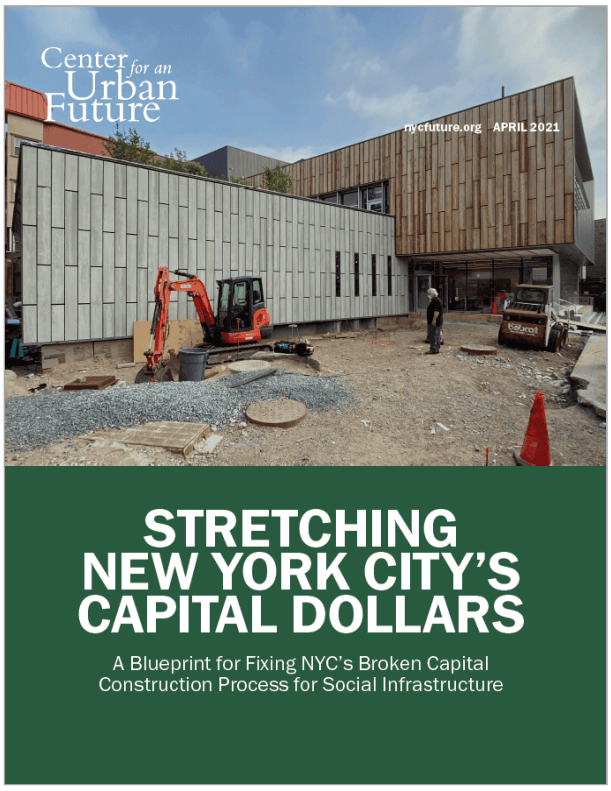


Report - April 2021

Stretching New York City's Capital Dollars

Investing in libraries, parks, and other social infrastructure will be essential to the city's recovery, but inefficiencies that plague the capital construction process have led to unacceptable cost inflation. This report details how reforming this process could help the city potentially save hundreds of millions of dollars while enabling continued support for vital social infrastructure.

by John Surico

- The following is the introduction to *Stretching New York City's Capital Dollars*
- Read the full report (PDF)
- View the recommendations from the report

Faced with an era-defining fiscal crisis, New York City's next mayor will almost certainly need to identify new options for raising revenues and reducing costs. One of the most promising opportunities to do just that lies in fixing the city's highly inefficient capital construction process for libraries, parks, cultural organizations, public plazas, and other critical social infrastructure.

Investing in this social infrastructure will be essential to the city's recovery from the COVID crisis. But the inefficiencies that plague the current process have driven up costs to levels that border on absurd. A ground-up library project can easily take more than seven years to complete and cost more than $1,500 per square foot to construct, roughly triple the cost and time required to build a Class A office building.[1] A park bathroom facility currently under construction will cost the city nearly $4 million.[2] A heating and cooling system replacement in a branch library racked up a bill of more than $3 million.[3]

These are cost inflations New York can no longer afford.

The good news is that they also are not inevitable. They go well beyond the usual New York premium on construction and can be attributed to a deeply flawed and unnecessarily bureaucratic city process for managing projects.

Reforming this process could save the city at least $800 million over five years, according to our analysis of estimated cost overruns tied to major problem areas plaguing the capital construction process for public buildings. That's nearly enough money to clear the entire backlog of state-of-good-repair needs across the city's three library systems, or pay for 150 full-time parks maintenance workers for the next decade, or fund more than 1,300 miles of protected bike lanes.

The City's Department of Design and Construction (DDC) has shown that progress is possible. The suite of capital reforms it launched in January 2019 has already begun to shave time off the process and lower costs. But deeper improvements are needed. To achieve them, DDC will need to continue and expand on its initial reforms. But the agency will also need far more help than it has received to date from other parts of city government that contribute mightily to the inefficiencies in the capital process, including the Office of Management and Budget (OMB).

