

The Construction & Development Playbook

Building Better, Faster, Cheaper at the MTA



Construction & Development

August 2020

The background image shows a subway station with a blue text overlay. The station has a brick wall with a red 'EXIT' sign and a poster. A staircase with a metal railing is visible on the left. The text overlay is a solid blue rectangle with white text.

Construction & Development plans, rebuilds, improves, and expands the MTA's extensive network of subway, bus, commuter rail, bridge, and tunnel infrastructure.

We maximize the value of our capital investments by emphasizing top-tier project-management practices and collaboration with our client operating agencies: New York City Transit, MTA Bus, Long Island Rail Road, Metro-North Railroad, and Bridges & Tunnels.

EXCELSIOR

Downtown & Brooklyn

Broadway to



Dear colleagues,

Welcome to Construction & Development! We are delighted to have you on the team.

There's no denying that things have changed dramatically in recent months. We created C&D late last year with the charge of delivering on a historic \$55 billion plan. Today—although we are doing everything we can to shore up the MTA's finances—the future of the capital program is unclear.

Yet our work at C&D remains as important as ever. MTA's capital assets still need a great deal of investment. And with more limited resources, it's even more important for us to deliver capital projects better, faster, cheaper. With you on the team, we will continue to streamline processes, find efficiencies, promote innovation and increase accountability.

This document describes our vision for C&D, and what we're doing to get there. Many of the elements of this Playbook are already established or well underway; others we are starting to tackle now.

How we implement change will evolve as we get to know each other and work on projects. But our overarching goal will always be to unleash the knowledge and resourcefulness of our team members to develop better, faster and cheaper ways of building at the MTA.

Onward!

Janno

What C&D Does

1 We Assemble the Capital Program

We assess and prioritize the MTA's infrastructure needs to create a comprehensive and strategic capital program that promotes better transportation in the region

2 We Plan, Develop & Award Projects

We identify project concepts that address our priorities, developing them into awardable projects with demonstrated value in a cost-constrained program

3 We Deliver Projects

We use the best project management strategies and performance data to resolve issues quickly and deliver projects on scope, schedule, budget—and safety

4 We Oversee the Capital Program

We make sure that the MTA fulfills the commitments made in its five-year capital plans efficiently and transparently

5 We Leverage MTA Assets

We engage the private sector and utilize MTA property to generate revenue for the agency and additional amenities for our customers

How We Do It

C&D sets and articulates long-term, region-wide **strategic priorities**. These priorities, combined with **consistent and comprehensive asset-condition data**, drive capital investment prioritization.

Collaboration among Planning, Development, Contracts, Delivery and client agencies begins early in the project life cycle, allowing for **more seamless progression** from planning through hand-over.

At multiple points in the project-development process, we require projects to justify their benefits and their costs – i.e., their **demonstrated value** in a cost-constrained program.

C&D strategically bundles and schedules projects, in coordination with client agencies, to maximize track access opportunities, **optimize resource usage**, and minimize impacts on customers.

The contracting structure of a project is an essential ingredient of its success. With an emphasis on **Design-Build**, C&D tailors the contracting strategy for each project to realize its greatest value to the MTA.

We **streamline** the delivery of projects by appointing **Project CEOs** and empowering them to take the decisive actions needed to keep their projects **on schedule and on budget**.

We emphasize **excellence in project management**. We collect and use data to measure project performance and course-correct. We also use the **data to hold ourselves and our contractors accountable**.

We **leverage the scale** of the MTA's investment to shape the vendor market to our benefit. We collaborate more closely with our contractors to better understand each other's priorities. **Expanded industry partnerships** increase competition, drive down costs and promote innovation.

We foster a culture of **continuous learning**, resourcefulness and deliberate risk-taking.

Who We Are

C&D's departments collaborate to plan, develop and deliver capital projects to MTA's operating agencies—C&D's client agencies.

