street, which is a more cost-efficient means than tunnelling.



## Case Study: Tackling fare evasion by reimagining the fare gate

Fare evasion has risen dramatically since COVID-19 pandemic. This is a threat not just to MTA's service but also to the safety and satisfaction of our riders. That's why the MTA is taking a holistic approach to address the multiple causes of fare evasion. C&D is enhancing infrastructure that reduces fare evasion and helps maintain a fair and secure system. By improving access control, we are creating a more reliable and equitable transit experience for all riders.

### Modifying Existing Infrastructure

C&D has deployed cost-effective fare array modifications such as physical additions to the tri-wheels turnstile and cabinets to discourage jumping over. As a result, subway turnstile jumps decreased by 20% at 4 pilot stations.

### Improving and Modernizing the Fare Array

C&D is rolling out new fare gates without compromising on safety or accessibility. In 2025, we are testing new, state-of-the-art fare gates in the subway system that will feature wide paneled doors to deter fare evasion while making it easy for people, including those with accessibility needs, to pass through.

C&D is refining designs of future gates to enhance their functionality and make them more resistant to fare evasion. As a commitment to long-term solutions that will reduce both opportunistic and intentional evasion, new fare gates will be replaced at more than 150 subway stations through the proposed 2025-2029 Capital Program.



*New Fare Gate Rendering*

# Case Study: The Next-Generation Fare Payment System with OMNY

MTA customers are choosing the convenience of contactless payment when it comes to fare payment, and that is only offered by OMNY. After being brought into C&D, OMNY was structured as a megaproject, implementing a stronger project management strategy with the resources in place to execute it. With a refined and precise scope that puts our customers first, we will deliver new features better, faster, and cheaper.

## Scope

- Integrate all MTA fare systems supporting a single customer account across agencies.
- Achieve a fully integrated OMNY Revenue System.
- Replace legacy MetroCard vending machines to OMNY vending machines. Replace current Railroad ticket vending machines (TVM) that are past their useful life.
- Roll out OMNY cards for all MTA fare classes, including Student and Reduced Fares.

## Results

- 85% customer satisfaction
- 76% adoption rate of regular fare customers
- 10% year over year market share increase
- 500+ OMNY Vending Machines installed
- Selected a three-vendor approach to accelerate delivery schedule of TVMs
- ALL MTA fare classes have access to OMNY

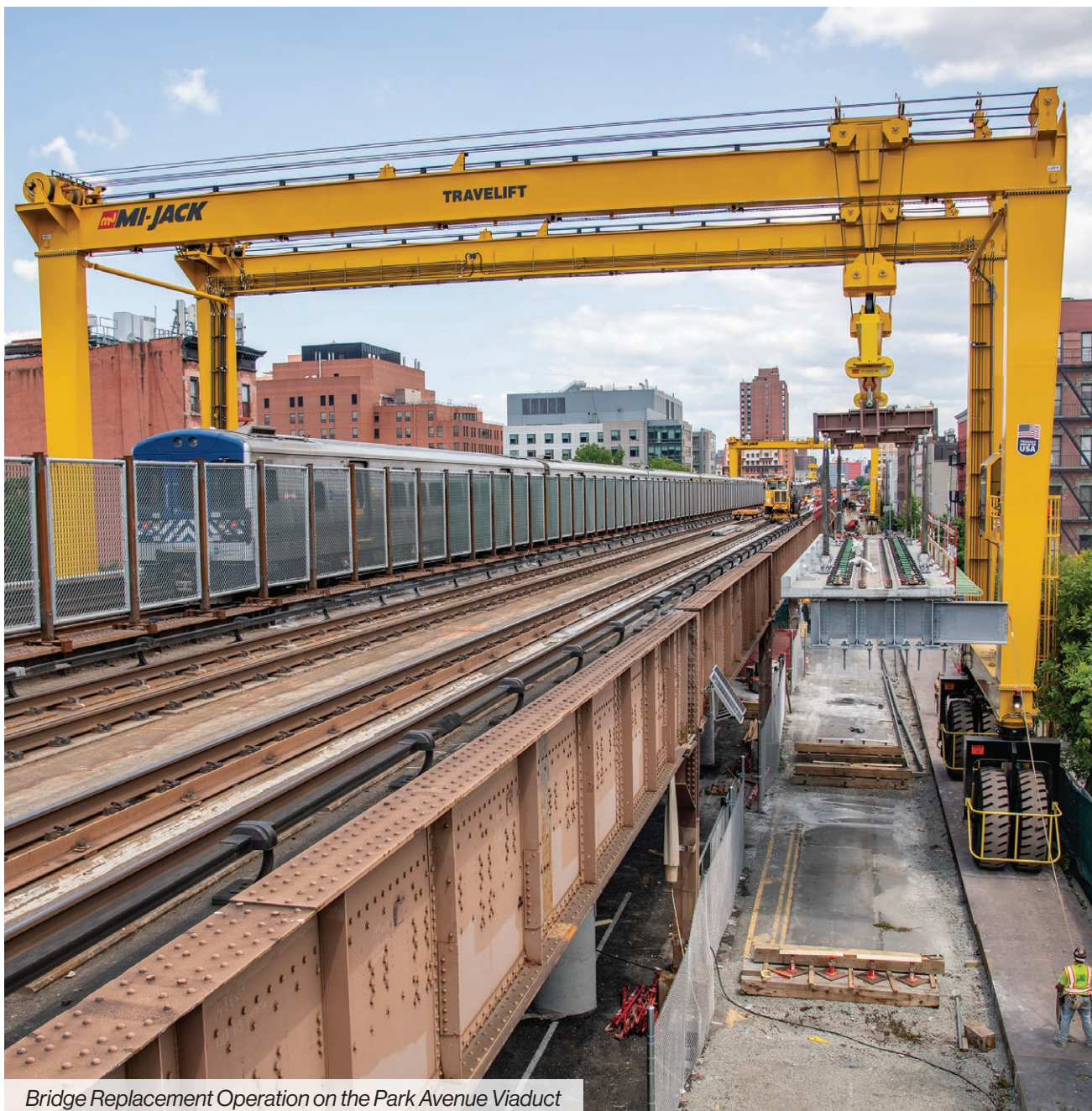


With this new structure, we're delivering the new fare payment system across all operating agencies on budget. Thanks to the technology offered with OMNY and the infrastructure delivered by C&D, we're ready to build on the successful, best-in-class fare payment system of MTA TrainTime that is offered for our Railroad customers. We are on track to expand access and reach full implementation across all ridership groups, integrating OMNY to major MTA affiliates such as JFK AirTrain and Hudson Rail Link and with agreements that are in the works for NICE Bus and Bee-Line Bus customers.