This help is unlikely to happen without a strong push from the highest levels of City Hall. Indeed, more than any other single policy change, this report urges the next mayor to go all-in on reforms to the capital process by creating a new Deputy Mayor for Infrastructure. This official would be empowered to direct and oversee a reform process involving every agency involved in the capital project process—and possess the political muscle to hold every party accountable. Other actions are needed, too, including a reform to the state's procurement law that mandates the selection of the lowest bidder on capital projects, which too often ends up costing the city more money despite good intentions.

Together, these changes will help the city find significant cost savings during a period of deepening fiscal uncertainty while enabling continued investment in vital social infrastructure.

Key Findings

- Reforms to New York's capital process could save the city **at least $800 million over five years**, according to our analysis of estimated cost overruns tied to major problem areas plaguing the capital project design and construction process for public buildings.
- That $800 million in savings could be used to **clear nearly the entire backlog of maintenance needs across the city's three library systems** or **pay for 150 full-time parks maintenance workers for the next decade**, or **fund more than 1,300 miles of protected bike lanes**.
- Library branches recently completed or in the process of construction show the need for reforms. The new Greenpoint branch cost over **$1,500 per square foot**. The Hunters Point library was nearly **$1,900 per square foot**. The new Rego Park branch is budgeted at over **$2,100 per square foot**. The new Far Rockaway branch will cost at least **$1,800 per square foot**.
- The report's analysis of reforms enacted by DDC beginning in January 2019 finds notable improvements in **front-end planning**, **project management**, **payment**, **avoiding change orders**, and **pre-qualifying contractors**. As a result, the average project duration decreased from 96 months to 90 months as of June 2020—a promising achievement in a year and a half.
- However, five ongoing challenges continue to hold up the capital construction process: **an underwhelming pool of contractors resulting from the low-bid requirement; delays across multiple government agencies with a role in the process; time-consuming approvals for change orders; lackluster project management;** and **constraints on the ability of sponsor agencies to manage their own projects**.
- While projects vary, the state- requirement to award contracts to the lowest bidder can delay the average project by **at least six to nine months** and adds at least **20 percent** to the original bill due to poor performance and delays, or at least **$1 million** on a typical project. With approximately 100 DDC-managed public buildings projects in construction each year, including approximately 35 library projects, we estimate that the low-bid requirement annually costs the city **at least $100 million**

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- Delays created by the change order process, on average, can add **at least $600,000** to each project annually—on top of the cost of additional work. With approximately 100 DDC-managed public buildings projects in construction each year, we estimate that change-order-related delays cost the city more than **$60 million** each year.
- While some improvements to project delivery have been made, capital project staff at sponsor agencies say that too few DDC project managers are **acting as the client's best advocate** and could do more to anticipate roadblocks, navigate approvals, and speed up the process. At the same time, sponsor agencies can help improve project delivery by limiting scope changes after a project is initiated.
- But other agencies have to act, too. Multiple capital eligibility reviews by the Office of Management and Budget—conducted for every budget modification—cumulatively add between **four and six months** to the average project timeline, while the requirements for registering contracts with the Comptroller's Office has **delayed projects hundreds of times**, as initial applications are denied and returned with additional questions.
- When allowed to self-manage projects via pass-through funding, sponsor agencies like libraries can complete projects in just **20 percent of the time** of DDC-managed projects, and at **one-third of the cost**.

New York can no longer afford to squander its limited capital funds. The city's infrastructure needs are simply too great and capital funding too limited.

The city's public library system alone faces nearly $1 billion in state-of-good-repair needs, not surprising given that the average branch library is over 60 years old. The same dynamic is at play across the city's built environment, where public parks are straining to accommodate a surge in use amid the pandemic, the city's bike infrastructure needs a major expansion, and a range of public buildings—including cultural institutions and schools—require upgrades to ventilation systems. At the same time, New York faces an urgent need to protect coastal communities from storms and sea-level rise, upgrade its broadband infrastructure, and address deteriorating conditions in NYCHA buildings across the city.