President's Office



Janno Lieber

Policy development
Strategic initiatives
Stakeholder engagement
Board/elected relations



John McCarthy

Planning



Fredericka Cuenca

Capital strategy
Capital asset planning
Transit-oriented development
Regional long-range planning
Broadband partnerships
Real estate
Advertising

Delivery



Mark Roche

Delivery Services Office
Integrated projects
Stations
Infrastructure
Signals & train control
Bridges & Tunnels
Railroads
External Partner Program
Small business mentoring program



Cathy Sheridan

Development



Tim Mulligan

Program controls
Budget & finance
Owner support services
Project support services
Industry partnerships

Contracts



Evan Eisland

Law
Procurement
Claims & changes
Board actions

Operations



Shawn Moore

People management
Finance operations
Diversity compliance
Technology



7:18 AM
GRAND CENTRAL
at: Tremont, Melrose

190 ST

To Elevator



We Assemble the Capital Program

1

C&D assesses and prioritizes the MTA's capital infrastructure needs to optimize the value of investment for our customers. We work with the MTA's operating agencies and outside stakeholders to better grasp local conditions and regional socio-economic travel trends.

C&D's Five-Year Capital Plans and Twenty-Year Needs Assessments are grounded in the rigorous, data-driven documentation of existing infrastructure conditions, expected regional transportation demands, and risk-based strategies to evaluate capital investments across the MTA region.



We track asset conditions objectively, consistently and transparently

State of good repair consumes the overwhelming majority of C&D's capital spend. C&D Planning leverages the asset-condition data provided by MTA operating agencies and whole life cycle cost data to determine which investments would provide the most benefit to customers - a particularly critical exercise in times of constrained resources. C&D promotes consistency in asset ratings between agencies and between asset classes to support an investment strategy that is objective, strategic, and transparent.



We engage with our stakeholders

External stakeholders help inform C&D as we develop a system-wide vision for the MTA capital program. These stakeholders include elected and other public officials, civic and advocacy organizations, business leaders, industry groups and transportation experts. All of these perspectives help us better understand regional trends and shape our own priorities.

The MTA's operating agencies also continue to be essential partners for C&D, involved from capital program inception through project development, delivery, and handover.



We prioritize & synthesize needs into plans

The Twenty-Year Needs Assessment, typically prepared once every five years, lays out how the MTA intends to prioritize capital projects over the next two decades. It is the product of close collaboration between C&D Planning, C&D Development and the operating agencies.

The Capital Plan, released every five years, describes the MTA's investment strategy across all agencies and provides a financial structure for these investments. It is the synthesis of C&D's asset condition/asset strategy initiatives, investment prioritization efforts, and budgetary constraints. The C&D projects that are designed, developed, and delivered in the subsequent period are derived from these plans. Budget commitments in the capital plans are typically provided at the asset-category level—more specific details about individual projects, including scope, costs, and timelines are documented publicly as projects are awarded.



We prioritize needs based on a regional vision for transit

The integration of all planning functions at C&D allows the MTA to consider the future of the entire region in deciding which capital investments best serve its needs. It also better connects long-term planning priorities to the development and delivery of projects.

Case study:

Linking asset condition data with investment strategies

C&D Planning is developing new tools to seamlessly link assets, key attributes, condition, maintenance history, and performance. One of the first such tools, developed in partnership with the Elevator & Escalator team at NYCT and Enterprise Asset Management, focused on elevator and escalators. The new database assembles critical information like age and unscheduled maintenance history, percent of time in service, station depth, ADA, as well as whether the elevator or escalator is scheduled for a capital-program investment. This database gives a comprehensive picture of the entire asset class, along with the information needed to determine the priority of each unit. The goal is to develop similar datasets for all MTA assets to guide the Twenty-Year Needs and Five-Year Plan development processes.



Case study: COVID Project Acceleration

C&D, in partnership with the MTA's client agencies, leveraged the historical lows in transit ridership and the system's unprecedented nightly closures to accelerate some of our capital construction work that is most disruptive to customers.

The Development department identified projects that required construction work in stations or on the right-of-way, and where construction could begin in the next six months. These include the rehabilitation of the Rutgers Tunnel (F), extensive track repairs on the Archer Avenue Line (E), structural repairs on the Eastern Parkway Line (2-3-4-5), new ADA stations, and improvements to several bridges.