*A Customer Using an OMNY Vending Machine*

# Build Contractor Capacity & Diversity

**Fostering competition and diversity in C&D's contractor pools and labor force advances equity and creates a larger pool of diverse, qualified contractors and a labor force that can build projects in C&D's pipeline.**



*Bridge Replacement Operation on the Park Avenue Viaduct*

## Attract More Competition

Delivering on C&D's ambitious capital program requires a robust and deep pool of capable contractors. Key to this is attracting more competition to bid and execute on C&D projects – which not only grows our bench but also keeps costs competitive. To achieve this, C&D is committed to targeted industry outreach, sourcing projects of diverse sizes and scopes, improving the ease of the bidding process, and pursuing a more balanced annual procurement cycle so that contractors have more time to respond to requests, ultimately fostering more competition.

## Continue MWBE, DBE, and SDVOB Contracting

C&D works closely with the MTA's Department of Diversity and Civil Rights to maximize contracting opportunities for diverse businesses. For Fiscal Year 2024, the MTA was the top New York State agency in Minority- and Women-owned Business Enterprise (MWBE) expenditure, totaling \$754 million, or approximately one-third of State payments. For the fourth year in a row, the MTA exceeded the Governor's 30% target with 34% MWBE participation. Moreover, C&D contributed \$263 million for Disadvantaged Business Enterprise (DBE) firms and \$39 million for Service-Disabled Veteran-Owned Business (SDVOB) firms.

C&D continues to seek ways to create opportunities in its consulting and construction contracts, such as through discretionary solicitations to qualified MWBE, DBE, and SDVOB firms for design and engineering. In addition, we are committed to increasing diversity within our MWBE community so that contracting opportunities benefit all historically disadvantaged groups.

## Diverse Contracting

The MTA has committed a historic amount to historically underutilized businesses as part of the 2025-2029 Capital Plan, with billions in contracts to be awarded to New York State Certified Minority- and Women-Owned Business Enterprises (MWBE), Service-Disabled Veteran-Owned Businesses (SDVOB), and/or Disadvantaged Business Enterprises (DBE).

### Meet the Primes: Proactively Connecting MWBE Firms with Large Contractors

To jump-start the efforts of diverse contracting, the MTA hosted an event in 2024 attended by over 250 businesses that connected existing MTA prime contractors with potential MWBE subcontractors. In an effort to increase awareness and open contracting opportunities, C&D is affirming the MTA's commitment to ensure participation on at least \$1 billion of work by MWBE and DBE firms every year.



## Build Capacity for Small Businesses

C&D is committed to supporting the growth of small businesses – many owned by women or people of color. Through the Small Business Program, C&D helps to grow emerging contractors through classroom and on-the-job training, technical assistance, access to capital and bonding, and bidding opportunities. In 2024, C&D awarded \$32 million of projects to firms in its three small business programs and successfully worked with State partners to raise the cap on project size – allowing firms to bid on projects up to \$5 million up from \$3 million.

Going forward, C&D will take additional actions to support emerging diverse businesses; expanding the program with new participants, increasing the number of bidding opportunities made available, ensuring awards to diverse firms, and improving financing support for businesses in the program.

## Create Hiring and Training Opportunities

Besides contracting opportunities, C&D is ensuring project benefits accrue to the communities where projects take place through its local hiring pilot. For projects in the pilot, goals are set so that 20% of the New York labor force on projects come from local or economically disadvantaged ZIP codes near the project site. C&D is also working with labor and training partners to launch pre-apprenticeship training opportunities to facilitate the hiring of local residents into well-paying union careers.

### Local Hiring

With local hiring requirements, community members benefit from the construction of transportation projects, not just the end result.

#### Rockaways Resilience and Rehabilitation: Investing in Local Communities

In the Rockaway Line Resiliency and Rehabilitation project, which kicked off in late 2024, C&D has hired over 80 workers who either live within the project zip codes or in economically disadvantaged zip codes. To raise awareness about the opportunity of union-wage jobs on this project, C&D has worked with local unions and held a job fair at the Far Rockaway YMCA. With the project still only partially complete, local workers have earned over \$2.5 million in union wages - money which is going directly back into the communities where the project is based.



Rockaway Line Hammels Wye Replacement Project



*Bridge Girder Delivery for Jamaica Capacity Improvements, Phase 2*

# PLAN FOR THE FUTURE

The creation of C&D integrated capital planning across the MTA which allows us to better prioritize and meet critical goals. From sustaining capital investment in the system to meeting the needs of climate change and beyond, C&D is ensuring our transportation system will thrive through the 21st century and beyond.

# Advance Long-Range Planning

To meet the changing needs of the region, C&D undertakes rigorous, data-driven planning. A successful capital program ensures the MTA can continue to serve millions of daily riders across the vast system of buses, subways, regional rail, tunnels, and bridges.



*Rendering of an Interborough Express Station*

## Secure Funding and Implement the New 5-Year Capital Plan

C&D has been developing the next slate of critical transit investments for New York—first by diligently documenting the condition of our six million assets into a comprehensive 2025-2044 20-Year Needs Assessment and then prioritizing the system's needs. The 2025-2029 Capital Plan is a result of that work – a strategic set of investments that are the most critical to address in the next five years. A range of factors helped shape the plan: benchmarking against other transit systems and private-sector companies with significant infrastructure portfolios scaling investment to match our \$1.5 trillion system, adjusting for inflation to accommodate changes in construction pricing, and considering the MTA and industry capacity by ensuring that C&D and our contractors can execute the work.