Investing in these and other infrastructure projects could give New York a crucial boost during this COVID-19 crisis, strengthening the communities hit hardest by the pandemic, creating jobs for New Yorkers who are out of work, and laying the groundwork for an inclusive recovery. But right now, the city's broken capital construction process is standing in the way.

As we documented in the Center for an Urban Future's 2017 *Slow Build* report, building a new library or cultural project in the five boroughs takes seven years to complete and costs a staggering $930 per square foot—roughly twice the cost of a Class A office tower.[4] (Newer data suggest that the average cost per square foot to build a new library has risen to well over $1,500 per square foot.) The result is that the city's limited infrastructure funds don't stretch very far, leaving many needed projects on the drawing board and causing unacceptable trade-offs between maintaining current infrastructure and building innovative new structures to meet growing demand.

Reforms Are Taking Hold, But Need to Go Much Further

The good news is that progress is finally underway. In January 2019, the city's capital project management agency, the Department of Design and Construction, announced a major overhaul of its processes. The agency's *Strategic Blueprint for Construction Excellence* mapped out plans to expand front-end planning to reduce delays before construction even starts; modernize the procurement process; implement more effective project management within DDC; and improve coordination among sponsor agencies, oversight agencies, and vendors across hundreds of different projects.

This report provides the first assessment of DDC's reform efforts. Supported by the Charles H. Revson Foundation, the study is informed by more than 30 interviews with designers, contractors, engineers, and agency officials with years of experience working on city-managed capital projects.

Early signs suggest that DDC's reforms are beginning to work. Since the agency's blueprint was launched, DDC reports that

process improvements have reduced the average timeline of a capital project from 96 months to 90 months, a promising achievement in just over a year. The interviews conducted for this report confirm that DDC's reforms are taking hold, resulting in more thorough front-end planning, more responsive project managers, better avoidance of lengthy change order delays, faster payments, and better-qualified contractors.

But while things are heading in the right direction, the city has a long way to go. A capital process where the average project still takes 90 months remains badly broken.
DDC hopes to shave off an additional 30 months in the coming years as additional measures are put in place. But this can only be achieved alongside major new reforms across other agencies and throughout city and state government.

Five Keys to Fixing NYC's Broken Capital System
Our research identifies five key problem areas that must be addressed if the city is to make further progress controlling capital construction costs at this pivotal moment. These choke points are analyzed in more detail on page 11 of the report.

1. DDC is not yet getting the help it needs from OMB and other city agencies that play a significant role in the delays that plague the capital process.

Although DDC has made progress on several crucial reforms, other city agencies and government partners with an oversight role in the capital process—from the Office of Management and Budget and the New York City Comptroller to the Procurement Policy Board and the Department of Buildings—have yet to implement similar agency-wide reform plans. For example, capital eligibility reviews conducted by OMB each time a budget modification is requested can delay library projects up to four to six months, while contract registration with the Comptroller's Office routinely results in delays when applications are kicked back with additional questions—on hundreds of occasions over the past several years, restarting the clock on the mandatory 30-day review.

2. The low-bid requirement produces an underwhelming pool of contractors, leading to subpar performance and routine delays.

The state-mandated "low-bid" requirement creates a marketplace where vendors are either unqualified or underestimating costs, effectively discouraging the city's top talent from bidding on public projects. This often results in subpar performance—costing the city time and money. While the details of specific projects vary widely, this brief found that the low-bid requirement delays an average project by at least six to nine months and adds approximately 20 percent to the original budget. This would mean extra costs of $8 million for a $40 million library development or $1 million for a more modest $5 million repair project. With approximately 100 DDC-managed public buildings projects in construction each year, we estimate that the low-bid requirement and design-bid-build sequence annually costs the city at least $100 million.

3. The approval process for change orders still takes too long.

Change orders are an inevitable part of all construction. But the city's approvals process for a single change order can take far longer than similar projects elsewhere, and these delays have a cascading effect on project timelines that drives up costs. Each month that a change order delays a project can add up to $200,000 to the price tag for new builds and potentially even more for ongoing renovations. A typical change order approval takes three to six months to negotiate, according to capital project managers and other parties involved. In total, we find that change order approvals, on average, can add at least $600,000 to city projects. With approximately 100 DDC-managed public buildings projects in construction each year, change-order delays to these projects could cost the city up to $60 million annually.