We Plan, Develop & Award Projects

2

C&D Development takes initial investment options through a rigorous process to ultimately end up with projects that optimize cost-benefit ratios, while minimizing customer impact. The Planning, Development, Delivery and Contracts teams work with our client agencies to identify project benefits and requirements, advance bundling and piggy-backing strategies, develop project-execution and hand-over plans, and tailor contracting strategies to award and deliver projects most effectively.



We select and define projects early on, documenting requirements, bundles, scopes, and execution strategies

C&D Development works with C&D Planning, C&D Delivery and our client agencies to define projects early on in the project life cycle, determining, first, project benefits and project requirements in measurable and quantifiable terms, functional deliverables and potential constraints. That work determines an investment's initial feasibility.

From there, the Development team defines a project scope by bundling together investment options for outage and resource-usage efficiencies. Meanwhile, the Delivery team creates a preliminary execution planning strategy, describing how to deliver the project effectively. This preliminary execution planning, in turn, further shapes the project's scope definition.

This early collaboration is critical to identifying top priorities and resolving issues that may arise later as the project evolves and is ultimately built.



We sharpen project sequencing and execution plans to maximize efficiencies

After the Initial Investment Decision is made, C&D Development, C&D Delivery and the client agencies further fine-tune how the project will be executed. This includes bundling and sequencing projects to optimize track access, increase agency program and force-account efficiencies, minimize impact on customers and leverage market conditions. Armed with this information, Delivery can refine its implementation plans, documenting the outcome in the Project Management Plan.



We tailor a contracting structure to the particular needs of the project

C&D employs a range of contracting structures to increase competition, reduce costs and accelerate project delivery. We emphasize Design-Build, but also utilize A+B bidding, public-private partnerships and other contracting solutions that foster a deeper partnership between C&D and our contractors, streamline decision-making, increase accountability and share risk. These contracting approaches lower costs and improve industry participation in the long run.



The investment value of projects is documented and confirmed periodically in the project development process

C&D justifies the investment value of a project at three different points in the project life cycle, as project scope, delivery strategy, costs, schedules and risk mitigations become more detailed. If the potential project's benefits justify its costs and risk, C&D confirms its decision to invest in the project, and it progresses to the next phase.

- An early delineation of the project and its high-level execution strategy proves feasibility and leads to an Initial Investment Decision.
- The Revised Investment Decision is made after more detailed plans on bundling, contracting, execution, and hand-over are developed.
- Finally, after bids have been received but before the project has been awarded, C&D confirms the Final Investment Decision and the awarding of the project.

Case study: 42 St Connection Project

C&D brought together under one umbrella a number of MTA projects that had been underway concurrently along 42nd Street: improvements to the Shuttle, new ADA entrances at Grand Central Station and Times Square Station, Metro-North infrastructure rehabilitation work at Grand Central Terminal, a new in-system walking transfer between Times Sq and Bryant Park, and a handful of large private development projects adjacent to MTA property. By integrating all of these projects under one Project CEO, C&D is compressing project schedules by at least 25%, lowering project-oversight personnel costs and contractor bidding costs, and reducing customer impacts.



C&D Project Life Cycle Framework

The capital project life cycle framework establishes a systematic methodology for how projects are identified, defined and delivered. The goal of this structured approach to project management, with clearly defined roles, processes and products, is to support consistent project performance, repetition of successes and continuous improvement. C&D aims to phase in this framework on select projects by 2021.