## Advance Promising Projects

As part of the 20-Year Needs Assessment, C&D conducted its first Comparative Evaluation, a transparent method to evaluate potential expansion projects for prioritization based on criteria such as cost-effectiveness, equity, and resilience. Additionally, going forward, C&D will advance long-term strategic planning priorities such as resilience efforts on the Hudson line, subway heat mitigation, and major infrastructure projects such as the Grand Central Artery and Harlem Line Station Reconstruction. C&D is creating investment strategies for large asset groups like telecommunications, power systems, and shops and yards, laying the groundwork for the next generation of transformative capital investments in the region.

### Program Level Planning

Coordinating the execution of interconnected strategic initiatives ensures the alignment and support of the Capital Program across C&D's various business units. Through collaboration, these groups review project and asset needs, prioritize their sequencing, and develop strategies to efficiently deliver them over the course of upcoming capital programs.

#### Holistically Planning for the Grand Central Artery

The Grand Central Artery is comprised of one New York's most iconic buildings, Grand Central Terminal, and three distinct structures: Grand Central Train Shed, Park Avenue Tunnel, and Park Avenue Viaduct, which are over 100 years old and must be rebuilt, improved, or significantly repaired to keep Metro-North service safe and reliable. Following the 20-Year Needs Assessment, C&D is continuing to push forward with a strategic, long-term multi-phased execution of priority investments across the entire Grand Central Artery. Thanks to \$25 million in savings from the current phase of the Grand Central Train Shed, we are able to start design on the next phase ahead of schedule.

## Improve Planning Platforms & Processes

Another focus is on enhancing tools and workflows to support more effective project management. This includes creating a new dashboard for improved tracking, integrating Enterprise Asset Management (EAM) and enhancing inspection processes for timely, accurate data to inform decision making.

## Advance Regional Planning

C&D is establishing a structured approach for consistent and transparent project evaluations to support regional planning efforts. By conducting the Regional Rail Network Strategy Study, we can streamline assessments, save time and resources, and ensure capital projects are better aligned with the agency's strategic priorities.

### Program Level Planning

#### Improving Regional Mobility Through Comprehensive Planning

Regional Planning is looking holistically at our regional rail network to better understand the needs, constraints, and opportunities to leverage the network through targeted improvements. This will be done in two parts:

1. A high-level regional scan of the overall rail network and
2. More specific feasibility studies of potential targeted improvements.

The goal is to identify capital improvements that will enhance regional mobility, improve reliability, add capacity where necessary, and address changing customer needs.



Track Work on the Jamaica Line



Traffic on the Verrazzano-Narrows Bridge

# The Future Rides With Us

## MTA's 20-Year Needs Assessment

In October 2023, the MTA released its 20-Year Needs Assessment, a broad, comprehensive evaluation outlining the MTA region's transportation capital needs for the next generation. This document provides an extensive, long-term view for the MTA and the investments needed to improve the system for the future. The proposed 2025-2029 Capital Plan refined, prioritized, and packaged these needs. The five-year horizon provides a more informed and reasonable time period for projecting budget requirements. It allowed us to group needs based on anticipated schedules and resources—and to bundle projects strategically to minimize impacts to riders.

## A data-driven approach

Hundreds of expert staff from across every MTA agency have spent the past two years examining every element of the MTA's \$1.5 trillion worth of assets, using a robust combination of new, groundbreaking tools, agency data, customer surveys, and long-established inspection protocols, to provide unprecedented insight into the state of our system. Highlights of our sources of data include:

1



Our agencies perform regular and comprehensive **inspections of the conditions of the assets**. These inspections and engineering insights underpin all our findings. Without these, it would be impossible to know the condition of the system.

2



As we implement our **Enterprise Asset Management System**, we have the capability to track the performance of each individual system component. For example, systems like EAM help us to gain insight on where some assets have a pattern of many corrective work hours.

3



Our **customer surveys** help us to understand what customers care about most, particularly reliability, safety, and on-time performance.

4



Our new **climate planning division used geospatial analysis** to identify emerging threats.

5



Our comprehensive **analysis of regional trends** and emerging travel demand helps us to anticipate where new pressures will be made on the system.

6



Our first ever **Comparative Evaluation** systematically compares the costs and benefits of every potential system expansion project, to help us identify the wisest investments, with the greatest impacts.

The 20-Year Needs Assessment looked at nearly 6 million assets and components across our entire system and have put us in a position to implement our prioritized investments.

## Subway Cars

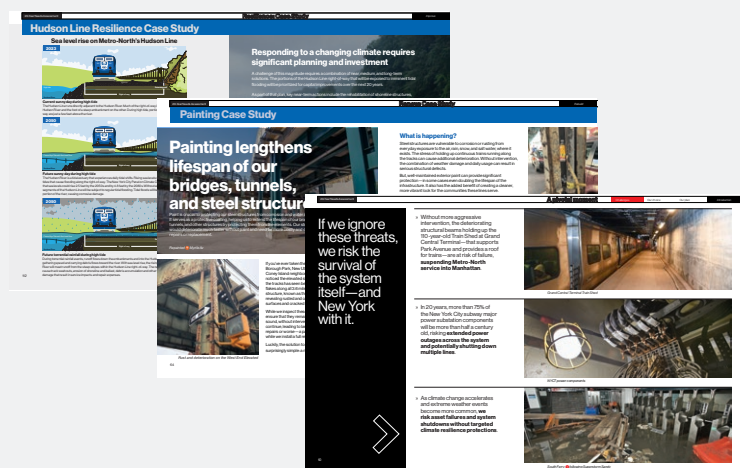
Over 1,700 passenger railcars will be at or beyond their expected useful lives within the next Capital Plan period, with the oldest approaching 50 years in service. Investing in regular railcar replacement is crucial to keeping subway service reliable. Older railcars are more prone to breakdowns, require more frequent and costly maintenance to keep in service, and are less comfortable for our passengers due to worn interiors. In the 2025-2029 Capital Plan, we will make subway service more reliable and accessible with car purchases that will replace 1,495 of the oldest subway cars.

## Line Structures

Line structure assets have not received adequate investment in past Capital Plans. As a result, the rate of deterioration is now accelerating, underscoring the need for investment. Over time, exposures to the elements and to salt and chemicals deployed at the street level, as well as heavy usage, result in structural defects to concrete and steel. By repainting elevated structures, we prevent deterioration of exposed elevated steel structures. Our new, more comprehensive approach to painting means we only need to repaint structures every 30 years instead of the previous 15-year standard. In the 2025-2029 Capital Plan over 20 miles of structures will be repainted and have defects repaired.