4. Projects still suffer from inadequate project management.

While DDC's Strategic Blueprint is showing important early results, the agency has more work to do. In particular, the architects, contractors, and sponsor agency staffers we interviewed told us that DDC needs to improve its project

management. DDC project managers help guide a project through the city's convoluted capital construction process while keeping all stakeholders aligned. But although some project managers proactively head off issues before they grow, too many others lack the drive—or incentive—to fight hard for faster timelines and lower costs.

5. Libraries and cultural institutions lack the authority or capacity to self-manage more projects

When self-managing capital projects via pass-through grants, sponsor agencies like libraries can complete projects in 20 percent of the time and at one-third the cost of comparable DDC-managed projects. This suggests that the city should allow many more pass-throughs. But to do so, libraries will need more financial support to build in-house capital project capacity—and sponsor agencies will have to commit to project scopes and budgets at inception, resisting the urge to expand the scope as new funding becomes available.

A Glimmer of What's Possible: DDC's Performance During COVID

For those who know the process inside and out, the greatest challenge lies in the interagency web of duplicative reviews and adversarial bureaucratic oversight—inefficiencies that ensnare far more agencies than just DDC and will require top-level leadership to untangle.

Difficult as this challenge may be, a more efficient and effective process is possible—and in fact, it's already happening. DDC leveraged emergency powers granted in response to the pandemic to overcome the usual restrictions and procedural hurdles and execute projects at warp speed. For example, a new outpatient healthcare facility in the Bronx was completed in just six months, while DDC was also building 15 new testing centers and two temporary field hospitals—a pace that would be unthinkable under the current process. But even in normal times, the typical project managed by the School Construction Authority spends just 41 months in the design and construction phases—less than half the 84 months facing the average DDC-managed project.[5]

"We're at a very critical point. We have this infrastructure nightmare that exists, and we've demonstrated that we could vastly improve our commitment rate and get this done," says Kristie Maduro, vice president of real estate and capital finance at Brooklyn Public Library (BPL). "All of this coincides with a time that we can have an impact. So, it's time to pay attention. But when you look at all these other parts of the process, it all comes to one point: we need to change the system."

New York City is at a crossroads, threatened by record unemployment and massive revenue losses even as infrastructure needs continue to grow. At this moment of crisis, the city needs to maximize the impact of every dollar invested into vital social infrastructure—and seize the opportunity to transform a dysfunctional capital construction process. DDC's nascent reforms show that change is possible. But the next mayor and the City Council will need to build on this progress and go a lot further.

Notes

1. Center for an Urban Future analysis of data from the New York Building Congress' 2020 "Construction Costs" report. Available at: https://www.buildingcongress.com/advocacy-and-reports/reports-and-analysis/construction-outlook-update/Construction-Costs.html [Accessed 17 Sep. 2020]. Estimated cost of new construction derived from public reports on the total budget for the recently completed Greenpoint branch library, which cost approximately $1,533 per square foot to build. Other new ground-up buildings, such as the Rego Park branch library, are projected to cost even more.

2. Data from the NYC Department of Parks and Recreation Capital Project Tracker. The total cost of constructing a new comfort station with facilities for use during Little League at Marcus Garvey Park in Harlem is $3,871,000.

3. Center for an Urban Future analysis of data on DDC-managed projects.

4. Center for an Urban Future and Citizens Budget Commission, *Slow Build*, 2017, by Eli Dvorkin, Maria Doulis, and Jonathan Bowles. Data is for median new library and cultural project, based on our analysis of 144 capital projects for libraries and cultural organizations that were managed by the city's Department of Design and Construction (DDC) and completed between fiscal years 2010 and 2014.

