

Delivering Infrastructure for Today and Tomorrow

2023 Year in Review & 2024 Strategic Plan



Construction & Development



Letter from the President

This Year in Review and Strategic Plan arrives at critical moment in the young history of MTA Construction & Development. The future of the capital program—and thus our ability to rebuild, improve, and expand the transit system that New York relies on—hangs in the balance.

Congestion Pricing is at the heart of it. In addition to reducing traffic and improving air quality, it is also the source of \$15 billion for transit and commuter rail projects, representing 30% of the 2020-2024 Program, and more than 50% of remaining funds after all the progress we've made on that program since 2021. With the lawsuits challenging the program, this funding is at risk, despite its benefits to the vast majority of commuters, 85% of whom use transit. Even as we remain confident in the resolution of these challenges, this will have major impacts. In February 2024, we announced that we will not be issuing new solicitations for construction contracts, with limited exceptions, while the MTA and our project partners defend litigation.

This inflection point comes at a moment when C&D has hit its stride, continuing to mature into a world-class capital construction organization. In 2023, we completed over \$7 billion in projects—the single highest dollar value in MTA capital history. Beyond the numbers, these completions represent the full promise of C&D's new way of doing things, with the completion of Design-Build projects like LIRR Third Track and smart resilience investments like the rebuilding and protection of Coney Island Yard.

We also awarded contracts for another \$8 billion in work, even with potential delays to the implementation of Congestion Pricing program requiring us to delay the start of another \$2 billion. Since 2021, MTA C&D has averaged more than \$9 billion in annual commitments, definitively confirming that we are able to keep up the pace and meet the demands of our capital program. Even at this breakneck pace, we've continued to prioritize cost containment. In 2023, our contract awards came in 6.2% below estimates, pointing to savings of nearly \$300 million.

We've set ourselves up for the future, too, flexing the muscle of the unified C&D planning function. The 20-Year Needs Assessment released last year was the most comprehensive in MTA history, evaluating nearly 6 million assets across the entire MTA system. It laid out in detail the urgent need for continued investment and set the stage for the creation of the 2025-2029 Capital Program as we continue to meet the transit system's needs.

2023 was a great year for C&D. 2024 will be even more consequential. Thanks to the hard work of the last few years, we've assembled an incredible team throughout the entire organization. I am confident we will meet its challenges and continue to deliver for New Yorkers.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jamie Torres-Springer'. The signature is fluid and cursive.

Jamie Torres-Springer
President,
MTA Construction & Development



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INTRODUCTION

East End Gateway entrance to Penn Station

Construction & Development



NY Gov. Hochul & MTA Chairman Lieber at event for R211 cars

The MTA is the lifeblood of the New York region.

Millions of New Yorkers depend on the subway, buses, commuter railroads, bridges, and tunnels to get them to where they need to go. High-quality public transportation underpins the region's economy, density, and way of life. Transit is also essential to the planet's future, with more than 20 million tons of carbon emissions avoided every year thanks to the service this infrastructure enables.

Maintaining and improving service is critical for the MTA to retain and grow ridership.

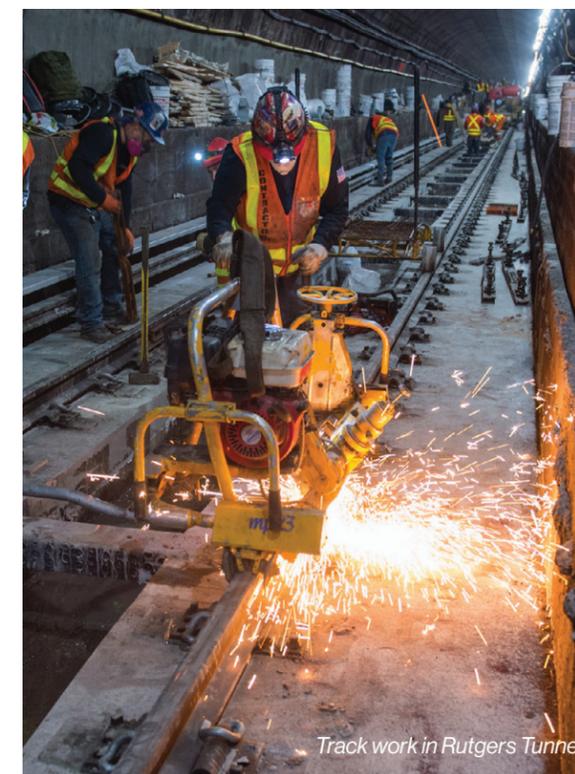
The MTA moves over 5.5 million subway, bus, and rail riders on an average weekday -- nearly 40% of all transit usage in the United States. In addition, the approximately one million daily users of MTA Bridges & Tunnels make it the largest toll agency in the country. Providing reliable service for these millions of MTA customers -- and continuing to attract generations of new riders as the region grows -- is the great responsibility of the MTA.

C&D plays an essential role.

Safe, reliable service is dependent on an infrastructure system that is modern, functional, and in a state of good repair. Six million MTA assets, valued at \$1.5 trillion, power the mobility of the nation's economic center. Continued investment into these assets -- some of which were built over a century ago -- is necessary to keep the system running, improve accessibility and resiliency, and grow the system to meet the changing needs of the New York region.

Delivering capital construction projects better, faster, and cheaper is the mission of C&D.

C&D was created in 2019 to bring together capital functions across the MTA and scale up innovations with combined oversight and management. From long-range planning to project development to contract award and construction delivery, C&D ensures the effective and efficient implementation of the entire MTA Capital Program.



Track work in Rutgers Tunnel

The 2020-2024 Capital Program

Today

The current \$55 billion Capital Program is the most ambitious in MTA history.

Approved in January 2020 and amended in July 2022 and July 2023, the 2020-2024 Capital Program invests \$55 billion into the region's subways, buses, railroads, bridges, and tunnels.

Capital investment is how we keep our core infrastructure running.

Ensuring state of good repair and keeping up with normal replacement of our existing assets is our first priority. In this Capital Program, more than 80% of funding is dedicated to renewing and improving our existing infrastructure. The remainder goes towards improving and expanding the reach of the MTA to serve even more riders.

C&D has made tremendous progress in delivering the capital program.

Despite impacts from COVID-19 disruptions during the first 18 months of the Capital Program, MTA C&D has scaled up its capacity rapidly, awarding an average of \$9 billion worth of projects annually since 2021. Through 2023, 46% of the Capital Program has been committed, with more projects in active procurement. Beyond improvements to infrastructure, the Capital Program generates tremendous economic activity – supporting over 57,000 jobs and \$62 billion of economic output – including support diverse firms, paying out over half a billion to minority- and women-owned businesses each year.



Reliability

On-time service that customers have confidence in

2023 Action: Reconstructed the over 100-year old Harmon Shop so Metro-North trains can be serviced more efficiently.



Resilience

A system that can withstand extreme weather

2023 Action: Completed installation of flood barriers at Coney Island Yard to protect against future climate risks after damage from Superstorm Sandy.



Longevity

A system that is built to last

2023 Action: Began vital repairs to the Park Avenue Viaduct – a 100-year old structure used by 98% of Metro-North trains.

Accessibility

Ensuring everyone can access and navigate the system

2023 Action: Made 8 subway stations ADA accessible and awarded contracts for 16 more.



Sustainability

Reducing the region's climate impacts

2023 Action: Purchased over 200 new Battery-Electric Buses as part of MTA's transition to a zero-emissions bus fleet by 2040.



Customer Experience & Safety

Providing a safer system for customers

2023 Action: Installed new, wide-aisle fare gates for improved accessibility and passenger flow at Atlantic Av-Barclays Ctr and Sutphin Blvd-Archer Av.



¹ Partnership for New York City, Economic Impacts of the Metropolitan Transportation Authority's 2020-2024 Capital Investment Strategy

What's Next...

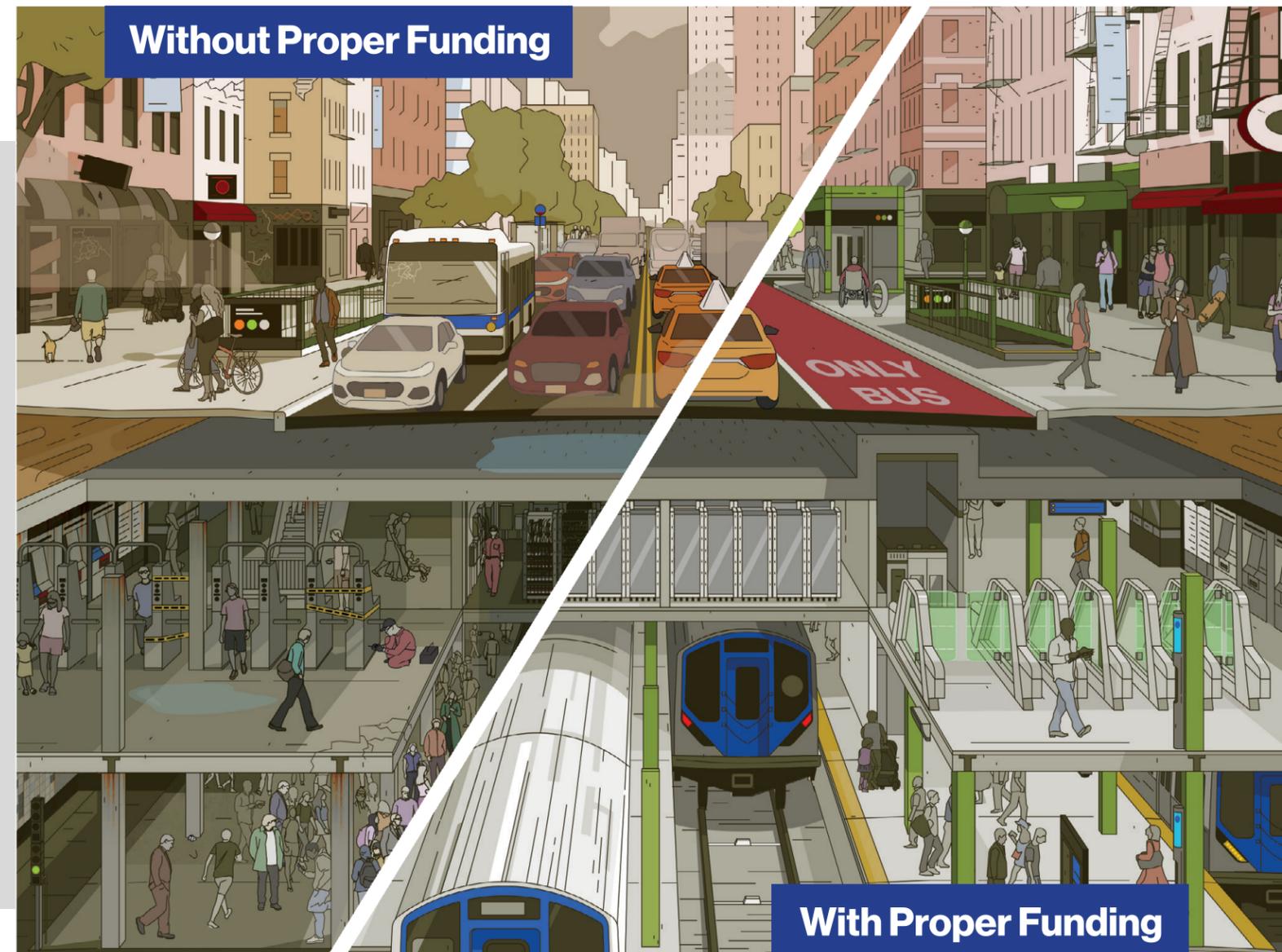
Tomorrow

There is more to be done.

In October 2023, the MTA released its 20-Year Needs Assessment, a broad, comprehensive blueprint 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. Assessing nearly 6 million assets, the 20-Year Needs Assessment offers a vision for a more resilient, reliable, modern system with sustained investment – and the risks to the MTA's aging infrastructure if capital needs are not met.

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 MTA's future.



Capital Funding

Central Business District Tolling

All of this relies on funding.

These investments in the transportation system are made possible by the support of our federal, state, and local funding partners and through initiatives like the Central Business District Tolling program, also known as Congestion Pricing.

Congestion Pricing is key to delivering the benefits of the program.

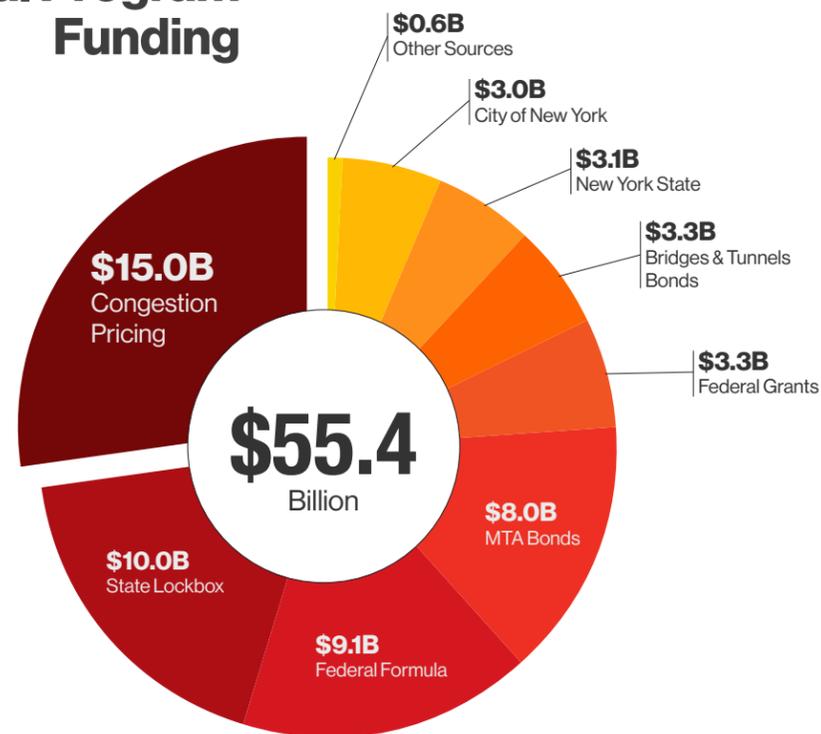
\$15 billion in critical funding—more than half of the remaining projects in the current program—relies on the successful implementation of congestion pricing. Congestion Pricing is necessary to advance some of the MTA's most important priorities—making the system more reliable, more accessible, and more equitable.

This includes projects that are essential to keep our system running, including critical signal modernization that improve reliability for 1.6 million daily riders on the Fulton **A C** and 6 Av **B D F M** lines, \$1 billion for additional commuter rail and subway cars, and repairs to structural, ventilation, and power systems. It also includes upgrades to accessibility at over twenty stations, 250 electric buses to meet the MTA's ambitious de-carbonization goals, and the expansion of Second Avenue Subway to 125 St.



Congestion pricing rally at Union Square

Capital Program Funding



Projects at risk due to Congestion Pricing delay:



Accessibility

Upgrades to make over twenty stations ADA accessible.



State of Good Repair

Critical repairs to structural ventilation and power systems.



CBTC

Signal modernization to improve reliability on the Fulton **A C** and 6 Av **B D F M** lines.



Second Avenue Subway

Future contracts to expand the Second Avenue Subway to 125 St.



Electric Buses

250 electric buses and investments at 10 bus depots that advance MTA's goals for a zero-emission bus fleet.



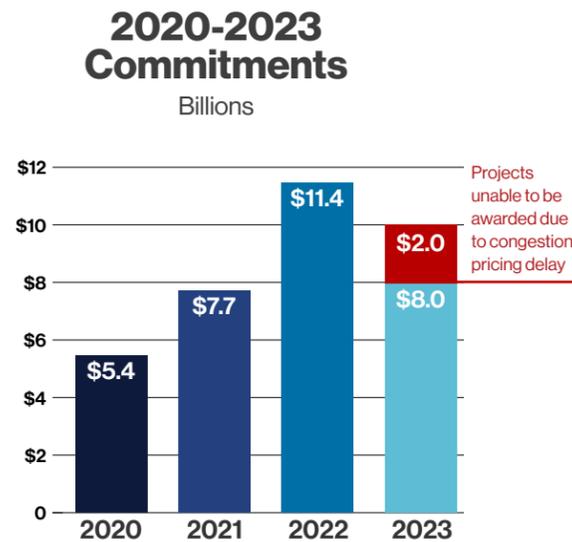
Rail Cars

Hundreds of additional subway and commuter rail cars.