## Communications and Signals

Communication assets support train operations, provide key service updates to passengers, increase security within stations, and promote efficient fare collection. Most of Metro-North's signal systems were installed more than 30 years ago, with over 50% of its 231 signalized miles in poor or marginal condition. Metro-North's aging signal and communication systems have critical obsolescence issues and are incompatible with future needs. In the 2025-2029 plan we will continue a multi-phase program to replace aging signal systems on the Hudson Line, design of signal systems on the Harlem Line, end-of-life replacement of other signal asset, and carrying out systemwide signal field infrastructure component upgrades.



To see the full plan, please visit [future.MTA.info](https://future.MTA.info)

# Build in Sustainability & Resilience

**New York’s mass transit system powers one of the world’s largest regional economies and enables it to avoid 20 million tons of carbon emissions annually. The MTA moves millions of passengers every day to their destinations which encourages dense, efficient land use and keeps cars off the road. Because of these factors, New York City metro residents have the lowest carbon footprint in the United States. Investing in mass transit is one of the most effective ways to achieve climate sustainability targets.**

**Global climate change is already affecting our region, and C&D is designing projects with protective features to keep our system running in the face of extreme weather events.**



*New dual mode MNR locomotive*



*Zero-Emission, Battery Electric Bus at a charging station*

## **Integrate Resilience and Sustainability into Capital Planning**

C&D is advancing climate sustainability initiatives to reduce the MTA's own greenhouse gas emissions without compromising the safety, affordability, and reliability of MTA services. C&D released the first agencywide Sustainability Framework in 2023 – committing the MTA to reducing its greenhouse gas emissions by 85% by 2040. In 2024, C&D released a Climate Resilience Roadmap, laying out a series of actions that will guide future capital investments. Significant investments related to climate are included in the 2025-2029 Capital Program, including protecting 20 miles of the Hudson Line that are most vulnerable to stormwater runoff.

## **MTA as Climate Change Solution**

We are keeping our promise on climate sustainability by making meaningful investments to modernize facilities, expand our zero-emissions fleet, and use energy efficiently. Our progress demonstrates a tangible commitment to building a cleaner, more sustainable MTA.

### **Jamaica Depot: Transitioning to Zero-Emission Buses**

The transition of the entire 5,900 bus fleet to zero-emission is the major component of our strategy to reduce MTA's operational greenhouse gas emissions 85% by 2040. While the transition involves purchases of zero-emission buses, it also requires major investments in our aging portfolio of bus depots so they can serve new zero-emission buses. C&D's reconstruction of Jamaica Bus Depot in Queens exemplifies proactive climate action at multiple levels. In addition to providing a new home for up to 300 buses, the project will accelerate the zero-emission bus transition with new charging infrastructure for battery-electric buses and the option to accommodate more in the future. The building itself will be consistent with LEED standards for sustainability and will incorporate a green roof to make the building and surrounding neighborhood more resilient to extreme heat and stormwater flood risks.

## Advance Projects to Combat Climate Risks and Reduce Emissions

C&D is mitigating the impacts of flooding on MTA infrastructure by fortifying assets vulnerable to coastal and inland flooding and working with external agencies to reduce the impacts of stormwater runoff caused by torrential rain. In 2023, C&D also initiated a Clean Construction program to track and reduce construction-related emissions associated with construction materials, including concrete, steel, glass and asphalt. This year, C&D is advancing capital priorities around sustainability and resilience for the 2025-2029 Capital Program, including the procurement of electric buses, installing new stormwater protections at vulnerable stations and yards, and safeguarding our vehicular bridges.

### Strengthening Clean Construction Practices

#### Reducing Emissions Through The Clean Construction Program

The construction of buildings and infrastructure represents a significant component of annual global greenhouse gas emissions. Design choices can dramatically reduce the emissions of construction projects. In 2023, C&D announced that it would track construction-related greenhouse gas emissions and verify the carbon content of concrete, steel, asphalt, and glass used in its projects. In January 2024, we strengthened this commitment by issuing a revised concrete specification that establishes a maximum allowable carbon content. As more projects deploy these requirements, C&D will track the performance and costs of low-carbon materials and designs, with the goal of mandating further reductions in 2025. C&D will also evaluate the feasibility of low- and no-emission construction equipment this year.