5. Citizens Budget Commission (2019). *Cut Costs, Not Ribbons* | CBCNY. [online] cbcny.org. Available at: https://cbcny.org/research/cut-costs-not-ribbons [Accessed 22 Oct. 2020].

- The following are recommendations from *Stretching New York City's Capital Dollars*
- Read the full report (PDF)

For the Next Mayor:

Make fixing the broken capital process a mayoral priority and a centerpiece of efforts to make city government more efficient in responding to crisis.

New York City's next mayor should seize the massive opportunity to fix the city's deeply flawed capital process, unleashing millions of dollars that currently go to waste to rebuild vital social infrastructure. Launching a full-scale reform effort is an immediate step the city can take to make government smarter and more cost-effective during this fiscal crisis—and ensure that limited city capital dollars stretch as far as possible. As the fallout from the pandemic strains vital social infrastructure including libraries, parks, and cultural institutions, cultivating an equitable recovery will require a new level of investment in these assets—even amid severe fiscal constraints. But this can only be accomplished by ensuring that limited capital dollars can stretch further and make a greater impact. As this report shows, simply leaving the responsibility to reform the capital process to DDC is not enough. Too many other parts of government need to initiate and follow through with bold reforms as well, and that's unlikely to happen without a significant and sustained push from the mayor. The next mayor should also send a clear signal to the next DDC commissioner that the agency's nascent capital reforms should continue and expand.

Create a new Deputy Mayor for Infrastructure and charge them with executing a reform process involving every agency in the capital project process.

DDC deserves significant credit for reexamining its processes and enacting reforms to the city's capital process. But the agency cannot go it alone: every single agency with a hand in the process—from OMB and the Comptroller's Office, to the libraries and mayoral agencies, to the Procurement Policy Board, Fire Department, Department of Buildings, and Public Design Commission—should produce similar blueprints of action that identify sources of delay and redundancy and implement concrete steps to address them. To ensure that this interagency effort is successful, Mayor de Blasio or his successor should create a new Deputy Mayor of Infrastructure position in City Hall and charge them with developing and executing a full-scale reform effort across government. Using DDC's strategic blueprint as an example, a larger citywide master plan should be formed, comprised of agency-specific reform plans and a wider effort to coordinate legislation at the city and state level that will support the goal of vastly improved project delivery.

For State Legislators:

Pass legislation to expand procurement options and reform the low-bid requirement.

No policy change will likely do more to reduce project delays and costs on city capital projects than reforming the state law mandating that publicly funded capital projects select the lowest bidder through a design-bid-build process. As this report

concludes, these rigid requirements cost the city at least $100 million a year. Mayor de Blasio—and his successor—should make reforming the antiquated provisions of General Municipal Law 103 a key state legislative priority. State legislators and the governor should support efforts to revamp the law through legislation that allows a wide range of industry best practice procurement models, including construction-manager build and CM at-risk models; authorizing a full range of design-build practices; and allowing best-value contracting. Though perhaps counterintuitive, experts say the city can save millions of dollars that are wasted when work by subpar contractors has to be redone or bid out again, causing significant delays and major overruns.

For City Agencies & Sponsors:

Expand agency efforts to reform the overly bureaucratic change order approval process.

Of all things that can be addressed solely by city government, reforming the change order approval process would have the greatest impact. This will require a continued push from DDC, and a new level of commitment from OMB, to embrace reforms to change order approvals. The two agencies must build upon the significant progress made in coordinating their efforts by codifying interagency coordination into practice, so no change order delays a project indefinitely. This means expanding the highly promising Expanded Work Allowance pilot—overseen by DDC, OMB, and the Comptroller's Office—to all DDC-managed projects and to projects managed by other capital agencies, such as the Department of Parks and Recreation, as well as growing the "expense pot" allocated to cover costs ruled capitally ineligible to avoid costly delays.

Create a dedicated interagency inspection team to streamline inspections performed by multiple oversight agencies.