2023 By the Numbers

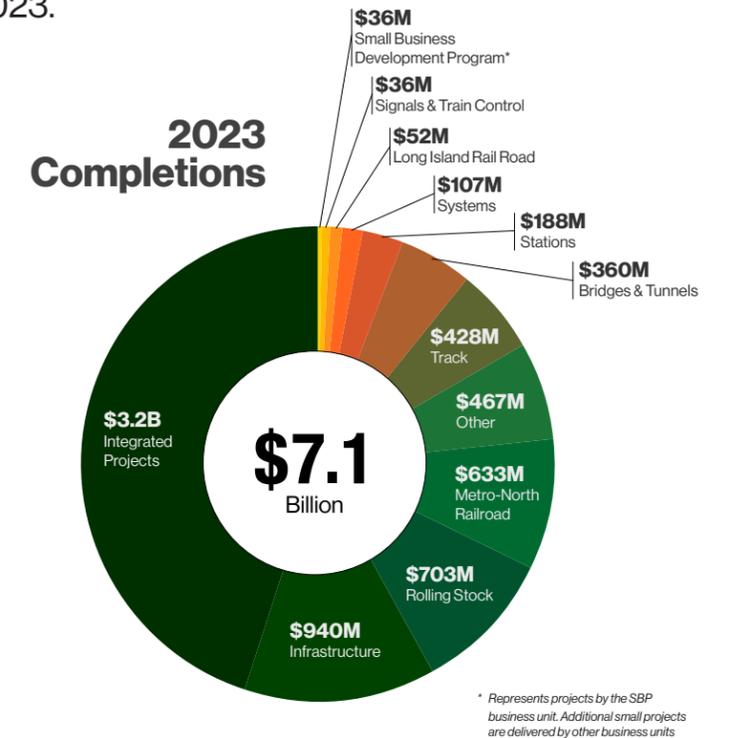
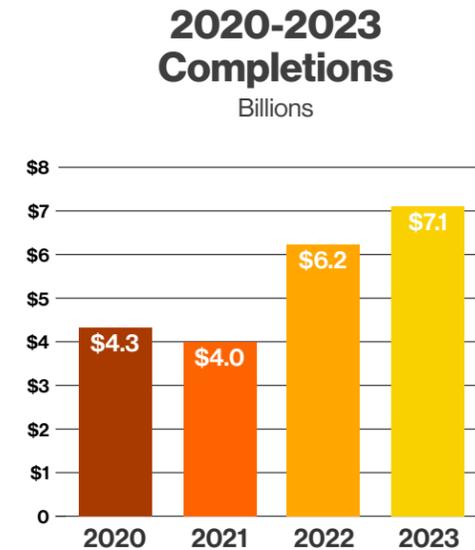
Commitments

Since 2021, MTA C&D has averaged over **\$9 billion** in annual commitments, initiating new work in critical areas.



Completions

MTA C&D continues to complete projects at a faster pace, including over **\$7 billion** in 2023.



Faster and Cheaper

C&D is delivering **faster** and more **cost effectively**, seeing project bids consistently come in under time and cost estimates.

\$272M

Savings on all contracts compared to estimate (6.2%)

\$151M

Savings on Design-Build contracts compared to estimate (5%)

3.5 Months

Time savings on average on Design-Build contracts

\$105M

Savings on A+B contracts compared to estimate (8%)

4 Months

Time savings on average on A+B contracts

Supporting Diverse Businesses

C&D plays a major role in supporting the MTA's payments for diverse businesses, which exceeded State goals at 37% Minority & Women-owned Business Enterprise (MWBE) participation in 2023.

\$833M

C&D total payments to Minority, Women & Disadvantaged Business Enterprises (MWD BE) and Service-Disabled Veteran-Owned Business (SDVOB) firms in FY2023.

\$449M

C&D payments to MWBE firms

\$11M

C&D payments to SDVOB firms

\$373M

C&D payments to Disadvantaged Business Enterprise (DBE) firms



Future Metro-North Penn Station Access
Co-op City Station Area

Our Strategic Priorities

As we reflect on 2023 and plans for 2024 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.

Deliver at Scale

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

Tackle Priority Projects

C&D is taking on big challenges to deliver big benefits to our customers by empowering our project teams to overcome obstacles.

Contain Cost

C&D is containing cost through initiatives at every stage of the project lifecycle, from defining upfront scoping, to less customized specifications, to smarter management of in-house labor.

Increase Diversity

C&D is taking action to increase diversity among the contractors we do business with and the workers they employ.

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

With the MTA's capital planning unified under C&D, we are planning long-term strategies to rebuild, improve, and expand our existing system.

Connect More Riders to Transit

C&D is working with cities and communities to expand access to transit and foster transit-oriented development.

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.

BUILD THE ORGANIZATION

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

Strengthen Organizational Capacity

C&D is building and training a new organization to meet the ambitious mandate of our capital program.

Harness Data and Technology

C&D is taking the initiative to harness data & technology to give our teams the best tools to get the job done.

EXECUTE THE PROGRAM

The heart of C&D's mission is executing our capital program better, faster, and cheaper, from project conception to award all the way through construction and handover to our operating agency partners.

C&D was created to improve capital delivery. By streamlining capital program functions into one agency, we are learning from and replicating best practices as we manage and structure contracts, and implementing cost containment initiatives at scale.

Deliver at Scale

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 as we ramp up progress.



Times Square Shuttle Station



Strategically Deploy Innovative Delivery Models

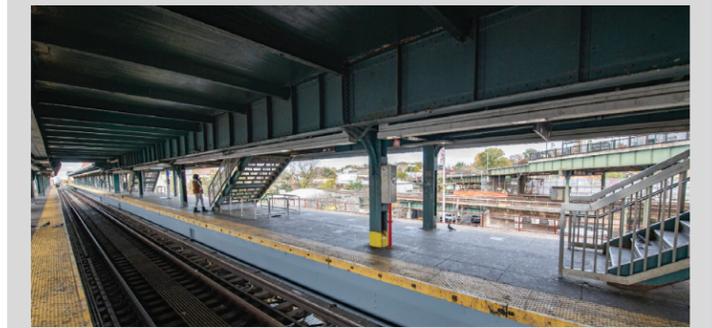
C&D is taking full advantage of delivery models to tailor its approach for project delivery – using Design-Bid-Build for projects where project scope and requirements must be well-defined upfront, and Design-Build for projects that benefit from using an integrated team for greater collaboration and innovation. Building on the successes of adopting Design-Build, C&D has innovated with use of alternative delivery models, like Public-Private Partnership (P3) and Progressive Design-Build.

Progressive Design-Build

Progressive Design-Build is a delivery model that brings a Design-Builder earlier on in the project planning process, allowing scope to be designed collaboratively with the contractor to move quickly through design, identify innovations earlier, and reduce risks later on in construction.

Progressive Design-Build for NYCT Stations

C&D is awarding its first progressive design-build contract for structural repairs in over forty subway stations in Manhattan and Brooklyn, selecting a design-build team to survey, plan, and design improvements in a first phase and perform these repairs in a second phase.



Maximize Contractor and Consultant Performance

For projects that are better suited for traditional Design-Bid-Build methods, C&D has innovated with “A+B Bidding” to allow us to value project duration and the need for outages, in addition to the cost impacts of a proposal. This led to projects that were over four months shorter than our schedule estimate on average (and \$105 million under cost estimate) in 2023. C&D has also overhauled its terms and conditions to better share risk with contractors and implemented performance evaluation incentives for contractors, designers, and construction management firms.

A+B Bidding

In construction, time is money, especially when it comes to disruptions for customers. A+B bidding takes into account both cost (“A”) and schedule (“B”) when evaluating bidders to prioritize efficient construction practices.

200-207 St Track & Signal Replacement

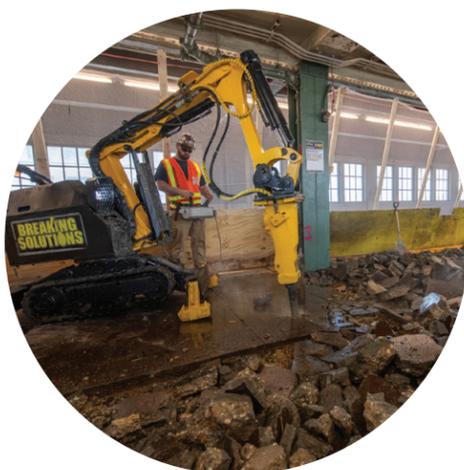
Completed in 2023, this project replaced track, switch, and signal equipment that was damaged during Superstorm Sandy. As a result of A+B bidding, this project achieved a 57% schedule reduction – from an original estimate of 45 months to under 20 months – with accompanying savings valued at \$13 million in reduced internal force account resources.



Tunneling at Grand Central Station

Bundle Projects Together

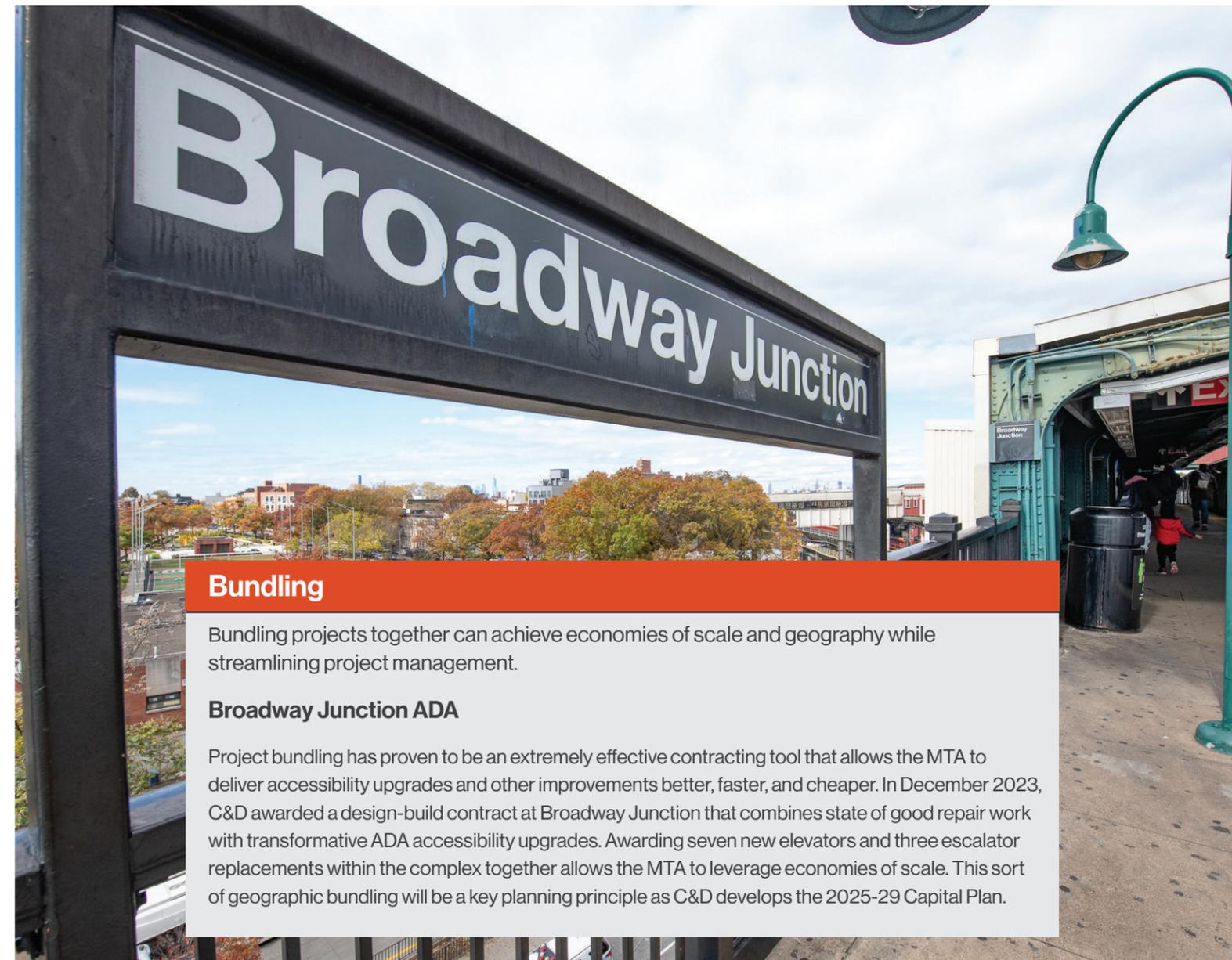
Given our size, C&D has to repair or improve multitudes of elevators, escalators, stairwells, platforms, substations, and other critical infrastructure every year. To take advantage of economies of scale and geography, C&D has instituted project bundling. Grouping of similar types, or in the same location, reduces overall costs and minimizes disruptions by getting multiple jobs done at once. In 2018, for example, \$1 billion in station improvements was scattered across 20 contracts. In 2023, we did 40 percent more work in half the number of contracts.



Platform Demo at Queensboro Plaza
N W 7 Station

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 capital 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.



Bundling

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

Broadway Junction ADA

Project bundling has proven to be an extremely effective contracting tool that allows the MTA to deliver accessibility upgrades and other improvements better, faster, and cheaper. In December 2023, C&D awarded a design-build contract at Broadway Junction that combines state of good repair work with transformative ADA accessibility upgrades. Awarding seven new elevators and three escalator replacements within the complex together allows the MTA to leverage economies of scale. This sort of geographic bundling will be a key planning principle as C&D develops the 2025-29 Capital Plan.

Unprecedented Progress toward Accessibility

In 2022, the MTA reached a historic settlement with accessibility advocates to provide ADA access at 95% of currently inaccessible stations by 2055. \$5.2 billion in this capital plan reaffirms our commitment to accessibility which is one of the MTA's core values.

C&D is making unprecedented progress toward upgrading access through the system by using innovative contracting methods like Design Build and project bundling. Since 2020, 25 stations have been made newly ADA accessible. As of January 2024, **41 stations** are currently in construction.

Project Highlights

Utilizing Public-Private Partnerships for Accessibility

Zoning for Accessibility enables private developers to deliver ADA improvements in MTA stations in exchange for greater building density bonuses. At 57 St **F** and Queensboro Plaza **N W 7** stations, developers are building and maintaining accessible entrances at no cost to the MTA.