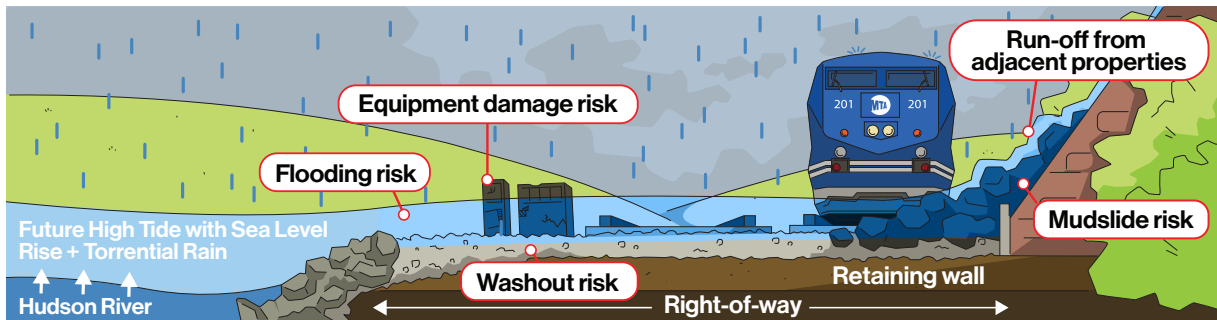


Track Replacement at Court Square Interlocking

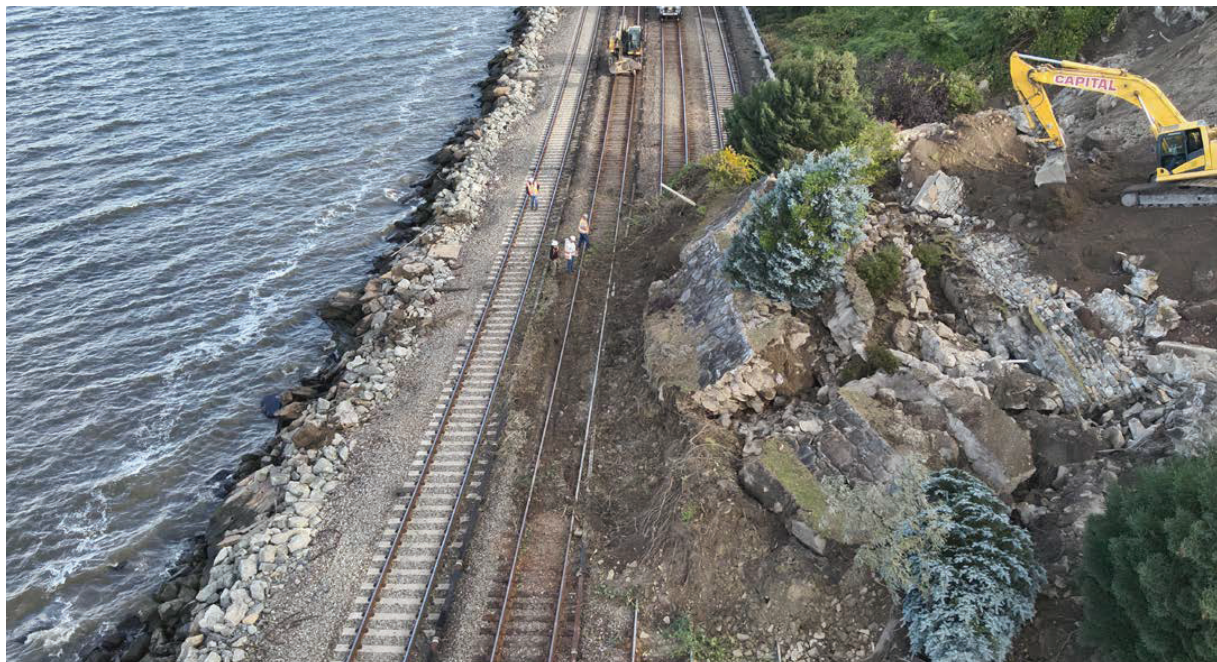
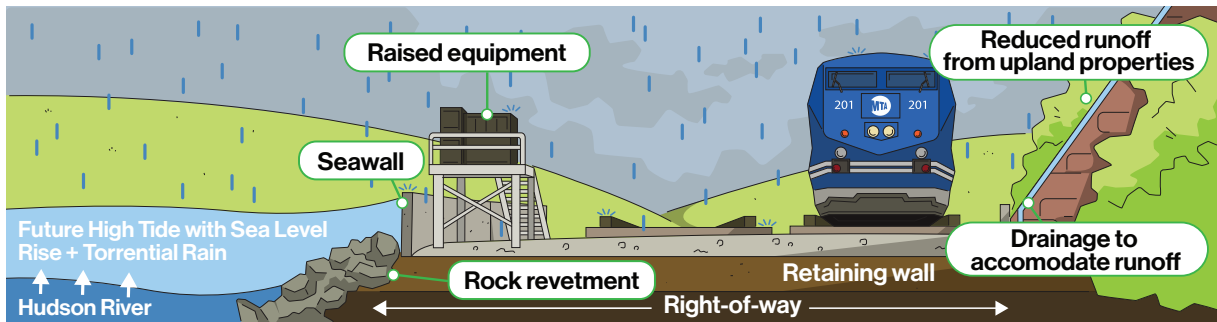
# Protecting the MTA from Severe Weather

The increased frequency and intensity of torrential rain driven by climate change can severely disrupt transit services for millions of riders. As described in the MTA Climate Resilience Roadmap, C&D is advancing multiple programs to bolster the resilience of transit infrastructure facing climate threats. For example, to prevent stormwater runoff into subway stations and tunnels, C&D is implementing surface-level protections such as elevated subway station steps and vents, and subway tunnel protections like pump room rehabilitations and capacity enhancements. On Metro North's Hudson Line, C&D is advancing a comprehensive approach with the Hudson Line Climate Resilience Blueprint, which accelerates upgrades of vulnerable infrastructure that safeguards the track from climate risks. C&D is also rebuilding a massive retaining wall in Yonkers that collapsed onto the Hudson Line during Tropical Storm Ida in 2021.

## Torrential rain and tidal flood threats on the Hudson Line



**Climate resilience protections can reduce flooding. The specific protection measures to be adopted will depend on localized conditions.**



# Leverage MTA Assets

**We help to leverage MTA's physical assets to provide greater amenities and generate revenue for the MTA. C&D is working with the private sector to integrate technology into our existing assets and with communities to improve access and convenience to transit.**



*Transit-Oriented Development at the Harrison MNR Station*



## Support Regional Transit-Oriented Development

C&D's Transit-Oriented Development (TOD) team collaborates with property owners and municipalities across the region to promote development around transit stations. Our focus extends beyond MTA-controlled real estate and considers a more holistic approach to the rider experience. We establish and promote long-term strategies for regional growth and help to implement site-specific and neighborhood improvements. This includes working with public agencies to help plan areas around stations and leveraging new developments to gain privately funded system improvements.

### Partnering with Communities

C&D is focused on ensuring New York City and suburban communities in our region with excellent MTA transit access take full advantage of those opportunities.

#### **Beacon: Advancing Housing Options Off Metro-North**

The MTA issued Request for Proposals to transform a surface parking lot adjacent to the Beacon Metro-North Station into a residential development with about 300-units of mixed-income housing and replacement parking for commuters. By using assets to support development that generates revenue for the Capital Program, transit-oriented development increases ridership while advancing regional planning objectives.

## Advance Public-Private Partnerships

Through transformative public-private partnerships such as our expanded license with Boldyn, C&D is improving customer mobile service and digital information screens that are keeping riders connected and informed using existing assets. C&D will continue to improve mobile service in 2025 by expanding cellular coverage to segments of underground tunnels.

### Leveraging Public-Private Partnership

The MTA's physical assets can be used in more creative ways to deliver infrastructure that serves both riders and MTA agencies.