In addition to the major role played by DDC, OMB, the Comptroller's Office, and the mayoral offices, several other agencies contribute to lengthy delays through staggered, uncoordinated inspections and approvals. Mayor de Blasio—or his successor—should create a single, dedicated interagency inspection team to streamline these approvals, including the Fire Department, Department of Buildings, and other agencies where mandated.

Train and empower project managers to be much more proactive with sponsor agencies and contractors.

DDC should make significantly more progress in improving the performance of its project managers, who are critical to delivering projects on time and within budget. This report finds that too many of its project managers fall short when it comes to enforcing deadlines, navigating the approvals gauntlet, dealing with subpar vendors, and anticipating problems at other agencies before they occur. While the agency has already taken steps to train and coach its project management teams, more can be done.

DDC should ensure that candid feedback from sponsor agencies and vendors is considered through post-project assessments with architects, designers, contractors, and clients; in recent years, less than half of eligible projects completed post-construction surveys, which could help guarantee collaborative accountability. Post-construction satisfaction has also wavered around 50 percent or lower in that same timeframe. Furthermore, the agency should see that project managers receive consistent professional development on modern software tools and innovative management techniques; and that senior leaders are creating a culture in which project managers are expected to serve as the sponsor agency's fiercest advocate.

Give libraries authority to self-manage a greater share of capital projects—and support them through a toolbox of build options.

When given the chance, sponsor agencies like libraries and cultural institutions can complete capital projects at a fraction of the time and cost of comparable DDC-managed projects. This results from sponsor agencies having a tighter grip over procurement and construction, with greater authority to push the process forward—or change vendors if results are lacking. However, sponsor agencies are currently allowed to self-manage only a small number of projects and lack the staffing and

capacity to do more. Elected officials, including the next mayor, the five borough presidents, and members of the City Council can reap the rewards of more efficient capital projects by supporting increased expense funding for sponsor agencies. This funding can be used to plan and commence new projects outside of the city's capital program, which will require additional staff, and to maintain enough cash on hand to keep projects on track when new costs arise, like building conditions that necessitate change orders or costs that stem from process-related delays.

With design-build authority extended to more DDC-managed projects as of January 2020, an equal effort should be made to provide sponsor agencies with a toolbox of alternative delivery options, like design- and construction-manager-build, for their own projects. Doing so would require state legislation to clarify these rules and expand use of these tools, as well as new guidance from OMB and the Comptroller's Office.

Encourage sponsor agencies to commit to a project scope and budget at the outset of a capital project—and allocate sufficient expense and capital funding to ensure that long-term capital planning is possible.

New public buildings and major renovations are often funded piecemeal, with total project budgets cobbled together from a mix of mayoral, City Council, and private sources—often over the course of several years. At the same time, sponsor agencies have too often changed course during the design phase of a major project, broadening the scope and adding new elements long after a project is first initiated. These factors combine to extend project timelines and drive up costs, complicating the efforts of DDC and other agencies to improve project delivery.

As part of a citywide reform effort, sponsor agencies should commit to a project scope at the beginning of a major capital project and resist amending the scope whenever new funding is made available. City leaders can help ensure that this happens by including libraries and cultural institutions in a comprehensive capital budget that meets the real infrastructure needs of these institutions over the next ten years—including nearly $1 billion in documented, unmet needs at the libraries alone. In addition, the mayor and City Council should increase expense funding for libraries to build in-house capacity to self-manage capital projects. Expense dollars invested in this way will generate a significant return for New Yorkers, as capital costs are up to two-thirds lower when libraries have the ability to manage their own projects—meaning more projects can be completed with the same capital funding.

Stretching New York City's Capital Dollars is a publication of the Center for an Urban Future. Researched and written by John Surico and edited by Eli Dvorkin, Laird Gallagher, and Jonathan Bowles. Additional research by Naomi Weinblatt and Charles Shaviro.

Center for an Urban Future (CUF) is a leading New York City-based think tank that generates smart and sustainable public policies to reduce inequality, increase economic mobility, and grow the economy.

Cover image of Greenpoint Library courtesy of **Marble Fairbanks**.

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