Delivering ADA Upgrades Cost Effectively

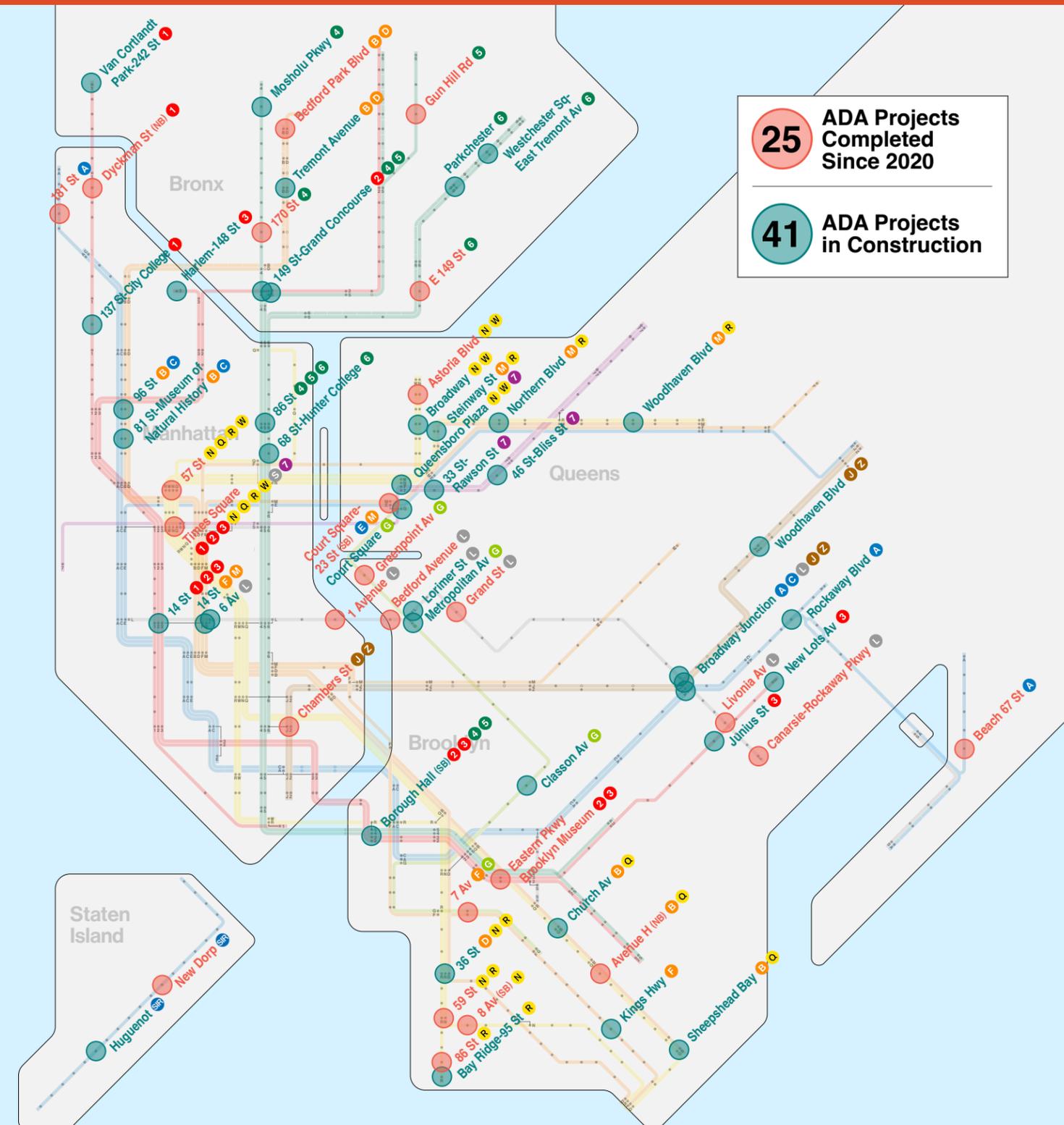
To maintain service for riders while performing accessibility upgrades, the MTA needs force account labor to ensure worker and customer safety during active construction. This can drive up project costs and slow service. To reduce these impacts, C&D installed construction barriers along the track at Metropolitan Ave **G**, which eliminated station closures and reduced flagging costs. Innovations like this significantly reduced service outages, part of the reason why the project expected to come in \$60M under budget.

Employing Innovative Project Designs

At Woodhaven Blvd **M R** the project team designed a direct street-to-platform elevator design that eliminated the need for one elevator, resulting in ~\$30 million in estimated savings, and is more convenient for riders to use.



Recently completed elevator at Grand Street **L** Station



Contain Costs

It's not just about getting projects out the door and completing them—containing cost is also essential to make 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 delivering greater value.



Mineola LIRR station during 3rd Track construction



Define the Right Scope

Rigorous project definition means goals are agreed on at the onset, risks are identified and mitigated, and costs and schedule are tracked to limit scope creep and overruns. To improve upfront planning, C&D has implemented a project baseline procedure in 2023 to ensure projects are adequately budgeted, scope is constructable, and operating agencies are in full agreement at early stages of project conception – meaning minimal changes later on. In 2024, we will build a dedicated internal scope review team to limit over-customization and identify cost-saving innovations.



Platform edge construction at East Broadway **F** Station



Simplify Construction Specifications

Design specifications are how we tell the contractors what we need from a specific project. But over time, these specifications can go from helpful to overly prescriptive, preventing cost-efficient innovations. To address this, C&D is moving to simplified, performance-based specifications that judge projects based on how they meet objectives and deliver value to our system and riders. C&D has created unified Project Requirements and Design Criteria (PRDC) to replace previous Master Specifications. Going forward, C&D will simplify requirements further. C&D will continue moving to using performance-based code, working with State code officials to remove unwarranted requirements that treat subway stations like office buildings, rather than distinct transit environments. This has resulted in changes that have made MTA projects – such as elevator installations – more affordable.

Cutting Red Tape

In 2023, C&D focused on simplifying Master PRDCs and Master Specifications by reducing repetitive requirements, removing ambiguous language, and shrinking the number of submittals we require in contracts. C&D also benchmarked our requirements against peer transportation agencies to ensure our specifications are in-line with other systems.



Elevator Construction at 59 St **R** Station

What is Force Account?

Investing in a transportation network that operates 24/7 requires extensive planning and coordination – to minimize impact to customers, maximize productivity, and optimize the use of operating agency resources. “Force account” consists of the various operating agency support resources needed to support our capital projects – construction support resources, such as flaggers and work trains; service diversion resources, including shuttle bus operators and train crews; and operating agency personnel who perform inspections and provide access to work sites.

C&D begins force account planning during a project’s early scope development. During procurement, we use incentives to encourage contractors to reduce requirements. Once a project has been awarded, C&D coordinates between the project delivery team and operating agency to schedule track and roadway access. Maintaining the delicate balance between construction and service requires very careful planning and typically involves scheduling work on nights and weekends when ridership is lower. It also requires optimizing our service diversion resources and creatively aligning outage schedules around many other service priorities, such as sporting events, summer beach season, and holiday celebrations.



Switch installation on LIRR main line

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 to better plan, allocate, and monitor where support is needed for projects. In addition, C&D is expanding the use of measures that reduce resource requirements, such as subway track barriers – which ensure safe work sites while reducing the need for construction flaggers and minimizing impacts on adjacent service. These initiatives have already led to \$200 million per year in savings for subway projects.



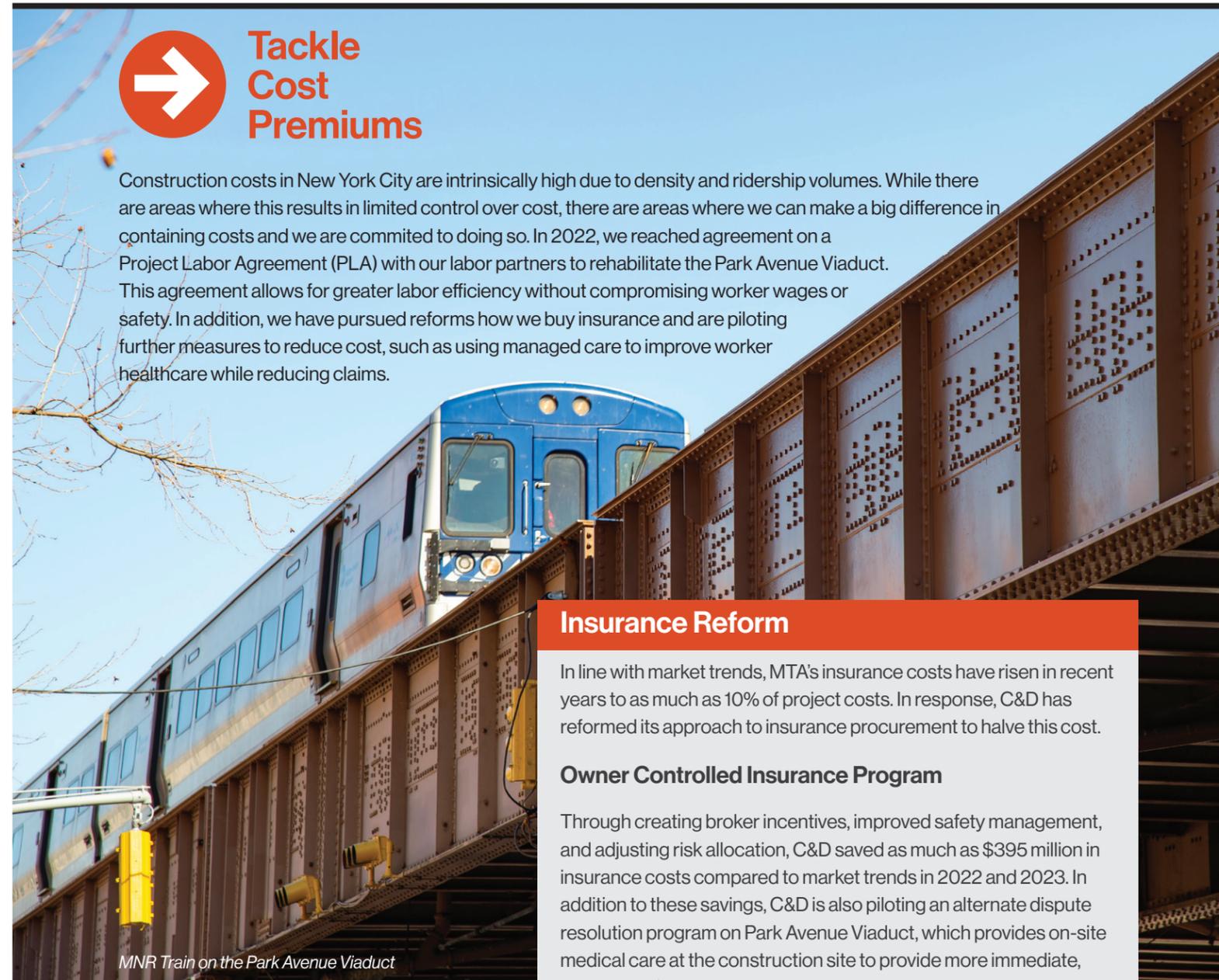
Improve Coordination with Third Parties

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.



Tackle Cost Premiums

Construction costs in New York City are intrinsically high due to density and ridership volumes. While there are areas where this results in limited control over cost, there are areas where we can make a big difference in containing costs and we are committed to doing so. In 2022, we reached agreement on a Project Labor Agreement (PLA) with our labor partners to rehabilitate the Park Avenue Viaduct. This agreement allows for greater labor efficiency without compromising worker wages or safety. In addition, we have pursued reforms how we buy insurance and are piloting further measures to reduce cost, such as using managed care to improve worker healthcare while reducing claims.



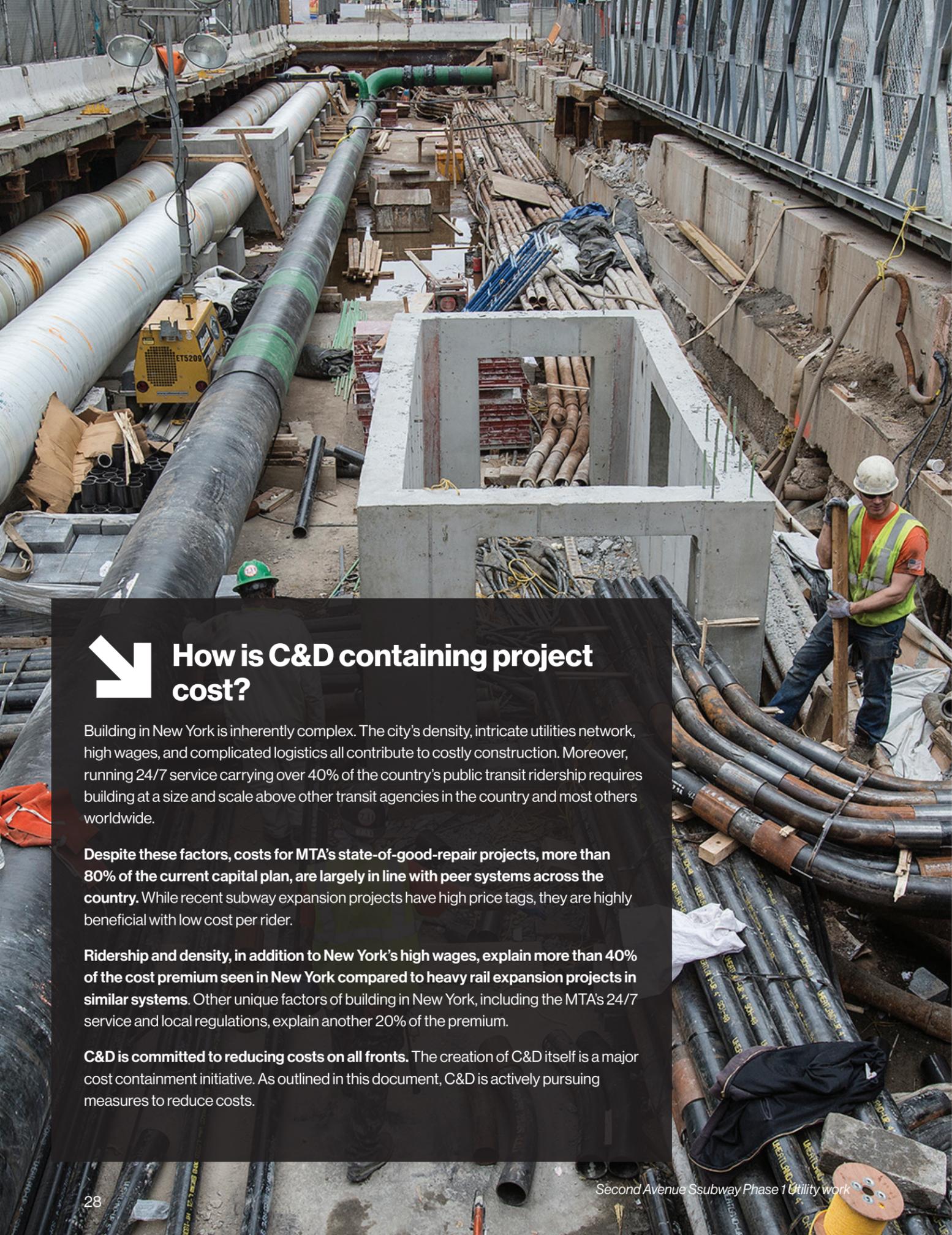
MNR Train on the Park Avenue Viaduct

Insurance Reform

In line with market trends, MTA’s insurance costs have risen in recent years to as much as 10% of project costs. In response, C&D has reformed its approach to insurance procurement to halve this cost.

Owner Controlled Insurance Program

Through creating broker incentives, improved safety management, and adjusting risk allocation, C&D saved as much as \$395 million in insurance costs compared to market trends in 2022 and 2023. In addition to these savings, C&D is also piloting an alternate dispute resolution program on Park Avenue Viaduct, which provides on-site medical care at the construction site to provide more immediate, better care for workers and reduce injuries.



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, 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 cost 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>Less MTA Control</p>  <p>High ridership and built environment</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"> » Improved utilities coordination and review » Joint development opportunities to reduce real estate costs
 <p>Regional Labor & Materials Cost</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"> » Project labor agreements to improve labor efficiency » Pursuing strategic sourcing opportunities
 <p>Operating Constraints & Regulation</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"> » Reforms in outage and force account » Insurance reform
 <p>Scope & Design</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"> » Better project definition and value analysis » Removing unnecessary tasks where possible » Less-customized specifications
<p>More MTA Control</p>  <p>Project Delivery</p>	<p>The area most within MTA control, C&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"> » Innovative contract models and incentives » Contract bundling » Aggressive project management » Improved digital management and analytics system

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.

Tackle Priority Projects

In an environment as complex as the MTA's, no project is simple, but C&D is prepared to take on even the biggest challenges to deliver big benefits to our customers.



Commuters at Grand Central Madison



Develop Systems Expertise

Running a modern transportation system requires significant technology and systems expertise. C&D is embracing this challenge and building up capacity to take on complex problems like the software behind our Signal Modernization program and the networks that enable upgrades to our Public Address / Customer Information Signs. In 2023, C&D took over completion of the OMNY fare payment system, resulting in expedited implementation that included rollout of the first OMNY card vending machines in October. In 2024, C&D will advance strategic planning for the Control Centers and continue to develop strategies for improved CBTC implementation and rolling stock procurement.

Systems-Based Project Management

Modern transit systems are as dependent on technology as they are on physical infrastructure. C&D is building capacity to successfully manage technology (and technology systems) projects.

OMNY Program Management

C&D undertook a strategic review to ensure better management of the system and its rollout, resulting in new project management techniques that are better suited for a cutting-edge technology project.

Half of all subway entries in 2023 were made using the OMNY fare payment system and adoption continues to grow. There are still elements of the full system rollout that remain. C&D undertook a strategic review to ensure better management of the system and its rollout. The review resulted in the implementation of new project management techniques that are better suited for a cutting-edge technology project.