Select

Requirements Description

Set client requirements, objectives, functional deliverables, stakeholders and risks and/or constraints; prove project feasibility



Project Delineation

Create a project bundling and coordination plan to maximize efficiency of outage and resource usage



Execution Planning

Describe how the project will be delivered effectively and efficiently, including contracting and risk mitigation strategies; confirm the value of the investment



◆ Initial Investment Decision

Define

Project Development

Further define the project with a delivery strategy that maximizes value. Sequence projects to optimize agency programs and track access



Project Launch

Formally launch a project with an updated project scope, plan, risk, accountability; support full engagement with stakeholders; provide project readiness review



Formal project start-up

Project CEO kick-off



Project Management Planning

Details how the project will be executed, monitored and controlled. Coupled with the agreed scope of work, budget, schedule and risk management plan, the PMP forms the baseline for the Execution Phase of the project



◆ Revised Investment Decision

Execute

Pre-contract Activities

Develop appropriate contracting and procurement products; undertake the bid and select qualified contractor; establish a robust basis for performance management and project controls; confirm final investment value



◆ Final Investment Decision D-B Contract Award



Project Execution

Maximize performance and risk mitigation through proactive and sustained contract/project/agency management



Hand-over

Hand back to the operating agency the project deliverables that support agency operations as set out early in the project life cycle



We Deliver Projects

3

C&D emphasizes excellence in project management as we oversee internal and external parties in the execution of capital construction projects. Every project is managed by a Project CEO, who has both the decision-making power and the project data they need to keep the project on schedule and on budget.

Rigorous project management directly supports C&D's goal of providing more transparency and accountability in the way we plan, design, and build capital projects.



We promote consistency and excellence in project management through the Delivery Services Office

The Delivery Services Office within the Delivery department supports Project CEOs and Business Units, offering technical services and promoting knowledge sharing among and between projects. Specific activities include:

- Providing guidance and expertise on project management, project controls, design, and construction, using standardized and consistent terminology and processes across all MTA capital projects
- Providing the technology platforms for estimating, scheduling, cost, risk, change, document control, design management, and reporting
- Collecting and disseminating project-performance data – the “single source of truth” on project performance
- Promoting skill development and professional growth opportunities for Delivery staff



We empower Project CEOs to make informed and timely decisions

Project CEOs are strong project leads, responsible for delivering their project on scope, schedule, budget and safety. PCEOs begin their engagement on a project before it has been awarded, shaping scope and execution plans before they are finalized.

After the project is awarded, PCEOs have the ability to make nearly all project-related decisions autonomously, as long as they stay within the broad parameters of the project’s execution plan. If project changes affect the execution plan, PCEOs will need to gain agreement via a formal change management process.

The Delivery Services Office supports PCEOs by providing them the project-performance data they need to make in-the-field decisions. This consolidation of decision-making gives PCEOs the ability to take corrective actions quickly, to prevent project costs and delays.



We manage external parties to ensure compliance with contractual obligations

C&D relies on external contractors for specialty equipment and skills, leveraging our talented in-house workforce and accelerating the pace of what we are able to deliver. Managing these external parties effectively is essential to our success. The PCEOs, the Delivery Services Office and C&D Contracts all play a role in tracking performance and enforcing vendor commitments.

At the same time, it is also a C&D priority to live up to our own obligations—processing submittals, reviews, payments and change orders in a more timely way, keeping our commitments to provide the outages needed, allocating risk to the party that’s in the best position to mitigate those risks, and reducing change orders to the maximum extent possible.



We monitor and mitigate risks

C&D identifies risks early and over the entire project life cycle. Development coordinates risk management and mitigation planning across C&D and agency stakeholders in the early phases of a project. After award it is the PCEO's responsibility to keep the risk assessments and mitigation options current. In addition, the Delivery Services Office assesses risk across the portfolio of all ongoing projects, to leverage mitigation strategies at the program scale.



We track progress against scope, schedule, budget, and safety

Project teams engage in rigorous project controls activities to identify performance trends and inform project-management interventions, utilizing best-practice methodologies and data provided by the Delivery Services Office. This leveling across the C&D program ensures uniform quality control, and promotes the effective management of scope, schedule, cost, risk, and change on all projects.

Project performance data is also used to evaluate the performance of external contractors and MTA personnel across all projects, and informs C&D Development in its monitoring of the performance of the capital program as a whole.



We oversee internal parties as they execute project plans

Just as they oversee the work of external contractors, PCEOs are also responsible for ensuring that all MTA parties – at C&D and the relevant client agencies – are delivering their work as expected, as scoped, on schedule, and within budget. Agencies seeking to deviate from the agreed-upon scope, budget, and/or schedule must seek approval from the PCEO in advance of the excess, or reduce work being performed.