#### Expanding No-Cost Connectivity with Boldyn Networks

In 2022, the MTA and Boldyn Networks expanded our partnership to provide cell coverage throughout all 418 track miles of subway tunnels, along with an expansion of Wi-Fi service to all 189 above-ground subway and Staten Island Railway stations. At no cost to the MTA or the public, the project is expected to result in over \$1 billion in benefit for the MTA and its customers.

In 2024, the Grand Central Times Square-42 St Shuttle became the first line to receive cell service through this new public-private partnership. Boldyn Networks has deployed a high-capacity, low-latency network for all tier-1 mobile carriers for riders to experience an enhanced connection on their mobile devices. Further installation of 5G infrastructure is happening in conjunction with other Capital Plan projects, with connectivity coming to the **G** train line, Joralemon Street Tunnel serving the **4** and **5** lines between Brooklyn and Manhattan, and five track miles from Grand Central station to as far north as 161 St.

## Generate Revenue & In-Kind Improvements

C&D actively pursues opportunities to leverage our infrastructure to generate benefits for the MTA. Because our transit system is a major factor in creating and enhancing the value of land in the MTA service region, it makes sense to reinvest some of that value back into the transit system. Zoning for Accessibility (ZFA) is one such mechanism for this. It is a citywide zoning initiative that will help make more stations in New York City accessible. By utilizing ZFA's transit improvement bonus provisions, stations are made partially or fully accessible at no cost to the MTA or taxpayers, ultimately saving millions of dollars and creating a better experience for riders and New Yorkers alike. Adopted in October 2021, ZFA has already spurred construction projects at Queensboro Plaza and 57 St stations, both to be complete in 2025.



Track Work on the Queens Blvd Line



*MTA Construction & Development All Hands Meeting*

# **BUILD THE ORGANIZATION**

**Planning and delivering complex transformational capital programs requires innovation in the field and in our offices across the region. C&D is maximizing our time and resources by deploying technology in new ways and organizing our teams more logically and efficiently. We are diversifying the skills of every team, implementing the latest technologies, and supporting our staff as they deliver on the ambitious goals in this plan.**

# Grow In-House Capacity

**At C&D, we are building an organization that meets the ambitious mandate of our capital program.**

**This starts with our talented and dedicated staff. We are setting our teams up for success, encouraging continued professional development, and recruiting for talent to maintain our pipeline.**



*MTA C&D Trainee Program Graduation Ceremony*

## Attract, Reward, and Retain Talent

C&D is growing and developing our staff so we can deliver on a historic pipeline of projects. Given the scale and complexity of our capital program, it's essential to maintain adequate staffing levels to ensure we have the capacity to meet our mandate. To achieve this, C&D is growing its staff and creating pathways for the next generation of employees. This includes our third cohort of C&D trainees, recent graduates in engineering, architecture and construction management, supported through an 18-month leadership development and project management program that includes technical skills training, site visits, and mentoring. This next generation of C&D leadership is already having a big impact on our work.

### Mentorship Program

#### Connect & Develop: Supporting Employee Growth

The Connect & Develop Mentoring Program is designed to support the professional growth and development of employees through meaningful mentorship and peer connections. Connect and Develop has two program tracks—(1) the mentor/mentee program geared toward a more structured growth framework with professional development and leadership cultivation and (2) the peer/buddy program intended to foster peer networking to help better navigate professional success at the MTA. After receiving over 200 applications, the program will commence with structured training in 2025.