These new initiatives are centered around a new team structure consisting of separate teams dedicated to delivering the full project scope and operating the service. This structure has maximized technical expertise and allowed for more nimble testing and decision-making. Expanded usage of pilot programs and a production-laboratory environment allowed the team to launch new products in 2023, including the introduction of OMNY payments at the JFK AirTrain and Roosevelt Island Tram and installation of the first OMNY card vending machines.



Leverage Technology and Innovation to Advance MTA Priorities

C&D is committed to using industry-leading technologies to tackle MTA's challenges. This ranges from initiating pilots of laser technology and front-facing cameras to prevent and protect from track intrusion, to launching an industry search to qualify new, modern fare gates that reduce opportunities for fare evasion and enhance the customer experience. C&D also works with Transit Tech Lab – a partnership to solicit new technological innovations from private growth-stage tech companies.

Megaprojects are Advancing



While more than 80% of our program is dedicated to Core Infrastructure, expanding and enhancing our system is also critical as we keep up with a growing and changing region.



Completed

Grand Central Madison

Grand Central Madison is the largest U.S. passenger rail terminal to open in 67 years and the first extension of the LIRR in 112 years, giving LIRR customers direct access to Manhattan's East Side. Together with Third Track and other improvements, Grand Central Madison enables a 40% increase in LIRR service, including massive improvements in reverse commuting options.

The delays and challenges faced by early East Side Access work informed many of the reforms central to C&D's strategy, including Design-Build, bundling, and Project CEOs. Thanks to the new approach taken by C&D, the project opened for service in January 2023.



Advancing

Metro-North Penn Station Access

Metro-North Penn Station Access will provide direct service from the Bronx, Westchester, and Connecticut to Penn Station and Manhattan's west side. This project will provide train service to the 500,000 residents living within a one-mile radius of four new stations in the East Bronx and will drastically reduce commute times for people who work in the East Bronx.

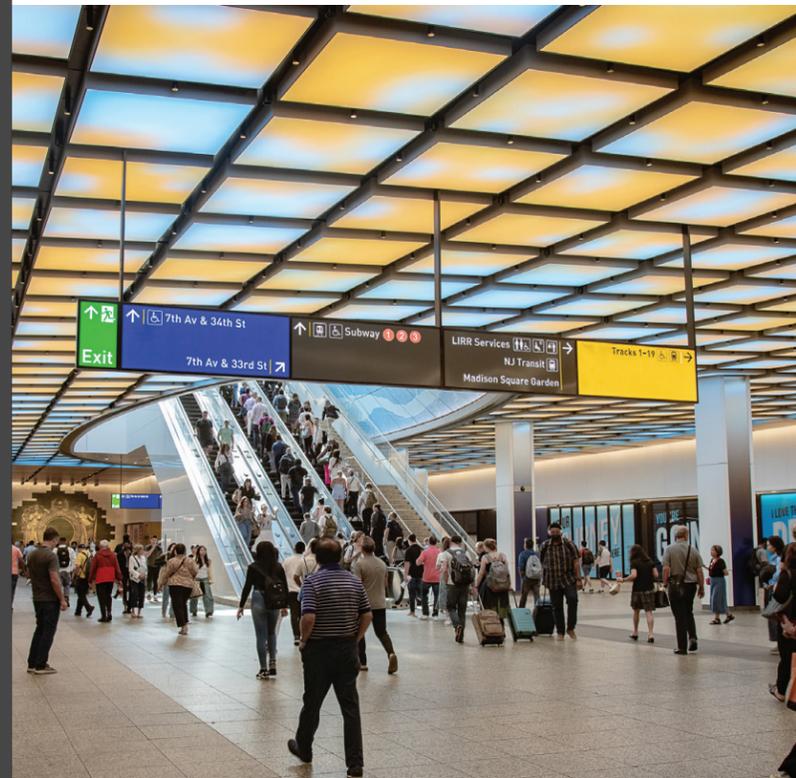
This project builds on the lessons of Third Track, bringing the same approach to similar conditions on Amtrak's Hell Gate Line. The project broke ground in 2022 and continues to advance.

Completed

Penn Station LIRR Concourse

C&D has been working to transform the LIRR Concourse at Penn Station into a state-of-the-art space. In December 2020, we opened the new East End Gateway at 33 St and 7 Av, providing an iconic new entrance and bringing natural light into Penn Station for the first time since the 1960s. In September 2022, the new 33 St Corridor was opened. The new corridor is significantly wider and taller, providing a dramatically improved passenger experience.

This project has been delivered on time and on budget while maintaining full access for Penn Station customers during construction. It's a model project that shows the potential for a better Penn Station.



Advancing

Second Avenue Subway Phase 2

Extending the Second Avenue Subway through East Harlem, Phase 2 will deliver three new stations at 106 St, 116 St, and 125 St. A long-awaited subway in a transit-dependent neighborhood, Second Avenue Subway Phase 2 will carry over 100,000 daily riders, reducing commutes by as many as 20 minutes while also alleviating congestion on the 4/5/6 Lexington Avenue Line.

This project learns important lessons from Phase 1 and awarded its first construction contract in January 2024. Future contracts will be awarded following resolution of Congestion Pricing delay.



Case Study: LIRR Third Track - On Time & Under Budget

Third Track delivered transformational benefits for LIRR riders by adding additional capacity and upgrades to the LIRR Main Line—on time and under budget. In doing so, it showcased a number of key C&D innovations and serves as a model going forward.

Deliver at Scale

Design-Build and Bundling

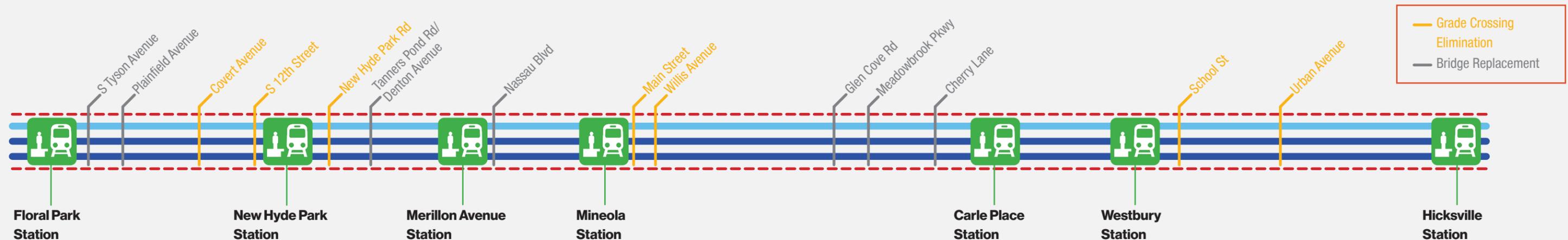
Third Track was a complex project with many moving parts, from station improvements to substations to grade crossing separations to bridge replacements to new parking facilities. A design-build contract that bundled what could have been 50 separate projects together put the responsibility and risk with the party best positioned to manage them. As a result, the project was completed on schedule.

Contain Costs

Define the Right Scope

During an extensive consultation process, C&D solicited ideas from contractors to improve the project's design and delivery. Among other things, an alternative track alignment was incorporated that allowed the project to be significantly easier to deliver. As a result of this consultation, a project that was initially estimated to take eight years took just five.

Together with Grand Central Madison and other improvements, Third Track enables a 40% increase in LIRR service.



Tackle Priority Projects

Project Team Accountability

The project teams, both at C&D and the contractor, were empowered to make decisions and given a mandate to coordinate all work, aggressively control scope expansion, and enact performance oversight. The leadership on both the C&D and contracting sides developed a strong working relationship in their co-located field office. Given the tools they needed to manage the project successfully, this leadership team was held accountable by C&D leadership as the project progressed, with constant future projections ensuring the project remained on track.

The Results

- » 9.8 miles of track
- » 7 stations upgraded, with
 - 6 pedestrian overpasses
 - 15 ADA elevators
- » 7 bridges replaced
- » 8 substations replaced & upgraded
- » 8 grade crossings eliminated
- » 7.5 miles of retaining walls installed

Spotlight: Grade Crossing Eliminations

Utilizing an innovative box-jacking system, our construction crews completed these complex jobs faster and easier. With close coordination between the contractor and LIRR forces, a new railroad bridge was installed over a new underpass in a single weekend, dramatically minimizing interruptions to LIRR riders. This compares to the weeks, months, or even years that similar projects took in the past.



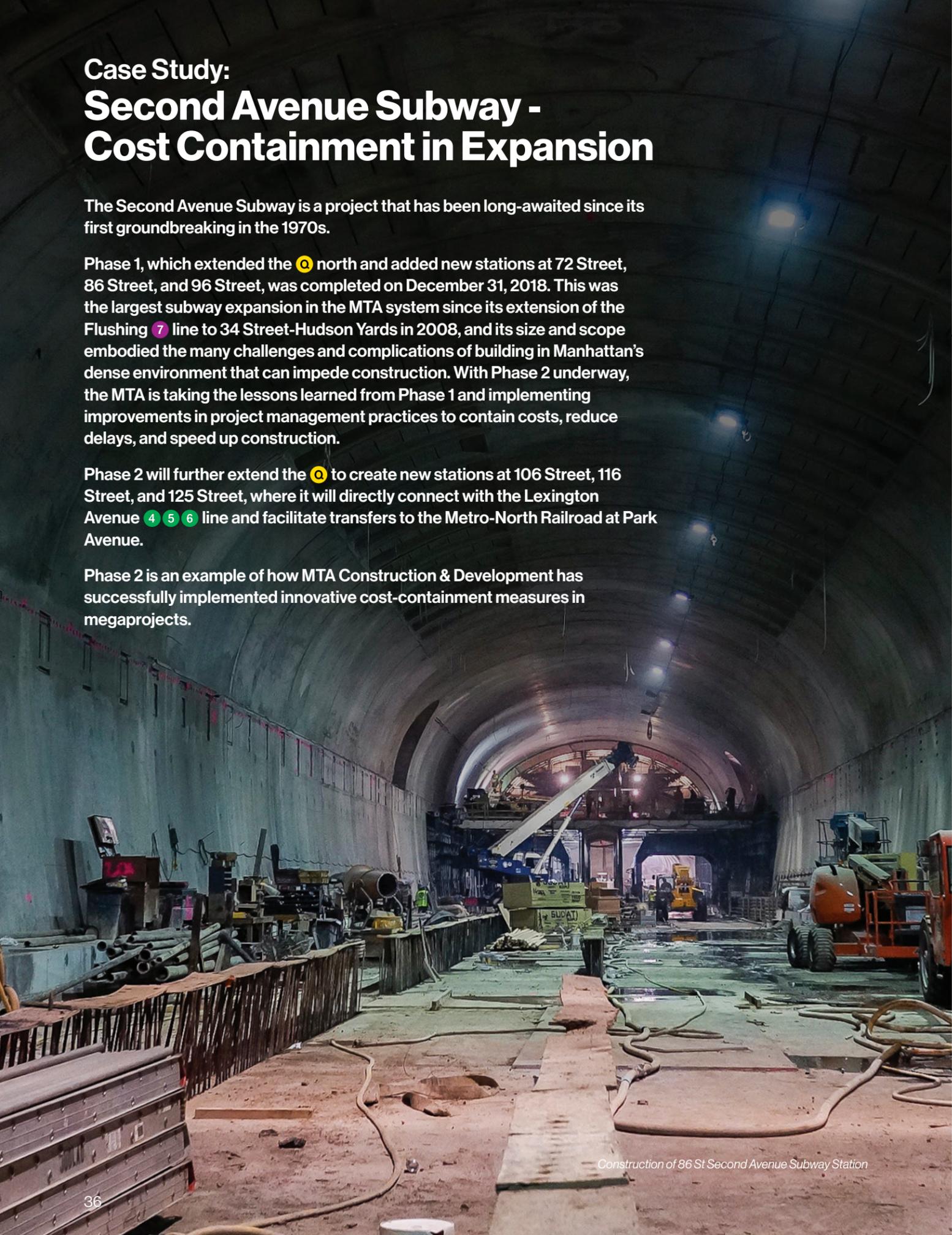
Case Study: Second Avenue Subway - Cost Containment in Expansion

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** north and added new stations at 72 Street, 86 Street, and 96 Street, was completed on December 31, 2018. This was the largest subway expansion in the MTA system since its extension of the Flushing **7** line to 34 Street-Hudson Yards in 2008, 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 extend the **Q** 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.



Construction of 86 St Second Avenue Subway Station

Scope

Phase 1 Lesson

Build only what you need.

Phase 2 Approach

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

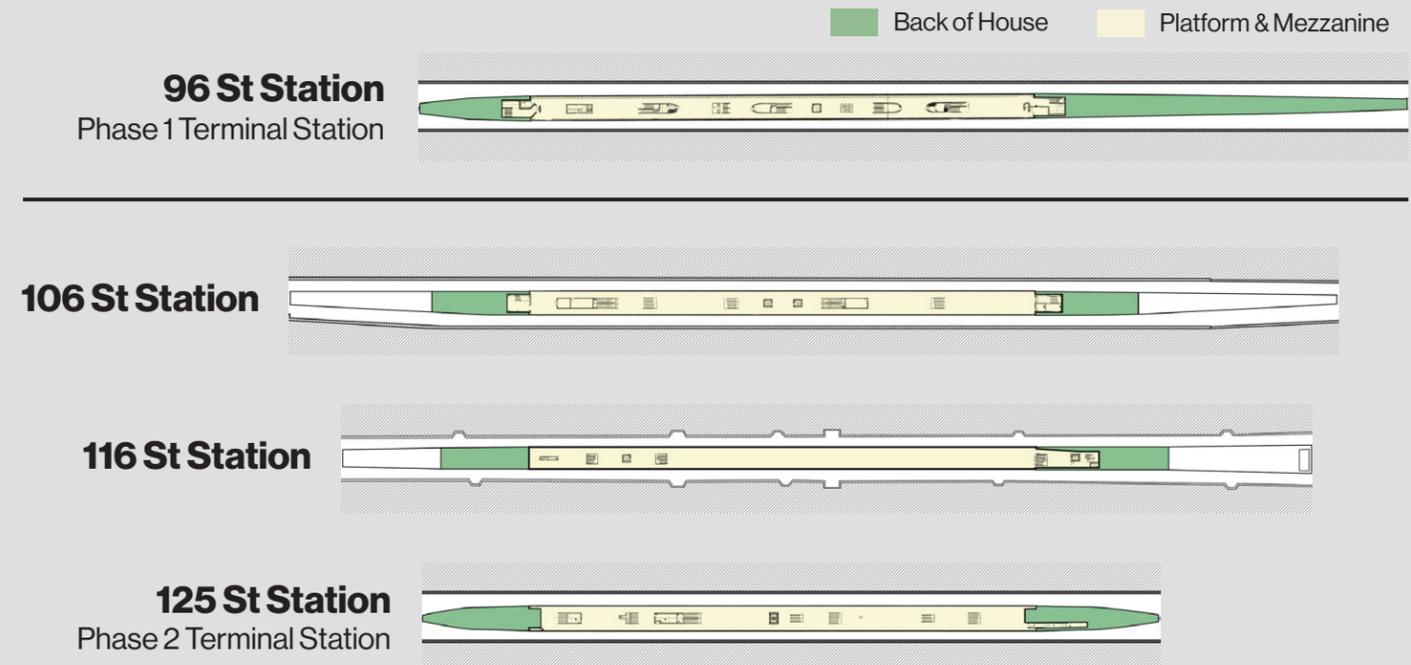
Compared to Phase 1 designs, Phase 2 significantly reduces the amount of "back of house" area, which is the mechanical space needed to operate the system.

The new stations still need a 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.

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 compared to Phase 1 stations.



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.