Case study: L Project

C&D completed the rehabilitation of the **L** line tunnel three months ahead of schedule, more than \$100 million below budget, and without the shutdown of service that was initially predicted. This was made possible by using innovative construction methods as well as enhanced project management strategies, such as assigning a Project CEO and empowering them to make decisions quickly, integrating contract teams for methods innovation and issue resolution, and sequencing work to maximize the use of all GOs.



MTA On the Go Travel Station



All Nights & Weekends

- every 10 mins in Brooklyn
- every 20 mins between Manhattan and Brooklyn

Travel alternatives

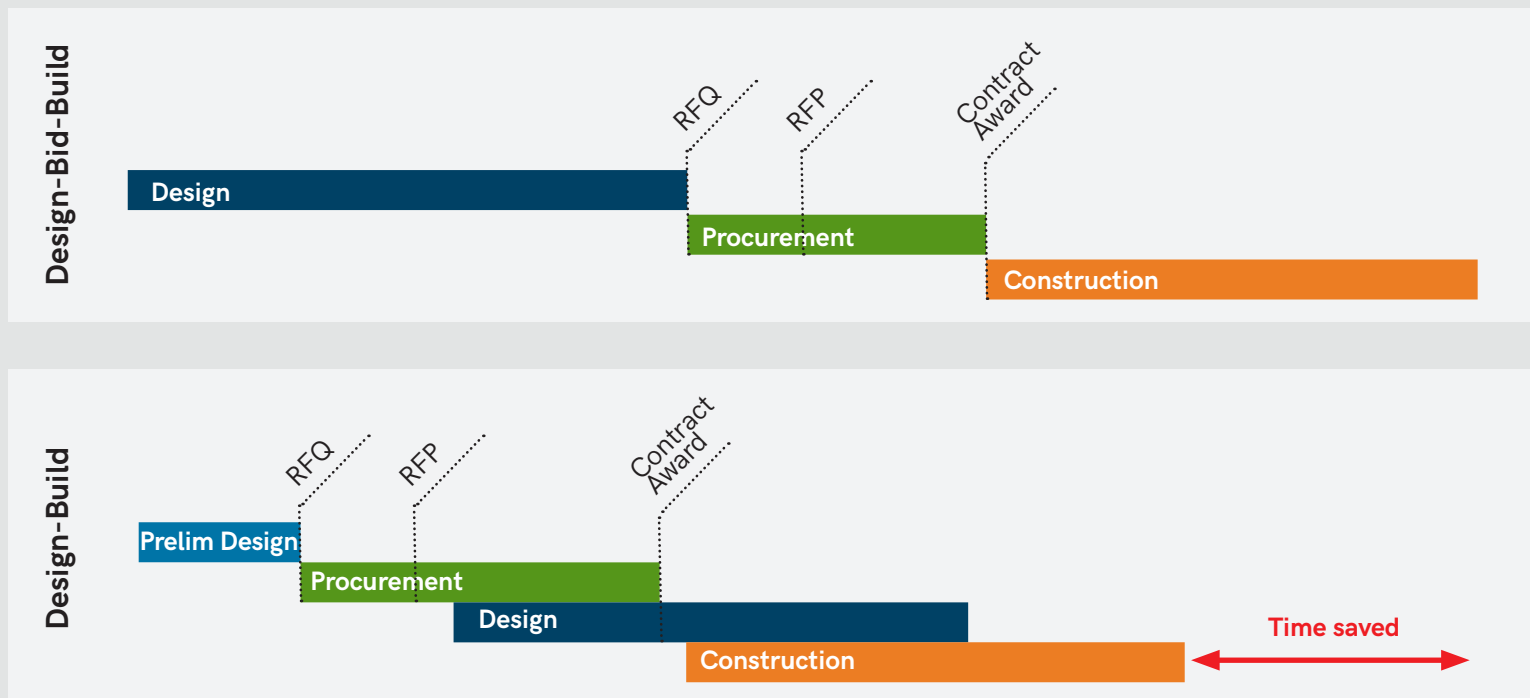
In Manhattan	To Brooklyn
<ul style="list-style-type: none">Take the M14A or M14D from 14 St and 4 Ave	<ul style="list-style-type: none">Take the downtown B to Bleecker St for L (until 1:30 AM each night)For Bedford Av and Lorimer St, take L to Marcy Av for free Williamsburg Link B91/B92 buses