Connect & Develop Mentoring Program Kick-Off Event

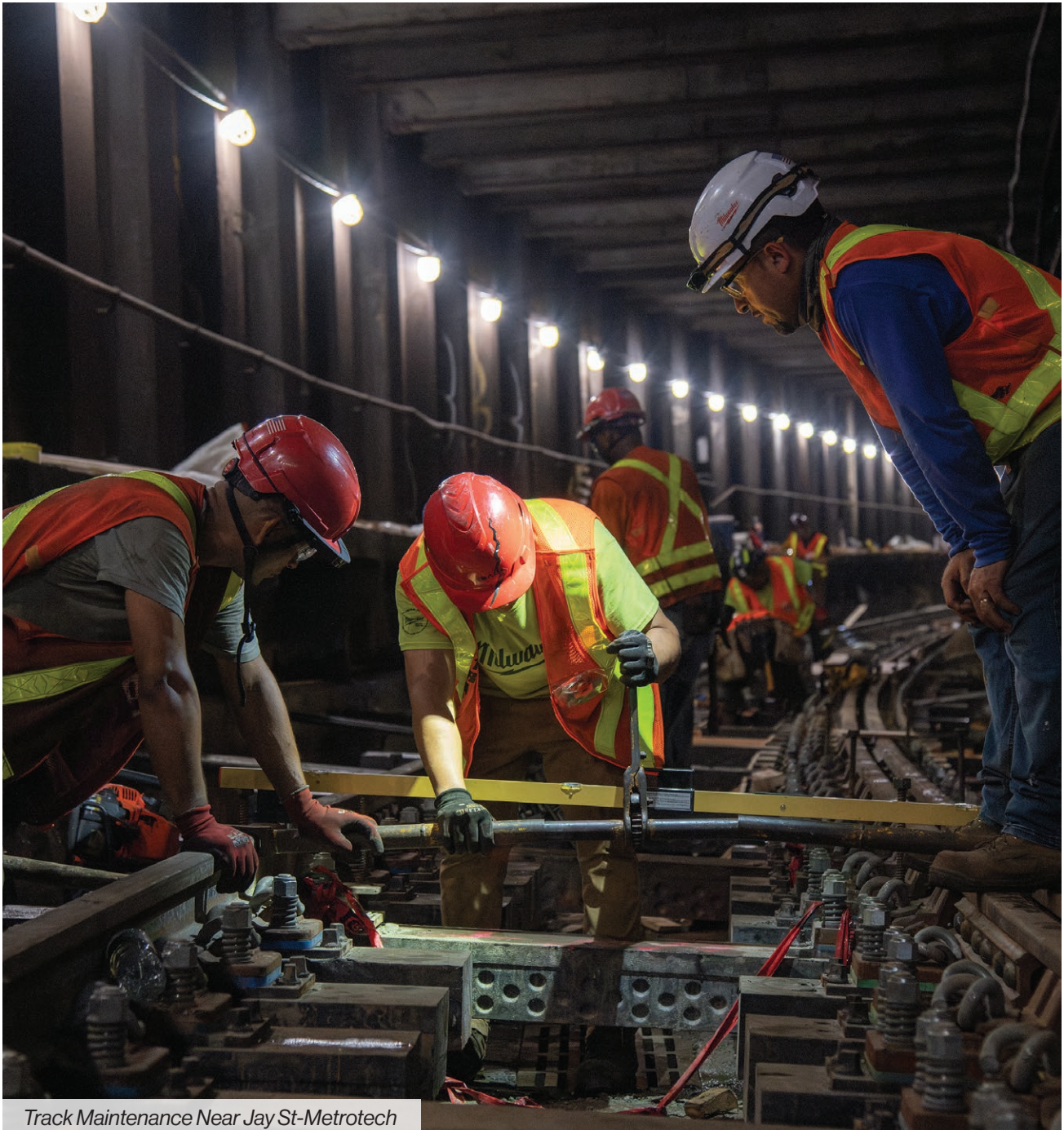
## Improve Agency Operations

C&D was created out of multiple agencies to unify administration and streamline project delivery. We continue to advance that goal as we create and consolidate multiple Business Units and departments across the organization to take full advantage of the expertise of our staff and build on best practices learned across different projects.

An efficient framework for agency operations is critical to creating a streamlined agency, which includes developing consistent policies and procedures that take best practices from legacy procedures while improving C&D's project development and delivery processes. This approach includes establishing company-wide KPIs to enhance project team accountability, tracking performance against schedule and budget, and the use of force account. Yearly agency-wide staff surveys enable C&D to identify areas for improvement while supporting successful employee experience initiatives and developing new culture-building initiatives and management tools.

# Harness Data & Technology

As we build the right teams at C&D, we also need to give them the right tools. Data and technology are essential to the innovation and rigorous project management and controls C&D relies on.



*Track Maintenance Near Jay St-Metrotech*

## Provide insight for decision-makers at all levels of the organization

We are enhancing how decisions are made across the organization by delivering clearer, data-driven insights at every level. A key part of this effort is the development of dynamic dashboarding tools that provide real-time visibility into performance and other key metrics. By equipping teams with intuitive, accessible analytics, C&D is enabling faster issue identification, improved risk management, and greater accountability. These tools will streamline reporting, continue to reduce inefficiencies and empower leaders and project executives to make well-supported, timely decisions.

## Develop an Integrated Data Strategy and System

To improve project management, C&D is developing an integrated data system that standardizes performance tracking across all departments. Moving to a new, unified platform will enable C&D to track and control programs with cutting-edge technology and digital workflows. The fully integrated system will raise overall performance by creating more visibility for project control on individual projects, while increasing accountability for strategic and operational goals across the capital program.

C&D is implementing immediate improvements in ways that project data is captured, stored, and analyzed. Standardized Primavera 6 (P6) project management schedules for project executives are now developed for all new projects to measure project performance and manage C&D interfaces and risks throughout the project lifecycle, helping C&D to become a leader in project controls. C&D has dedicated a team to data validation and quality control and implemented standard systems for project document management to improve workflows.

## Develop Digital Strategy Roadmap

Deploying cutting edge technology means that our teams and operating agencies get more accurate and timely information about the most critical physical assets across the system.

### Digital Strategy Roadmap: Modernizing Critical Digital Systems

In 2024, C&D made substantial progress across several key initiatives within the Digital Strategy Roadmap. The Estimating Workgroup developed functional requirements and completed a Request for Proposals, now in procurement, to modernize cost estimation processes. In project management, the Proof of Concept for the Project Management Information System platform was completed, with a pilot successfully validating the 'Rule of Credit' payment methodology, enhancing transparency and accuracy in contractor payments. The new Digital Implementation Office fostered organizational change through newsletters, workshops, and a training framework aligned with the Digital Strategy Roadmap.

## Leverage Innovative Tools, Techniques, and Technologies

C&D is committed to testing and utilizing cutting-edge construction, design, and project management tools and technologies. The growing use of Building Information Modeling (BIM) and Digital Twins on select projects will improve time and cost savings during project design, construction, and closeout. C&D has begun to use the modeling technology in stations and infrastructure to create a digital representation of MTA assets that provides more dynamic information to project teams.

C&D will continue to invest in identifying, piloting, and implementing new innovations in technologies and practices. This will include further implementation of a BIM/Digital Twin strategy and partnerships with academic and private partners. C&D will pilot the use of Unmanned Aerial Systems (UAS) for design, inspection, construction work, and land mapping of MTA infrastructure. Industry use of such technology for engineering and construction activities has significantly reduced time-intensive data collection in the field and its associated labor costs. Implementing the usage of UAS in certain projects will help to also reduce risks to worker safety.

## Technological Innovation

Deploying cutting edge technology means that our teams and operating agencies get more accurate and timely information about the most critical physical assets across the system.

### Deploying Innovative Asset Data Models

A standardized Capital Asset Data Model has been developed at C&D, aligning asset information across enterprise systems. This innovation ensures seamless alignment with Enterprise Asset Management (EAM) and data teams, improving data-consistency and decision-making. By creating a unified approach to asset tracking, C&D is positioned to optimize capital planning and long-term asset management.



*BIM model of NYCT Railcar Acceptance Facility*



*Drone flight in a tunnel*

# Initiatives & Milestones



*New Tenants in Vacant Retail Space*

# Execute the Program

## Set 2025-2029 Capital Projects Up for Success

### Strategically leverage different delivery models.

- ✓ Further improved Design-Build, A+B, P3 and Progressive Design-Build models.
- » Formalize delivery model selection criteria and apply to all projects in 25-29 Capital Program.

### Maximize value from contractors and consultants.

- ✓ Launched Performance Evaluation Program (PEP) with financial incentives for consultants performances.
- » Formalize PEP program.
- » Provide milestone-based payment incentives on 2025 consultant scopes.
- » Enhance completion incentives for Stations contractors

### Attract more bidders and increase competition across C&D projects.

- ✓ Implemented new electronic submission solution for bidding.
- ✓ Improved contract terms and conditions
- » Advance projects for earlier advertisement to increase competition.