Workers during construction of the 72 St Second Avenue Subway Station

Management

Phase 1 Lesson

Streamline contracts, especially at key interfaces

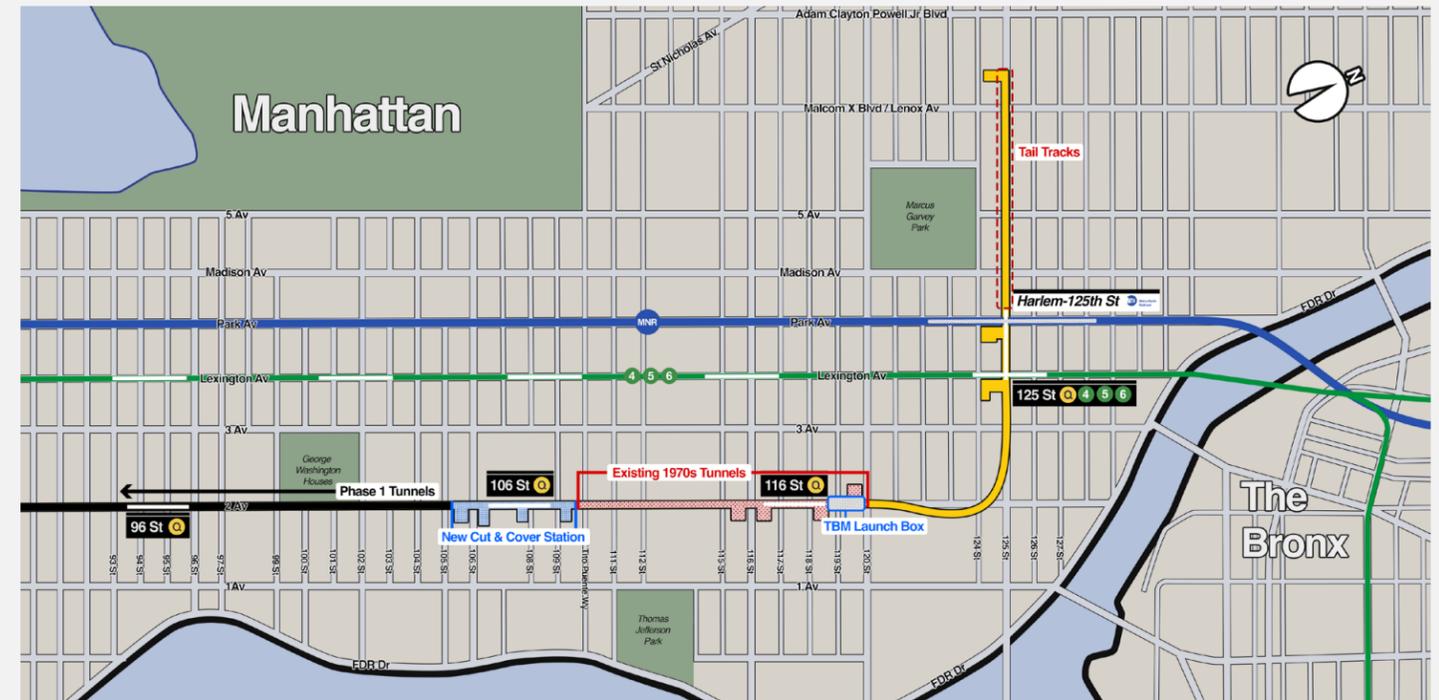
Phase 2 Approach

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.

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 already saved \$1 billion in the Phase 2 design, and value engineering underway has the potential to save us an additional \$300 million.



Phase 1 Contracts

Phase 2 Consolidated Contracts

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

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

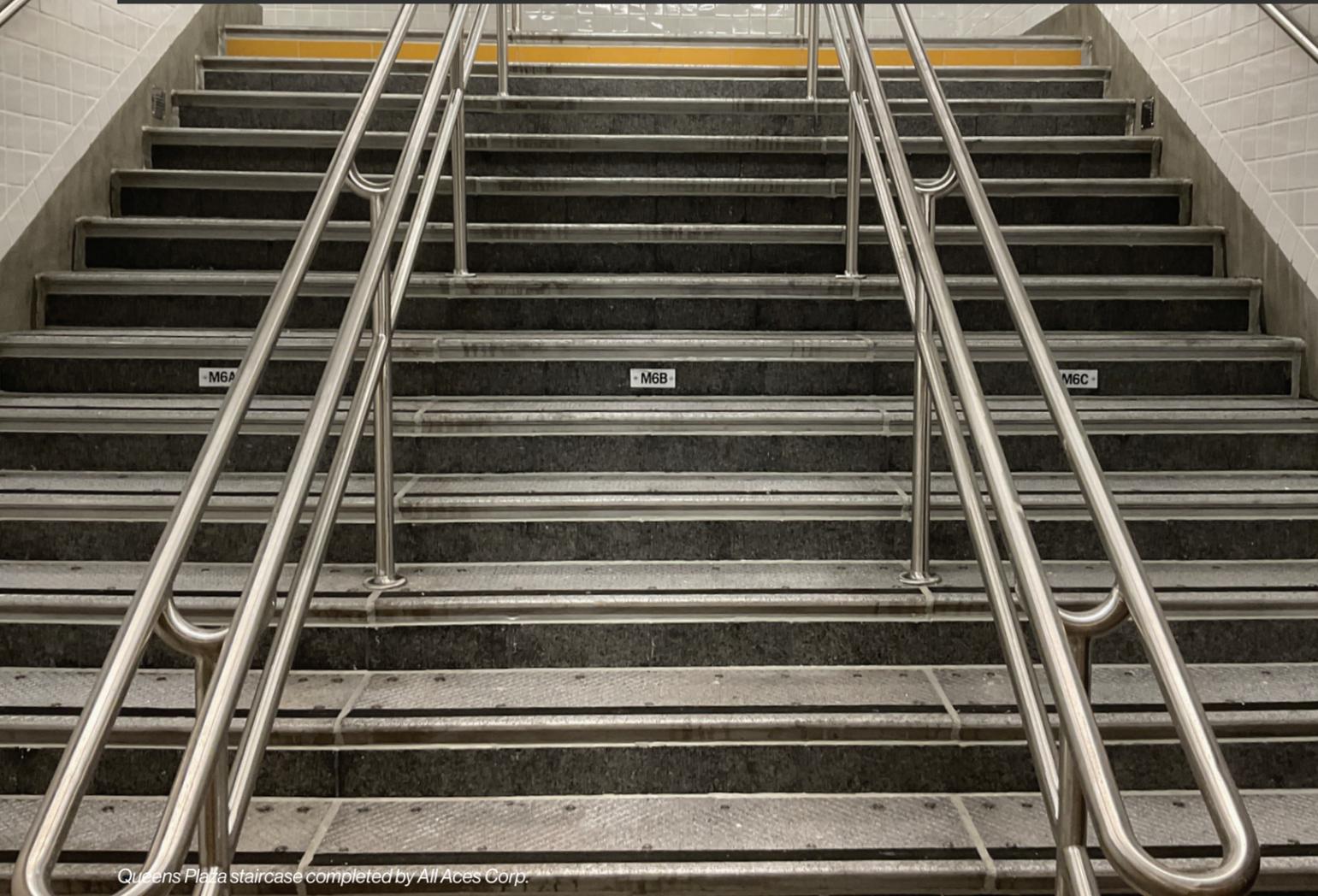
Spotlight: Reusing Tunnels

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 Second 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.



Increase Diversity

C&D is committed to ensuring that the Capital Program is delivered not only efficiently and effectively, but inclusively. Fostering 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 compete for and build projects in C&D's pipeline.



Queens Plaza staircase completed by All Aces Corp.



Continue MWBE, DBE, and SDVOB Contracting

C&D works closely with the MTA's Department of Diversity and Civil Rights (DDCR) to maximize contracting opportunities for diverse businesses. For Fiscal Year 2023, the MTA was the top New York State agency in Minority- and Women-owned Business Enterprise (MWBE) expenditure, totaling \$813 million, or approximately one-third of State payments. For the third year in a row, the MTA exceeded the Governor's 30% target with 37% MWBE participation. Of MTA payments, C&D contributed \$449 million. Moreover, C&D contributed \$373 million for Disadvantaged Business Enterprise (DBE) firms on federally funded projects and \$11 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. Working with DDCR, C&D will also advance more strategic and targeted outreach for MWBE firms, particularly those working in in-demand trades, as well as explore opportunities to launch a reciprocity program for MWBE certification with the New York State Empire Development Corporation. In addition, we are committed to increasing diversity within our MWBE community so that contracting opportunities benefit all historically disadvantaged groups.



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 2023, C&D awarded \$68 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 enhance its commitment to supporting 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.

Small Business Development Program

Through the Small Business Development Program, small firms, including MWBEs, are provided a supportive framework to develop and grow by doing business with the MTA.

Queens Plaza Station Stair Replacement

At the Queens Plaza **E M R** station, All Aces Corp, an MWBE and SDVOB firm, completed replacement of a staircase in 2023. The work was completed on time and on budget. This proved to be a successful public sector contracting opportunity for this small business, which has since won a larger contract for the replacement of two staircases at 110 St station.



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. In 2023, C&D expanded its pilot program to additional projects, including the rehabilitation of the station complex. 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 Resiliency

C&D is making structural repairs on the Rockaway Viaduct, Hammels Wye Viaduct, and South Channel Bridge to make this critical infrastructure more resilient, after lessons learned from Superstorm Sandy. In addition to resiliency benefits, C&D is including a 20% local hiring goal so local residents can benefit from union-wage jobs created on the project.



A C&D table at local hiring event in Harlem



Aerial view of Hammels Wye

PLAN FOR THE FUTURE



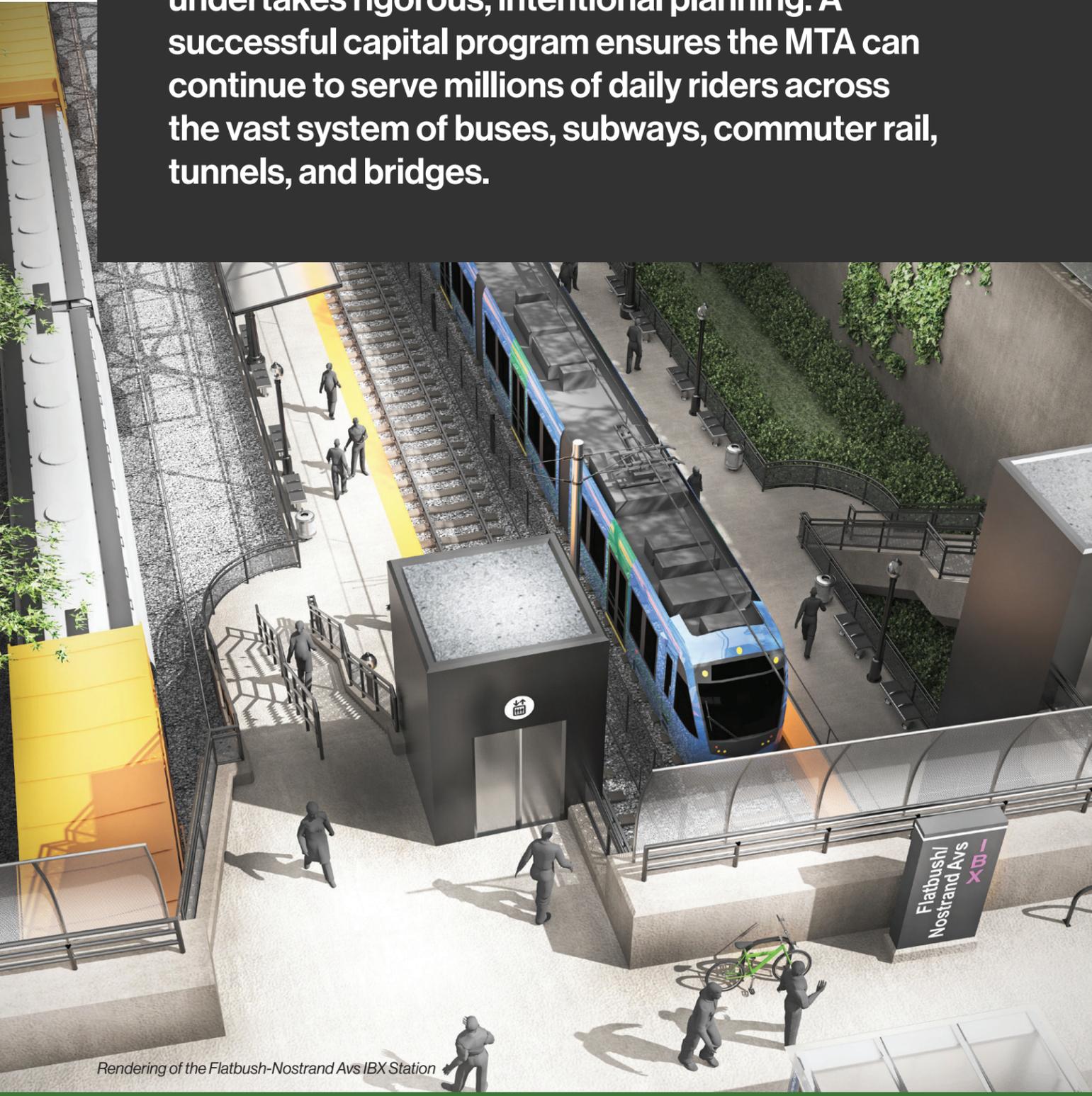
C&D is making sure the MTA stays ahead of the curve through strategic initiatives and long-term planning.

The creation of C&D integrated capital planning across the MTA 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.

Trains on the Park Avenue Viaduct

Advance Long-Range Planning

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



Rendering of the Flatbush-Nostrand Aves IBX Station



Create the Next 5-Year Capital Plan

The 5-year Capital Program is the lynchpin of C&D's work. In 2023, C&D released its 20-Year Needs Assessment, which laid out the investments needed to rebuild and improve the existing system and to expand and enhance the transit network in the long term. These priorities will be reflected in the 2025-2029 Capital Plan, to be released in the fall of 2024.



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. Going forward, C&D will advance planning for promising planning projects, laying the groundwork for the next generation of transformative capital investment in the region.

Comparative Evaluation

Using Comparative Evaluation, nearly two dozen proposed expansion and enhancement projects from throughout the region were evaluated on a level playing field.

Interborough Express

The Interborough Express (IBX), a proposed passenger line from Sunset Park, Brooklyn to Jackson Heights, Queens, performed favorably under Comparative Evaluation. The proposed project serves a sizable, diverse population throughout central Brooklyn and Queens and has the potential to connect up to 17 subway lines by leveraging an existing freight rail line. For these reasons, IBX is particularly promising and, after an initial feasibility study, Governor Kathy Hochul directed MTA to move the project into the formal environmental review process.



Planning for the Future

MTA's 20-Year Needs Assessment



In October 2023, the MTA released its 20-Year Needs Assessment, a broad, comprehensive blueprint 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.

Over two years, C&D collaborated with teams from across the MTA operating agencies to assess the nearly 6 million components and assets that make up the MTA system. The result was the most rigorous and transparent analysis of the network ever undertaken.

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 sources of data include:

- 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.
- 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.
- Our **customer surveys** help us to understand what customers care about most, particularly reliability, safety, and on-time performance.
- Our new **climate planning division used geospatial analysis** to identify emerging threats.
- Our comprehensive **analysis of regional trends** and emerging travel demand helps us to anticipate where new pressures will be made on the system.
- 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.