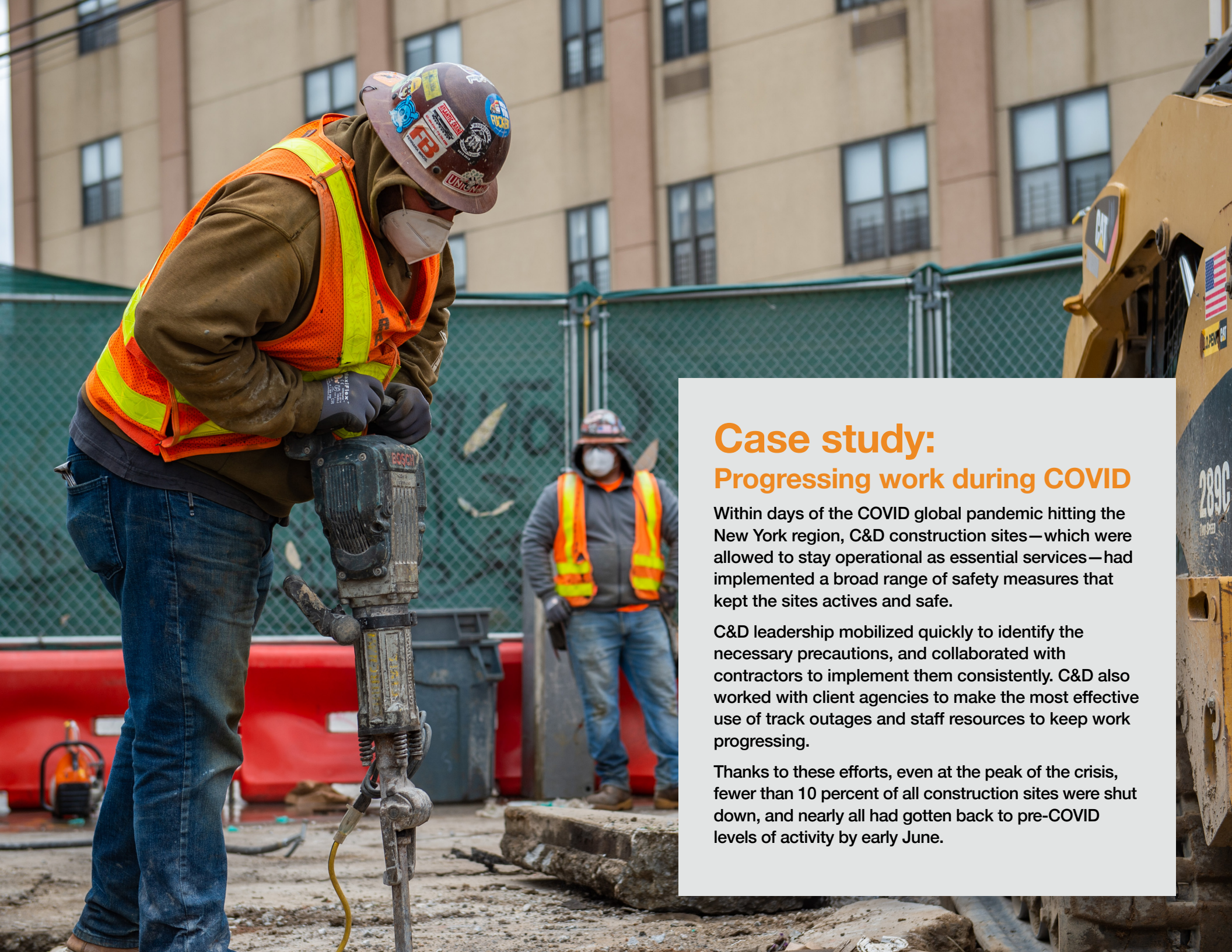
  new.mta.info/L-Project

Maps & Directions  Arrivals  Service Status 

Design-Build promotes collaboration and innovation, saving time and money.