## Improve Cost and Schedule Performance

### Enhance upfront scope definition with project baselining and change management process.

- ✓ Performed rigorous upfront scoping for all 25-29 early action projects.
- » Create Project Baselines for all 25-29 Capital projects.
- » Conduct multi-disciplinary design review and value engineering for all major projects.

### Limit over-customization through simplified design requirements, rigorous upfront scope review, and performance-based specifications.

- ✓ Simplified master specifications for Environmental and Customer Communications disciplines.
- » Modernize specifications to CSI format.
- » Create Master PRDCs for Metro-North and Long Island Rail Road.

### Reduce utilities costs and delays through improved coordination and review.

- ✓ New 'Project Controls Manual' under review to provide monitoring and analysis of cost and schedule delays caused by third parties.
- » Reduce change orders related to third-party activities.
- » Launch Public Service Commission-facilitated Utility Coordination Task Force

### Increase efficiency and productivity of outages and internal force account resources.

- ✓ Facilitated coordination between Under River Tubes security project and Crosstown CBTC to reduce outages.

- » Expand track barrier usage to an additional five identified projects.
- » Establish a standard outage planning and coordination process at both the project and program level to optimize scheduling.

### Continue to advance reforms to reduce cost premiums.

- ✓ Issued Project Controls Manual that includes estimating cost control and risk management.
- » Reduce number of approvals for mechanical specifications for DBB projects.

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## Build Contractor Capacity & Diversity

### Build capacity for MWBE, DBE, SVDOB firms, with focus on reducing disparity-in-disparity.

- ✓ Exceeded goals of spend on MWBE and DBE certified firms.
- » Expand qualified MWBEs working on C&D contracts.
- » Increase outreach to underutilized contractors.

### Grow the Small Business Development Program.

- ✓ Over 150 contractors from program received bidding opportunities.
- » Increase the number of firms within the Small Business Development Program & source higher-value projects to match new \$5 million cap.

### Expand local hiring and training opportunities

- ✓ Launched local hiring pilot.
- » Expand local hiring goals on major projects, including Second Avenue Subway Phase 2.

# Plan for the Future

## Advance Long Range Planning

### Secure Funding and Implement the New 5-Year Capital Plan.

- ✓ Developed and released the 2025-2029 Capital Program.
- » Secure funding and begin to implement 2025-2029 Capital Plan.

### Advance promising expansion and enhancement projects.

- ✓ Released a Request for Proposals to solicit consultant bids to begin the preliminary engineering phase of the Interborough Express.
- » Award tunneling contract for Second Avenue Subway Phase 2.
- » Commence Preliminary Engineering of Interborough Express
- » Award additional sectors of Grand Central Trainshed work

### Improve planning platform & processes.

- ✓ Developed a standardized Capital Asset data model for a Capital Asset Registry.
- » Launch a new dashboard for improved tracking and inspection for key asset areas.

### Advance regional planning.

- ✓ Began comprehensive planning for targeted improvements of rail network that will enhance regional mobility.
- » Initiate Rail Capacity studies.

## Build in Sustainability and Resistance

### Integrate resiliency and sustainability framework in capital planning.

- ✓ Released the Climate Resilience Roadmap that describes how we will adapt our systems to climate change over the next ten years.
- » Release Sustainability & Resilience design criteria for all projects
- » Develop plans to accommodate 2025-2029 Plan Battery Electric Bus order.

### Advance projects to combat climate risks and emissions reduction goals.



- ✓ Scoped light-duty zero emission nonrevenue vehicle charger installation.
- ✓ Hudson Line Climate Resilience entered planning/design phase.
- » Advance planning for key resilience projects, such as the Hudson Line.

## Leverage MTA Assets





### Support regional and statewide initiatives to foster transit-oriented development and encourage access to transit.

- ✓ Issued Request for Proposals to transform a surface parking lot adjacent to the Beacon Metro-North Station into a residential development with ~300 units of mixed-income housing.
- » Produce 3-year roadmap for MTA assets.
- » Commence disposition actions for key MTA TOD opportunities

### Advance Public-Private Partnerships.

- ✓ Equipped Grand Central/Times Square-42 St Shuttle  with 5G wireless connectivity.
- » Continue wireless connectivity expansion underground including Croostown  line, and Joralemon Street Tube.

### Generate revenue and in-kind improvements.

- ✓ Zoning for Accessibility program accessibility improvements under construction at Queensboro Plaza    and 57 St .
- » Raise revenue through TOD transactions.
- » Continue to improve accessibility through the Zoning for Accessibility program.

# Build the Organization

## Grow In-House Capacity

**Attract, reward, and retain high performing and diverse talent.**

- ☑ Expanded graduate trainees and interns.
- » Develop data-driven recruitment and retention plan to maintain staff levels to support ambitious capital program.
- » Reduce reliance on consultants as staffing levels increase

## Refine organizational operations.

- ☑ Created the Office of Corporate Performance.
- » Continue to develop improved policies & procedures.

## Harness Data & Technology

**Provide insight for decision makers at all levels of the organization.**

- ☑ Created dashboarding tools for internal project management and reporting.
- » Standardize data structure and continue rollout of analytical tools.
- » Hold quarterly KPI management sessions.

## Develop an integrated data strategy & system.

- ☑ Integrated PMIS Cost Codes into Primavera P6.
- » Launch 2025-2029 Capital Plan onto Project Management Information System (PMIS).

## Leverage innovative tools, techniques, and technologies.

- ☑ Contract and Payment applications processed using new methodology within PMIS.
- » Expand adoption of P6 cloud environment.
- » Develop a targeted training and outreach program to further support BIM/Digital Twin adoption.



Placing a Track Panel at Laurelton LIRR Station

For more information about current and upcoming C&D projects visit:  
[mta.info/agency/construction-and-development](https://www.mta.info/agency/construction-and-development)

For more information about the 2025-2029 Capital Plan visit:  
[future.mta.info/capitalplan](https://www.future.mta.info/capitalplan)

For more information about the 20 Year Needs Assessment visit:  
[future.mta.info](https://www.future.mta.info)