Ratings for every asset

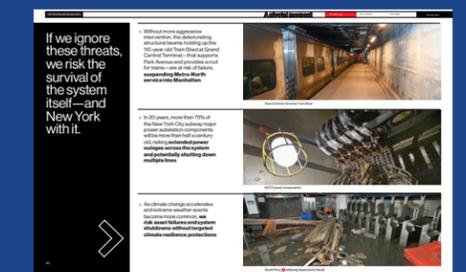
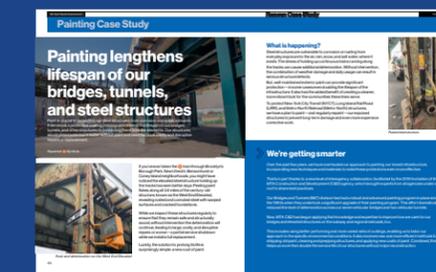
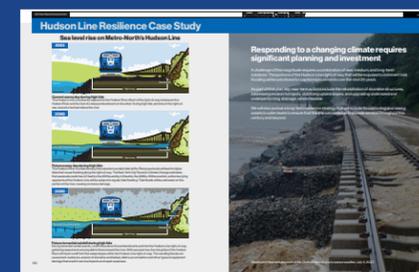
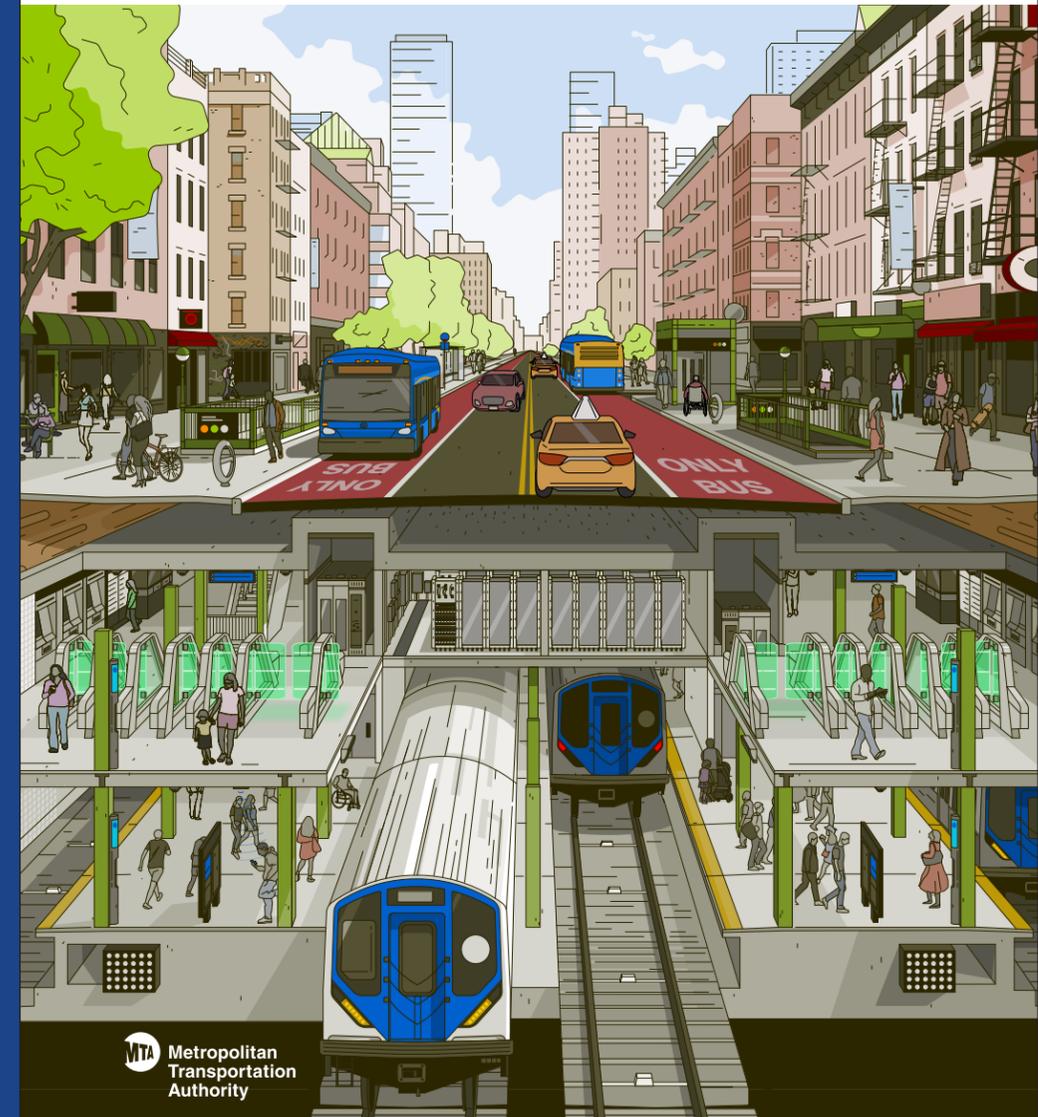
This 20-Year Needs Assessment includes an assessment of the condition of every asset in our system, including at the component level for relevant assets.

- Poor (Deteriorated):** Critically damaged or in need of immediate repair, well past useful life
- Marginal (Deficient):** Deteriorated, in need of replacement, and may have exceeded useful life
- Adequate (Acceptable):** Moderately deteriorated, but has not exceeded its useful life
- Good:** No longer new, but in good condition, and still within its useful life
- Excellent (Modernized):** No visible defects, new or near new condition, and may still be under warranty (if applicable)

The 20-Year Needs Assessment is based on a detailed inventory of every component and asset throughout the MTA network. As part of the robust analysis undertaken, every component and asset was rated based on its current condition. Ranging from Poor to Excellent, the rating scale provides a uniform look at the greatest needs across the system. Based on the ratings data, the MTA formulated a cohesive and robust strategy to address the most critical assets deemed to be in poor and marginal condition.

The Future Rides With Us

MTA 20-Year Needs Assessment (2025-2044)



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

Build in Sustainability & Resilience

The MTA is integral to New York's sustainable future and the state's strategy to fight global climate change. New York's mass transit system powers one of the world's largest regional economies and enables it to avoid over 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.



Aerial view of Coney Island Yard



Integrate Resilience and Sustainability into Capital Planning

C&D is also advancing climate sustainability initiatives to reduce the MTA's own greenhouse gas emissions without compromising the safety, affordability, and reliability of MTA services. In 2023, C&D released the first agencywide Sustainability Framework – committing the MTA to reducing its greenhouse gas emissions by 85% by 2040. In 2024, C&D will release both a Climate Sustainability Roadmap and a Climate Resilience Roadmap, laying out a series of actions that will guide future capital investments.

The Climate Resiliency Roadmap will outline a series of strategies that will better prepare the system from current and future climate hazards. Much of which will address stormwater flooding that threatens the subway's many stations and yards, as well as offer protection for the regional railroads from sea level rise, coastal storm surge, and steep slopes—specifically, MNR's Hudson Line and the LIRR's Long Beach Branch.

MTA as Climate Change Solution

On Earth Day 2023, the MTA committed to reduce the emissions from our own operations by at least 85% by 2040, from a 2015 baseline. The MTA plans to achieve this goal through a three-pronged strategy:

- 1. Update facilities**
Reduce fossil fuel use and energy consumption in stations and support facilities.
- 2. Transition fleets**
Reduce fossil fuels used for buses, trains, and non-revenue vehicles.
- 3. Use energy efficiently**
Optimize energy use through energy management, regenerative energy, and storage.

MTA is piloting replacing aging Metro-North Railroad locomotives with Dual Mode locomotives to deliver more reliable and greener service. Benefits of transitioning to this new fleet of locomotive include:

- » **Slashed airborne emissions:** In diesel territory, massive reductions of emissions of pollutants like Nitrogen Oxide (84%) and Particulate Matter (86%)
- » **Expanded electrical territory:** The new Dual Mode will be able to operate in electric mode throughout third-rail territory, rather than just in Manhattan
- » **Reduced carbon emissions:** 25,000 metric tons of carbon annually



Prototype of dual-mode MNR locomotive



Advance Projects to Combat Climate Risks and Reduce Emissions

C&D is mitigating the impacts of flooding on MTA infrastructure by coordinating with operating agencies to fortify assets vulnerable to coastal flooding and working with external agencies to reduce the impacts of storm surges caused by torrential rain. This year, C&D is advancing capital priorities around sustainability and resilience for the 2025-2029 Capital Program, including around fleet conversions, facility upgrades, and climate protections on critical infrastructure.

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. As of October 2023, contractors are required to track embodied carbon emissions associated with new construction projects. In early 2024, C&D also updated its general contract specifications to include requirements for use of low-embodied carbon concrete on all new projects.

Implementing Clean Construction Practices

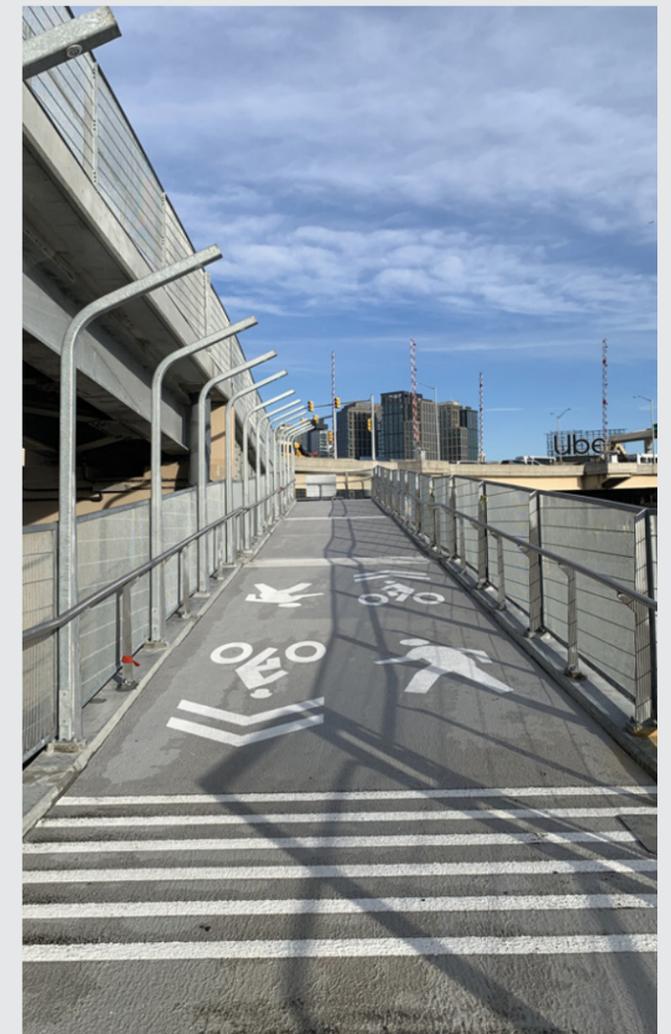
C&D's construction activities keep the MTA's existing systems running. With the MTA Clean Construction program, C&D is going even further by measuring and ultimately reducing the carbon impacts of its construction activities and practices.

Low- Carbon Concrete for Randall's Island Ramp Reconstruction

The MTA is already making efforts to utilize low-carbon materials in construction projects. Since early 2023, MTA Bridges & Tunnels (B&T) has been working with their contractor to pilot the use of sustainable concrete mixes for the reconstruction of the Randall's Island vehicle and shared-use ramps. B&T worked to reduce the carbon content of the concrete used while still achieving the original performance requirements.

B&T tested the low-carbon concrete after pouring and found that the mix met or exceeded strength and permeability project requirements and decreased embodied carbon by up to 24% compared to business-as-usual design. The project remains ahead of schedule and within budget.

Following the success of this B&T pilot, C&D will apply the lessons learned from the first large-scale application of low-carbon concrete to upcoming construction work. The close collaboration between the project team and the concrete supplier also showcases how MTA's ambitious clean construction goals can be achieved when all stakeholders work in partnership.



Connect More Riders to Transit

Alongside partners throughout the region, C&D is working to improve access and convenience to transit so that the communities we serve are able to fully take advantage of the benefits of transit.

C&D's Transit-Oriented Development (TOD) team collaborates with property owners and municipalities across the region to promote development around transit stations. Through this collaboration, we optimize the use of real estate assets to generate revenue and improvements for the MTA and to make getting to transit easier.



Mixed-use development near Harrison MNR Station



Encourage Housing Near Transit

Under the leadership of Governor Kathy Hochul, the MTA is stepping up in addressing New York's housing crisis. Under the Governor's Executive Order 30 and with the support of the Infrastructure Fund the Governor proposed in the FY25 Executive Budget, TOD will continue to advance housing growth near our stations, identifying opportunities where MTA-owned or adjacent land can be leveraged for housing development – including completing development plans. In 2024, this will include issuing two RFPs for development on MTA-owned properties around commuter rail stations.

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.

Extending Transit's Reach

In 2023, the MTA released Extending Transit's Reach, a strategic plan to improve bicycle, pedestrian, and micro-mobility access across our network. Over 2023, the MTA added bike parking at key stations and bus stops, installed more front-of-bus bike racks, and worked with NYC Department of Transportation to collocate bikeshare and e-scooter share at key transit hubs. As of December 2023, 99% of subway stations have bicycle racks within 100 feet of an entrance. Utilizing the Small Business Program, 13 Metro-North stations and six LIRR stations will see new bicycle parking installed in 2024. With these improvements, 85% of all MTA suburban commuter rail stations will provide bike parking.



Support Regional Transit-Oriented Development

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.

Facilitating Transit-Oriented Development

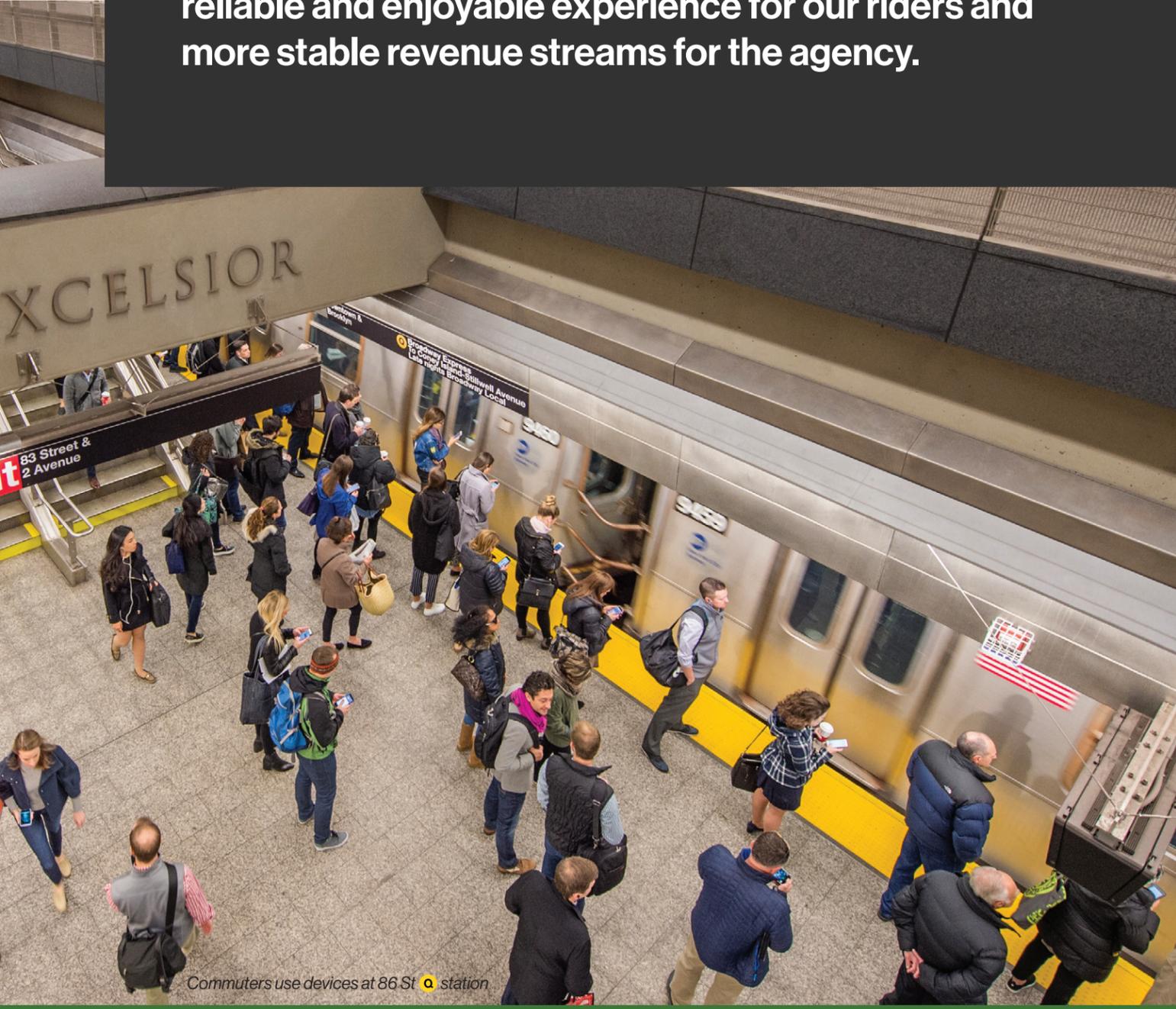
Where the MTA has assets, C&D facilitates the development of new housing to support local communities and raise revenue for the MTA.