C&D employs a range of Design-Build contracting structures to increase competition, reduce costs and accelerate project-delivery schedules. Design-Build projects are awarded before design and engineering are completed. In the preliminary design phase, MTA establishes project performance and design criteria, which are incorporated into the contract. The selected Design-Builders are then responsible for completing a design that meets those parameters. Undertaking procurement, design and construction in parallel allows for more contractor input, less-prescriptive specifications, and savings on schedule and cost.





Case study: Progressing work during COVID

Within days of the COVID global pandemic hitting the New York region, C&D construction sites—which were allowed to stay operational as essential services—had implemented a broad range of safety measures that kept the sites active and safe.

C&D leadership mobilized quickly to identify the necessary precautions, and collaborated with contractors to implement them consistently. C&D also worked with client agencies to make the most effective use of track outages and staff resources to keep work progressing.

Thanks to these efforts, even at the peak of the crisis, fewer than 10 percent of all construction sites were shut down, and nearly all had gotten back to pre-COVID levels of activity by early June.



We Oversee the Capital Program

4

Rigorous program oversight is crucial to advancing the Board-approved capital program, within budget and on the time frames committed. C&D Development aggregates project-performance metrics to better understand our progress on the capital program as a whole, identify trends and potential risks, and re-balance the program as needed.

C&D also works with the industry to expand the pool of contractors, increase competition and drive down cost.



We rebalance the capital program to maximize the value of the investments

MTA's capital infrastructure needs evolve over the five years of a Capital Plan. External circumstances may also change. C&D Development continually optimizes the timing of projects within the capital program to reflect new opportunities and shifting constraints, whether they are internal or external.

This entails maintaining an overall view on progress against the capital program, strategically reassessing programmatic priorities, leveraging synergies between projects through bundling, maximizing the use of track outages and field support, and grounding future commitments in a sound budgetary framework.

One of the major outcomes of this work is a project commitment schedule, published twice a year, indicating the projects that we anticipate to award in the upcoming 12 months. C&D Development then tracks our progress against this schedule.

Another major outcome is more frequent amendments to the capital plan, documenting both the overall progress on the plan, and proposed changes to the plan moving forward. Proposed changes could include updates about projects as they are bundled and awarded, as well as more detailed information about asset needs as they materialize over the course of the five-year period.



We foster the growth of the contractor market

A bigger, healthier contractor market leads to competition and, ultimately, better prices for the MTA. C&D leverages the scale of our investment to attract vendors from around the country and the world.

We collaborate with our contractors to understand their priorities—where practical, we change our practices to make it more attractive for them to work with us. In the long run, deeper industry partnerships increase innovation and drive down costs.



We monitor progress on the capital program consistently and transparently

C&D Development aggregates project-performance data across categories of projects for a better understanding of how effectively we are delivering on the capital program as a whole. Key metrics around financial commitments, estimates at completion, key project-management costs, force-account activities, contingencies, schedule milestones, scope control, safety, change orders, and other metrics are measured against baseline to make sure we're on track to deliver the capital program better, faster, cheaper.

Metrics around contract award dates, delivery status, beneficial service dates, and hand-over dates are also collected and shared with client agencies to give them a line of sight on the projects C&D is building on their behalf.



We Leverage MTA Capital Assets

5

C&D oversees the strategic use of MTA's capital assets to generate revenue for the agency and provide better amenities for our customers, such as coffee shops, restaurants, retail, digital screens, new station entrances, new elevators, and better cell phone service. C&D also partners with the public and private sectors to promote smart growth and maximize the value of the area directly around our properties. Lastly, C&D handles the real-estate needs of MTA employees and on-site contractors, and administers the acquisition and disposition of real property for capital projects.