Fostering Mixed-Use Development near Harrison Station

The MTA partnered with development partner AvalonBay Communities to transform the area around Metro-North's Harrison station. In 2023, construction was completed on over 140 units of housing along with improved access to the station, retail and streetscape improvements, and a new commuter parking garage – all at no cost to the MTA.

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 to ensure a more reliable and enjoyable experience for our riders and more stable revenue streams for the agency.



Commuters use devices at 86 St station



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. In 2023, C&D also completed the installation of 10,000 digital screens in NYCT and LIRR stations to create an all-agency communication and advertising system. C&D will continue to improve mobile service in 2024 by expanding Wi-Fi coverage to thirty stations as well as segments of underground tunnels.

Leveraging Public-Private Partnerships

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

Connecting Riders

In December of 2022, the MTA and Boldyn Networks (previously Transit Wireless) 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 191 above-ground subway and 21 Staten Island Railway stations.

C&D will transform the subway system into a fully digitally connected transit network that gives riders the ability to use their mobile devices throughout the system while also delivering technology upgrades to the MTA. Under the agreement with Boldyn Networks, MTA will share in revenue generated by the technology and will receive new fiber optic strands at every affected station; but is not responsible for construction & operating costs. This results in over \$1 billion in benefit for the MTA and its riders over the life of the agreement.



Generate Revenue & In-Kind Improvements

C&D actively pursues opportunities to leverage our infrastructure to generate benefits for the MTA. Since the type of dense land uses that typify New York City are only possible because of excellent transit service, it is possible to leverage the land use process to deliver additional enhancements to the transit system. Zoning for Accessibility (ZFA) 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 (N, W, 7) and 57 St (F) stations, both to be complete in 2025.

Creating Tangible Benefits for the MTA

C&D is working with private developers to generate significant benefits – including meeting its sustainability goals.

Gun Hill Electric Bus Depot

MTA is working with private developer to redevelop 550,000 square feet of MTA-owned land on Gun Hill Road in the Bronx. Madison Capital will fund the construction of a state-of-the-art electric bus charging facility and pay substantial ground rent to MTA, supported by revenue from the redevelopment of the underutilized land. The new facility will be the first electric bus charging facility in the Bronx and accelerate MTA's ability to reach its ambitious goal of a zero-emission bus fleet by 2040.



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 continuing to diversify the skills of every team, implement the latest technologies, and support our staff as they deliver on the ambitious goals in this plan.

MTA Construction & Development All Hands Meeting

Strengthen Organizational 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.



Trainees receive PPE at orientation



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 unprecedented 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 has grown by 200 employees in 2023 and created pathways for the next generation of employees. This includes 45 interns and our third cohort of C&D trainees, recent graduates in engineering and business who are supported through an 18-month leadership development and project management courses, technical skills training, site visits, and mentoring.

Across our staff, we continue to further capacity building and professional development opportunities, including launching a mentorship program connecting professionals across different functions in 2024.

MTA Trainee Program

In 2023, C&D welcomed two new cohorts in the MTA Engineer, Architect, & Project/Construction Management Trainee Program. In total, 74 trainees joined the agency across 5 departments. After 18 months at C&D, the program has maintained a 95% retention rate and has helped bolster the technical capacity of the agency.



Award recipients at C&D All Hands Meeting



Refine Organizational 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. It also means better communications with staff to understand areas for improvement. In 2023, C&D completed its first agency-wide staff survey and has begun to implement recommendations.

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.



Create an Integrated Data Strategy and System

C&D is advancing project management efficiencies across its departments and MTA operating agencies by creating an integrated data system. This initiative uses the latest digital processes to unify data and technology agency-wide to help C&D track and control its programs and projects more effectively. Once finalized, the fully integrated system will enhance overall performance by increasing visibility for project control on individual projects and boosting accountability for strategic goals and operational metrics across the capital program.

In 2023, C&D initiated a Digital Strategy Roadmap, marking the beginning of the design and transition to a fully unified system. C&D has started to implement immediate enhancements in how project data is captured, stored, and analyzed. This approach, along with improvements to internal controls processes, is positioning C&D as a leader in program and project controls. With these early initiatives, C&D is advancing analytics capabilities, developing tools for enhanced bid analysis and improved negotiation support, and establishing critical KPIs throughout the agency. Additionally, C&D has formed a dedicated data and quality control team and has put in place standardized systems for project document management. These measures ensure accurate filing and tracking of project performance and documentation.

Digital Strategy Roadmap

To help improve the efficiency and transparency of all of C&D's digital tools and data, C&D completed a digital strategy planning process in 2023. The result of this process, the Digital Strategy Roadmap, was completed in 2023. The Roadmap recommends a series of initiatives that standardize and consolidate the agencies' processes, tools, and data. Upon release of the Roadmap, a Digital Implementation Office was created to implement the overall Digital Strategy.



Take Advantage of Innovations in Technology

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 is expected to improve time and cost savings for project design. C&D has begun to use the modeling technology in stations and core infrastructure to create a digital representation of MTA assets that provides more dynamic information to project teams.

Going forward, C&D will invest further in identifying, piloting, and implementing new innovations in technologies and practices. This will include further implementation of a BIM/Digital Twin strategy and exploring the use of subsurface and 4-dimensional modeling. Another example is piloting 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 reduce risks to worker safety.

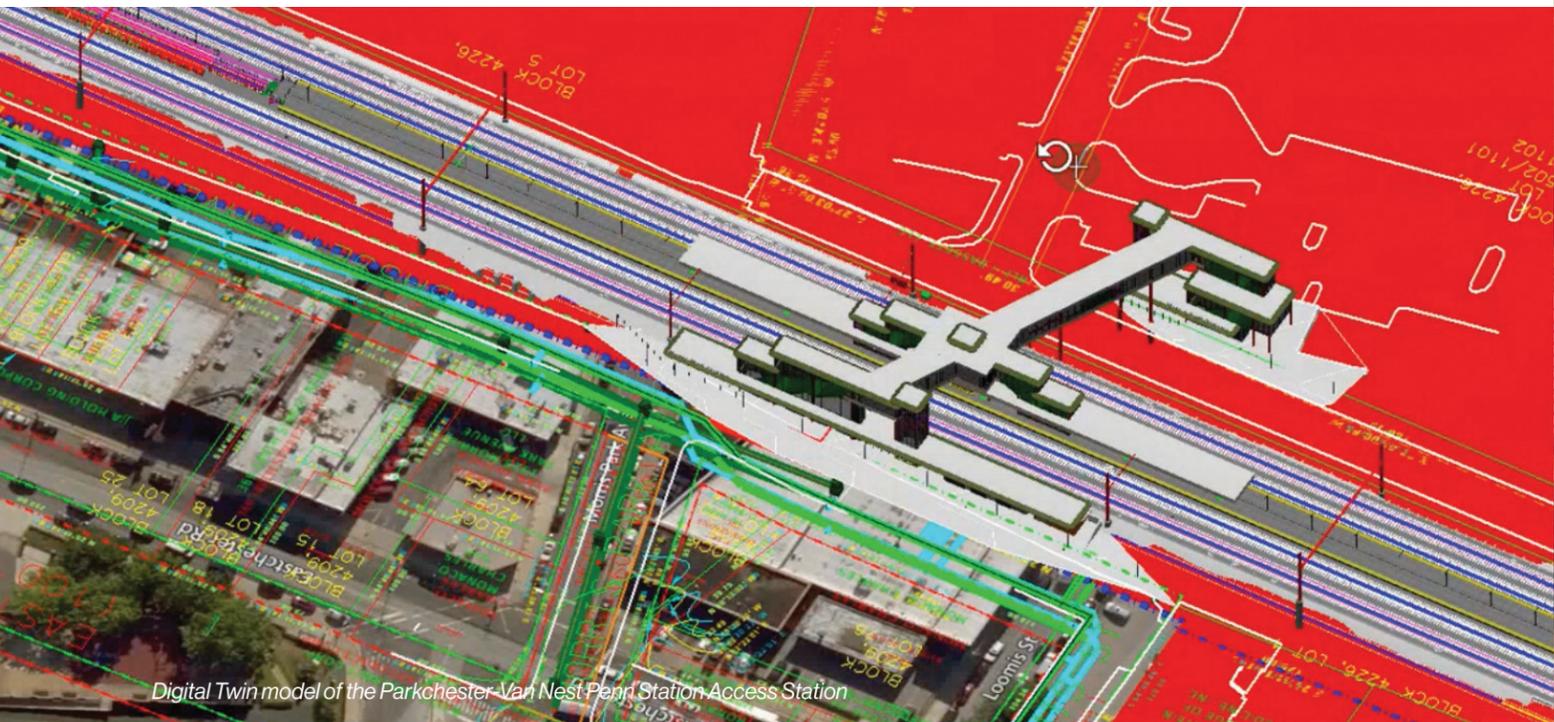
Technological Innovation

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.

Digital Twins

A Digital Twin is a virtual model that enables users to visualize a physical object, track changes, and perform analysis on that object. C&D is using this technology at multiple stations and support facility projects as part of a larger BIM/Digital Twin strategy to better understand and optimize asset performance.

In the BIM/Digital Twin strategy, asset modeling is being used from the start of a project and is eventually handed over to operating agencies. The use of a single, dynamic model helps form a reliable basis for decisions across agencies and reduces the labor time required create, annotate, review, and plot contract drawings. In 2024, C&D is implementing BIM modeling on accessibility projects at stations across the system.



Digital Twin model of the Parkchester Van Nest Penn Station Access Station



Drone photo of the Covert Av Grade Crossing Elimination during LIRR 3rd Track



INITIATIVES & MILESTONES

Verrazzano-Narrows Bridge

EXECUTE THE PROGRAM

	INITIATIVE	2023 PROGRESS	2024 MILESTONE
Deliver at Scale	Strategically leverage delivery models	Awarded C&D's first Progressive Design-Build contract	Develop guidance for delivery model selection and advance earlier selection
	Maximize value from contractors and consultants	Modified general conditions terms to balance risk in partnership with contractors	Optimize use of contractor and consultant incentives & performance evaluation
	Attract more quality bidders and increase proposals	Conducted contractor outreach for firms outside of New York City	Conduct targeted industry outreach Develop projects of diverse sizes and scopes within 2025-2029 Capital Plan Achieve more balanced annual procurement cycle
Contain Costs	Enhance upfront scope definition with project baselining and change management process	Instituted project baselining procedure for projects in planning and design	Improve upfront planning through baselining process
	Limit over-customization through simplified design requirements, rigorous upfront scope review, and performance-based specifications	Conducted peer agency benchmarking and simplified specifications for Track and Mechanical work	Continue to move towards performance-based requirements Develop master specifications for LIRR and MNR
	Reduce utilities costs and delays through improved coordination and review	Continued robust engagement with utilities providers and third parties	Establish more rigorous review structure for utilities relocation and third-party costs
	Increase efficiency and productivity of outages and internal force account resources	Improved force account tracking and prioritization processes	Develop tools and procedures to better estimate and enhance use force account resources Use geographic bundling to inform the 2025-2029 Capital Plan
	Continue to advance reforms to reduce cost premiums	Implemented managed care pilot and achieved \$295 million in OCIP insurance savings in 2023	Develop robust project controls functionalities Identify cost savings in priority projects

EXECUTE THE PROGRAM

	INITIATIVE	2023 PROGRESS	2024 MILESTONE
Tackle Priority Projects	Execute reforms for delivery of technology projects	Conducted strategic review of OMNY	Advance strategic planning for future of Control Centers and rolling stock procurement
	Leverage technology to advance MTA priorities	Implemented Track Trespassing initiatives, including pilot for front facing cameras	Plan for next generation of modern, secure fare gates
Increase Diversity	Build capacity for MWBE, DBE, SVDDB firms, with focus on reducing disparity-in-disparity	Shepherded firms through MWBE certification working with State partners	Grow number of MWDBE firms that do work with C&D through targeted outreach Streamline certification of MWBE with State partners
	Grow the Small Business Development Program	Awarded \$68 million in contracts for small businesses and improved financing and mobilization support	Recruit diverse participants to grow the SBP program Source projects to match increased \$ cap
	Expand local hiring and training opportunities	Expanded local hiring program and implemented on select major projects	Launch pre-apprenticeship training programs

PLAN FOR THE FUTURE

	INITIATIVE	2023 PROGRESS	2024 MILESTONE
Advance Long-Range Planning	Develop the 2025-2029 Capital Program	Released 20-Year Needs Assessment	Propose 2025-2029 Capital Program
	Advance promising expansion and enhancement projects	Evaluated expansion and enhancement projects through Comparative Evaluation as part of 20-Year Needs Assessment	Shepherd environmental review of Interborough Express Conduct feasibility study on westward expansion of Second Avenue Subway along 125 St
Build In Sustainability and Resilience	Integrate resiliency and sustainability framework in capital planning	Announced commitments to slash MTA's greenhouse gas emissions by 85% by 2040	Launch the Climate Resiliency Action Plan and Climate Sustainability Action Plan
	Advance projects to combat climate risks and meet emissions reduction goals	Awarded contracts to mitigate flash flooding impact at stations and completed Sandy resilience upgrades	Advance planning for key resilience projects, such as the Hudson Line, Mott Haven Yard, and Westchester Yard
Leverage MTA Assets	Progress implementation of wireless connectivity within the system	Advanced design and planning for wireless connectivity installation	Continue wireless connectivity expansion underground, including the Times Square Shuttle tunnel Establish Wi-Fi at 30 above-ground stations
	Advance public-private partnerships to maximize revenue and in-kind improvements	Designated developer for Gun Hill Bus Electrification Facility Completed in-station screen installations for NYCT and LIRR	Raise revenue through TOD transactions Continue to improve accessibility through the Zoning for Accessibility program
Connect More Riders to Transit	Support additional residential and commercial density in and around transit links	Closed deals on air rights sales and ground lease deals to support housing development	Advance planning and issue RFPs for commuter parking sites to support Executive Order 30
	Support regional and statewide initiatives to foster transit-oriented development and encourage access to transit	Installed bike racks to achieve 85% coverage for commuter rail stations Assisted municipalities with First Mile Last Mile toolkit	Achieve bike parking near 100% of subway stations Issue RFP for secure bike parking pilot

BUILD THE ORGANIZATION

	INITIATIVE	2023 PROGRESS	2024 MILESTONE
Strengthen Organizational Capacity	Attract, reward, and retain high performing and diverse talent	Completed staff consolidation and recruited 200 net new employees Expanded graduate trainees and interns	Develop data-driven recruitment and retention plan to maintain staff levels to support ambitious capital program
	Provide an efficient framework for agency operations	Created the Office of Corporate Performance	Launch agency-wide mentoring program Continue to unify policies & procedures
Harness Data and Technology	Provide insight for decision makers at all levels of the organization	Create dashboarding tools for internal project management and reporting	Standardize data structure and continue rollout of analytical tools
	Advance integration of data systems	Developed 5-year digital strategy roadmap	Initiate implementation of Project Management Information System (PMIS)
	Leverage innovative tools, techniques, and technologies	Implemented P6 scheduling for all projects	Increase adoption of P6 cloud environment Broaden application of BIM and Digital Twins



APPENDIX

Progress Update on Crowe Forensic Audit Recommendations

In 2019, per Section 1279-f of the New York State Public Authorities Law, the MTA hired the consultant firm Crowe to perform a forensic performance audit of the agency's capital planning process. The thorough evaluation identified nine areas of improvement across three categories: better cost estimating and control, more accurate inventorying of assets and their conditions, and improved capital planning processes.

The audit coincided with the creation of a new capital delivery agency: MTA Construction & Development (C&D). In 2019, the MTA formed C&D to serve as an integrated and streamlined capital planning, development, and delivery arm, bringing together teams and functions which were previously distributed across New York City Transit (NYCT), MTA Bus Company, Long Island Rail Road (LIRR), Metro-North Railroad, and Bridges & Tunnels (B&T). This unified capital delivery agency has enabled efficiencies in management, fostered innovations, and encouraged best practices throughout the system.

As illustrated throughout this Strategic Plan, C&D has made significant improvements to MTA's capital planning and delivery processes since the 2019 Crowe audit, with demonstrated results:

C&D has doubled down on containing costs through a variety of measures, including improved upfront scoping and value engineering, enhanced management and oversight of force account costs, reformed insurance, and dedicated efforts to increase competition. Since 2020, bids on MTA projects have come in an average of **6% below estimate**, resulting in an overall bid savings of \$890 million. Of awarded core construction projects in the 2020-24 Capital Plan, **over 90% are within budget** as of EOY 2023. Outside of savings identified for third-party contractors, the MTA has also identified significant savings in support costs. For example, reforms in how the MTA procures project insurance through its Owner Controlled Insurance Program (OCIP) has resulted in \$395 million in savings compared to market trends in 2022 and 2023.

C&D has accelerated its delivery of projects by strategically bundling work by geography and/or project type to create efficiencies, utilizing a greater variety of project delivery methods, and expanding the use of "A+B" bidding to incentivize schedule reductions, among other methods. Since 2021, MTA has achieved an **average schedule reduction of 4 months** on new contract awards. Highlights include a 25-month schedule savings for track and signal replacement on the 8th Avenue Line, a 21-month schedule savings for Phase 1 of the Park Avenue Viaduct Rehabilitation, and a 14-month schedule savings for structural repairs on the Eastern Parkway Line. In addition to shortening the duration of projects, C&D has also significantly scaled up its capacity to deliver work, **tripling** the number of ADA accessibility projects in construction and achieving a **record-setting \$11.4B in annual commitments in 2022**.

C&D has reformed MTA's approach to capital delivery, integrating a full-lifecycle cost approach to capital planning, fostering exchange of best practices across project types, and incorporating new technologies into both our physical construction and our program management. For example, MTA has reformed its approach to signal modernization, resulting in significantly less wayside equipment and reducing both capital and maintenance costs. Similarly, MTA has also overhauled its approach to painting and structural preservation of elevated subway structures, doubling the lifespan and reducing the lifecycle cost of this work. MTA has also streamlined procedures and eliminated duplicative activities, such as **reducing redundant submittal and review processes and simplifying design requirements to remove unnecessary scope**, to save time and money and to optimize the use of internal and external resources.

Below are more detailed updates on actions taken in response to each Crowe audit finding:

Cost Estimates

Finding 1

MTA can improve cost estimates with more formal, standardized, and consistently applied cost estimating procedures and agency documentation requirements.

Accounting for—and ultimately reducing—the cost of capital projects is a top priority for the MTA.

The MTA has made progress in improving how it estimates costs in the five years since the audit and is continuing to make strides to optimize processes for the future. As standard practice, the MTA uses the Federal Transit Administration's (FTA's) estimating guidelines and develops cost estimates based on historical data from past projects of comparable scale, inflation adjustments, prevailing labor wage rates, and standard contingencies based on the stage of design development. Estimates are prepared utilizing industry best practices and standard templates. Currently, the MTA is developing a new capital cost estimating procedure and has engaged an external expert cost and controls team to advise and train staff.

Beyond more accurate cost estimates, the agency undergoes regular systematic reviews of cost-control processes and investment options to look for opportunities to bundle projects for efficiency and cost savings. Since the creation of C&D, the MTA has also conducted more risk assessments than ever before, including cost-containment exercises that have reduced the cost of many projects.

Accurate estimating and subsequent control of project costs is linked to robust project planning, particular at early stages. Since the creation of C&D, the agency has implemented a Project Baseline Procedure, which requires documentation of key project details—including cost—at the outset of project planning, as well as updates throughout the project development process. This procedure updates the previous master planning process (as described in the audit) and standardizes the methodologies by which all projects are executed to increase accuracy in cost estimations, establish risk profiles and mitigation strategies, and develop project performance estimates.

Finding 2

MTA's budgeted costs exceed comparative benchmarks for various reasons and the MTA should consider a range of alternative management approaches to control future costs.

MTA's core infrastructure projects, which make up over 80% of the 2020-2024 Capital Plan, are cost-competitive with similar projects undertaken by peer agencies such as Barcelona, Boston, Philadelphia, and Chicago. While expansion projects are expensive in the New York region, recent projects, such as the Second Avenue Subway, have significantly lower costs per rider compared to peer agencies.

Since 2019, the MTA has made significant progress in reducing and containing the costs of its capital projects, including achieving savings of \$890 million in project costs compared to engineer estimates from 2020 through 2023. A variety of other reforms to manage costs throughout a project's lifecycle have been implemented, including:

Planning

- Bundling projects has allowed the MTA to achieve more work with fewer contracts, minimizing costs and reducing disruptions. For example, in 2018, \$1 billion in station improvements were awarded across 20 contracts. In 2023, \$1.7 billion worth of improvements were committed with only ten contracts.
- C&D has streamlined project requirements and specifications, such as creating master specifications to ensure alignment across projects. The agency continuously reviews specification requirements, including taking into consideration contractor feedback, to remove unnecessary scope requirements.
- The MTA continues to pursue various methods of reducing costs, including working with national and state code officials to remove unnecessary requirements and improve review processes. Changes that are already being implemented include using fire protection systems appropriate for rail stations rather than buildings, integrating communication systems for both public address and emergency notification, coordinating exit signage with station wayfinding, and using performance-based codes and standards to demonstrate compliance through engineering and quality reviews.
- New cost estimation procedures are currently being trialed and are projected to increase savings by improving the accuracy of how the costs of large, complex projects are calculated.

Contracting

- 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. This approach allows C&D to grow its roster of contractors and keep capital costs competitive.

- New incentives have been introduced within contracts for projects across the MTA to reward contractors who complete projects on time and within budget, including the introduction of “A+B” bidding, which takes into consideration both project cost (“A”) as well as project schedule/disruptions (“B”). C&D has also introduced a performance evaluation program for consultants that evaluates performance against financial incentives.
- C&D has leveraged various alternative delivery models, including scaling up the use of Design-Build and initiating the MTA’s first use of P3 and Progressive Design-Build. These have fostered greater innovation during design, shortened project schedules, and reduced risk by integrating design and construction teams.

Logistics

- Since 2019, MTA has utilized several 24/7 track outages and station closures to perform repairs and improvements more expeditiously. This includes track replacement on the Archer Avenue Line and 63 St Line; structural repairs on the Concourse Line and Flushing Line; and station repairs and upgrades at numerous locations across the system. This also includes upcoming signal modernization work on the Crosstown Line and structural repairs and flood mitigation on the Rockaway Line. These outages and closures have enabled construction to be performed more rapidly, at lower cost, and with shorter-term disruption to riders.

Project Management

- Efforts are continually being made to reduce force account costs through bundling, A+B bidding, and more efficient execution of right-of-way work. C&D has also improved monitoring and oversight of these resources by standardizing data and developing internal dashboards.

Communication

- MTA’s newly-integrated Government and Community Relations team and MTA C&D’s Strategic Public Affairs team manage a world-class community engagement process. Working directly with elected officials, Community Board, local community organization, and everyday neighbors, MTA ensures that the public is informed about capital projects. This can include presentations at public meetings, regular email newsletters, construction schedule lookaheads, and more.
- Since 2020, this approach has yielded significant benefits. As the scale of the capital program has ramped up, so too have the potential impacts to neighbors. Thanks to this robust engagement, potentially challenging projects like new substations near residential buildings or ADA-elevators next to busy shops have been managed successfully thanks to proactive and consistent communication.

Asset Inventories & Conditions

Finding 3

MTA can enhance linkages between capital projects included in the 2020-24 Five-Year Capital Plan and assets targeted for repair/replacement within agency asset inventories

To better inform investment decisions for the upcoming 2025-29 Capital Plan, the MTA has undertaken a thorough effort to modernize and standardize its asset inventories. The planning process for the 20-Year Needs Assessment (TYN), the precursor to the next capital plan, has involved extensive work and inter-agency cooperation to establish detailed inventories of all MTA capital assets, including traditional metrics, such as asset age and surveyed condition, as well as additional essential metrics including performance, criticality, parts obsolescence, and compatibility with modern systems. Using this more complete understanding of asset condition and future needs allows the MTA to target investment priorities that more strategically address capital needs and deliver improvements to service reliability and overall passenger experience. Actions taken to date are discussed further in response to finding #4.

Finding 4

MTA has comprehensive asset condition databases which reflect existing conditions, however MTA should supplement its asset condition database contents to better support asset condition determinations

The MTA published the 2025-2044 TYN in October 2023. Improvements and enhancements of capital asset information were integral to the analytics and prioritization of needs across the 20-year timeframe. The customary asset age/condition data were in many cases augmented with performance and other data. These data came from a combination of the MTA agencies’ maturing Enterprise Asset Management (EAM) systems, performance and work-order data, condition surveys, and mapping of selected data in Geographic Information Systems (GIS). This information expanded the ability to consider asset performance, criticality, as well as asset condition or age. Information such as asset repair work orders, assets that were the root cause of delay incidents, and asset conditions documented by consultants or other parties supported prioritizations of needs in the TYN. These additional data were combined with baseline asset age and condition data to augment understanding of whether assets meet the “fit-for-purpose” criteria, and when they may need to be replaced or repaired via the MTA’s capital program. Examples include:

- Assessing the concentration of line structure defects needing capital repairs from the locations of defects logged by engineering inspectors and mapped in the MTA’s GIS applications.
- Quantifying service impacts reported in delay/incident dashboards due to signal equipment failures as a factor in setting location priorities for the signal modernization program.
- Using a priority scoring system for bridge structures that includes weighted average of condition, load rating, risk factors, and criticality based on location.
- Assessing vulnerabilities from storm water intrusion or intensive rain events potentially affecting train tunnels, rail yards, the Hudson Line right of way (ROW), and embankments or rock slopes.
- Work orders for signal and power systems, track maintenance, elevators, and escalators.

Through the implementation of EAM, the MTA continues to enhance the quality of information readily available about its assets, including useful life determination, inspection and maintenance history, capital investment history, and other operating information that help determine criticality and timing for investments. Such information is continuously being improved and covers a wider range of the MTA’s assets, leading to enhanced succession planning and knowledge planning for the MTA as data will be more transparent and understandable for all employees.

Capital Planning Process

Finding 5

MTA has yet to realize significant MTA level capital planning benefits from Enterprise Asset Management (EAM)

MTA continues to advance its agency-wide implementation of EAM in service of numerous business objectives, including strategic capital planning. The foundational step of registering assets into a common database is progressing and is currently on track to be completed by NYCT Subways in Q3 2025, with the other agencies to follow thereafter. MTA HQ has developed an EAM Information Systems master plan and project schedule for each operating agency, and the various operating agency teams are adhering to the schedule with MTA HQ oversight and guidance for commonality and standardization.

As EAM is being implemented, agency teams are continually looking for ways to improve capital planning activities by utilizing EAM tools and data. This asset data was instrumental in the TYN process, for example. Additionally, C&D is using asset data and location information as a foundation for its Climate Resilience Roadmap, including evaluation of asset vulnerability and prioritization of locations for flood mitigation investment. MTA will continue actively look for these types of opportunities as the EAM program and systems continue to mature.

Finding 6

MTA's largely manual TYN and Five-Year Plan processes and disparate data platforms make it difficult for the MTA and agencies to assess priorities, backlogs, and alternative scenarios.

The MTA has developed a State of Good Repair Decision Support Tool (SGRDST) to augment its robust business process for sizing and developing a new five-year capital program. The SGRDST is based on an inventory and condition assessment of all MTA capital assets, and includes over 66,000 line items across NYCT, MTA Bus, LIRR, Metro-North, B&T, and MTA Police Department (MTAPD). The tool includes unit costs, age and/or condition rating, useful life and operational impact, and operating costs impacts. The tool runs scenarios that feed off of prioritization, operating costs, criticality assessments, and passenger impact under various funding scenarios and demonstrates impact with respect to:

- Performance measures: State of good repair (SGR) backlog, reliability, condition, and percentage of assets in SGR.
- Spending measures (by asset class by agency): Annual capital spending, annual operating costs, and cumulative capital and operating costs.

The SGRDST is being used to help understand the impact of various funding levels for the 2025-29 Capital Plan, and the knock-on impact on assets and agency state-of-good-repair. The MTA is in the process of updating the asset inventory to account for recently completed projects, as well as integrating in-depth track asset condition data based on track geometry car data and updated modeling.

In addition to the SGRDST, the MTA employs several other resources to aid data compilation and decision making, including the FTA's Decision Support Tool and agency-wide scheduling software. New tools and software are always being considered as they are developed. The MTA will continue to innovate by investing in new technologies to automate processes and improve performance.

Finding 7

The MTA can improve the transparency of performance measures and dashboarding to more closely monitor Five-Year Plan and project outcomes.

The MTA issues numerous public reports and resources to increase the transparency of the capital program. These include:

- Capital Program Dashboard: A digital tool that offers a macro-level and project-specific view on progress towards the 2020-2024 Capital Program, including original and current budget and schedule. The Capital Program Dashboard is updated quarterly.
- Monthly Commitment and Completions Report: Details performance against goals for project awards and substantial completions across operating agencies and business units.
- MTA Traffic Light Report: Provided quarterly to the Capital Program Committee of the MTA's Board of Directors and the public by the MTA's Independent Engineering Consultant (IEC). Reports on the schedule, cost, and scope of each active project using key performance indicators (KPIs) and commentary for those projects that fall behind in schedule or experience cost growth or significant scope changes.

The MTA Board Capital Program Committee receives monthly briefings on various areas of the capital plan from C&D and/or agencies with additional insight and observations provided by the MTA's IEC. Annual Plan Amendments for each active capital plan, reviewed and approved by both the MTA Board of Directors and the NYS Capital Program Review Board, are posted on the MTA's website. All MTA capital program data are also provided to the NYS Open Data Portal.

In addition to these reports, new metrics have been introduced that have helped improve understanding of capital projects, both internally and externally. Project descriptions have been standardized, allowing more projects to have up-to-date information with increased accessibility. Annual capital plan amendments use these new metrics to demonstrate how project plans and budgets have evolved in the past year. Beginning in 2023, C&D has also begun releasing an annual Strategic Plan to document key agency KPIs and highlight strategic initiatives for the next year.

Additional project tracking improvements are in development, and the MTA is continuing to seek new ways to improve transparency in advance of the release of the next Five-Year Plan. The MTA is working within the New York State Legislature's rules for transparency to ensure information is available for all and easy to understand.

Finding 8

There are some limitations in the MTA's capital planning review and approval processes.

The MTA continues to comply with legislatively required review and approval processes for the capital program and is committed to public engagement and transparency throughout the planning, development, design, and delivery of capital projects. To allow public input in long-term MTA planning, each TYN is submitted to the New York State Capital Program Review Board (NYS CPRB), which includes representatives of the governor, senate, assembly, and mayor. The TYN then informs subsequent Five-Year Plans, which are also submitted to the MTA Board and NYS CPRB for review and approval the following year.

The MTA has also committed to submitting amendments to the Five-Year Plan each year to keep the plan as accurate and transparent as possible and continues to uphold this commitment. These annual plan amendments are submitted and approved by the MTA Board and NYS CPRB.

The MTA also continues to engage with the public and other key stakeholders to ensure they are informed on upcoming and existing projects. The MTA maintains and publishes the Capital Program Dashboard, which tracks the progress of the MTA's current Five-Year Plan. The dashboard is a public tool intended to increase transparency and awareness of the MTA's capital process and project outcomes. To engage community members further, the MTA dedicates outreach personnel to serve as day-to-day points of contact for projects and hosts meetings and workshops to solicit input from elected officials, stakeholders, and the general public on priorities throughout the system in their neighborhoods.

Finding 9

MTA and agencies do not have comprehensive and fully documented capital planning policies and procedures.

As a newly unified agency, MTA C&D is working to implement comprehensive procedures that address all aspects of project planning and delivery. Since its creation, C&D has developed streamlined and standardized policies and procedures governing the capital program and capital project lifecycle. These include a new Project Baseline Procedure, which outlines the development of project requirements and projected scope, schedule, and cost information at various stages of project development; new change management procedures that ensure a consistent but expedient decision-making process for contract changes; new procurement guidelines; and more. C&D has also established an Office of Corporate Performance dedicated to developing and implementing consistent agency-wide policies, procedures, data, digital tools, and systems.



Platform construction during Jamaica Capacity Improvements Phase 1

Credits & Acknowledgements

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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 20 Year Needs Assessment visit:
[future.mta.info](https://www.future.mta.info)

Cover photo: Recently completed Croton-Harmon Yard & Shops complex



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