We use private investment to improve the customer experience and drive revenue

C&D leases out space in subway and commuter rail stations—including Grand Central—to coffee shops, restaurants and commuter-oriented retail. These businesses generate revenue to the MTA and provide valuable amenities for our customers.

C&D also engages the private sector to provide new digital services to our customers, including digital screens, in stations, on trains and buses, as well as broadband infrastructure in tunnels. Data connectivity in tunnels is both an important customer amenity and a significant benefit to operations, including modern train signals. Whenever possible, C&D coordinates implementation of new digital infrastructure with other capital-construction projects, reducing costs and impacts on customers.



We advance smart growth and Transit-Oriented Development in the New York region

Transit-accessible land is a valuable resource. C&D promotes the highest and best use for that land by facilitating the creation of new mixed-use neighborhoods around MTA train stations. We actively support locally led efforts to build Transit-Oriented Development, providing financial and expert resources whenever possible. When the MTA owns transit-accessible land, we maximize its use and value either by engaging in joint development projects with private builders, or by disposing of the property for smart redevelopment.



We promote better integration between land-use and transit investment in cities

C&D Planning's Transit-Oriented Development group supports city-wide and district-wide planning initiatives that link the need for new development with the need for transit infrastructure. We work with New York and other cities in the region to ensure that zoning regulations promote density where transit access is strongest, and incentivize further investment in transit where it is needed.

On a more targeted scale, Transit-Oriented Development assists developers in designing new transit accessibility features such as elevators or ramps, new or widened stairs and escalators, where these improvements are required or encouraged by zoning. C&D Delivery's External Partner Program collaborates with developers to facilitate such construction.



We support the MTA in meeting the agency's real estate needs

When C&D or operating agency projects require strategic land acquisitions, C&D's Real Estate Transactions division identifies, negotiates and purchases the parcels. We do it early in the project planning process to prevent project delays down the line, which is especially important in Design-Build projects.

The division also manages the MTA's office portfolio, including 2 Broadway, Jamaica Control Center, and our offices in the Graybar Building.

C&D's Live Media Program, a public-private partnership between the MTA and Outfront Media, aims to install more than 53,000 digital screens in hundreds of stations and thousands of rail cars across the MTA system. Not only do the screens generate advertising revenue for the agency, they also provide important service information to our customers. C&D partners with the operating agencies' customers communications centers to display real-time, location-specific service information on the screens in stations.



Case study: East Midtown Rezoning

The rezoning of East Midtown, a five-year process that the MTA actively supported, will generate millions of square feet of new office space in a district with unparalleled access to subway and commuter rail service. It will also require builders who wish to utilize these additional development rights to contribute to improving the district's transit infrastructure. C&D Planning promotes this type of coordination between land-use and transit investments to benefit the MTA and all New Yorkers.



We Are Creating C&D Together

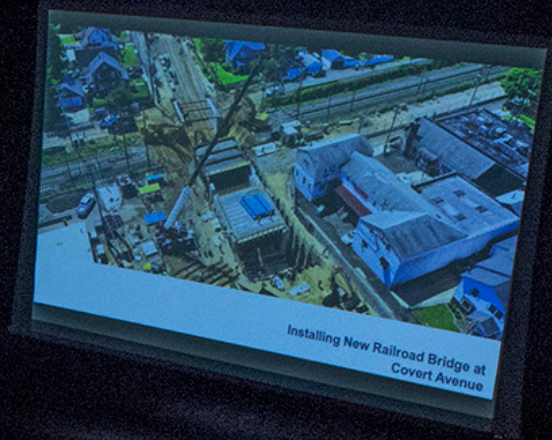
MTA employees' knowledge, resourcefulness and dedication are second to none.

Let's draw on those assets in multi-disciplinary teams as we reinvent how capital projects are planned, developed and built at the MTA. Because although the vision is clear, we need your expertise and creativity on the path to implementation.

There's always more to learn – both as an agency and as individual team members. C&D fosters a culture of continuous improvement and collaborative problem-solving, where we learn from, and build on, past project experience.

We are counting on you to take initiative, find solutions and help achieve our mission of building faster, better, cheaper.

Welcome!



Construction & Development