

REPORT BY THE CONSTRUCTION LAW COMMITTEE

IMPROVING NEW YORK CITY'S DESIGN AND CONSTRUCTION PROCESSES AND PRACTICES

I. INTRODUCTION

Construction, infrastructure and the built environment are back in the public spotlight once again. The American Society of Civil Engineers has recently released its 2017 Infrastructure Report Card, assigning an overall grade of D+ to the state of good repair of American infrastructure and a C- to the state of good repair of New York State's infrastructure.¹ The Trump administration has also made infrastructure expansion and state of good repair a national priority.

The Construction Law Committee of the New York City Bar Association (the Committee) has, since 2008, been actively analyzing how New York State's laws pose impediments to all New York state and local government owners in their efforts to make their systems operate in a state of good repair and expand to meet stakeholder needs in the most efficient manner possible.² The Committee has specifically focused on State laws affecting design and construction practice and delivery.

With this report, the Committee shifts its attention from New York State (State) laws to New York City (City) laws that provide opportunities for the City to improve its design and construction processes and practices.

By focusing exclusively on areas where the City is not constrained by State laws, the Committee has identified opportunities for changes in local laws, policies and practices within the City's administrative control that, in the Committee's opinion, would increase process efficiency and permit City agencies to avoid unnecessary costs caused by the status quo. By reforming current City processes, practices and policies that govern planning and construction of public projects, the City would be able to avoid the unnecessary costs they generate, which avoided costs could serve as funds available to increase the total number of projects, including state of good repair projects. Additionally, these savings to project costs would permit reductions in the level of public subsidies needed to promote the same level of private construction of projects promoting social goals, such as affordable housing.

In the following report, the Committee starts with some examples of previous City and State initiatives that reflect the potential of ways the City can improve its design and construction

practices and policies without having to change State law in Albany.³ The Committee's suggested opportunities for reform are then divided according to the distinct roles the City plays in the built environment as "Owner," "Regulator" and "Economic Development Catalyst"—all of which roles are summarized in the attached Appendix A.

In the "Owner" category, the Committee identifies opportunities to modernize the capital planning process and the "Asset Information Management System" to better support efforts to keep the City's assets in a "state of good repair;" to digitize construction-related data it currently collects under law and the construction contract to permit the application of "big data analytics" techniques to inform future practice; and recommends further modernizing of the City's Vendor Information Exchange System ("VENDEX") to further increase process efficiencies.

Where the City acts as "Regulator," the Committee recommends methods for reforming the City's environmental review process. For the City's role as an "Economic Development Catalyst," the Committee recommends several improvements to the Minority and Women Business Enterprise (MWBE) certification process, and makes other suggestions designed to alleviate the financial burdens of small construction businesses.

Since this is the Committee's first comprehensive report focusing on the City's laws, the Committee views this effort as the beginning of a focused conversation about future changes based on our work. The Committee has reviewed the work of other analysts and observers who have also focused on this area.⁴ As always, the Committee stands ready to assist the City in any efforts to move forward based on recommendations in this report.

II. PREVIOUS SUCCESSFUL INITIATIVES

a. Earlier City Policy and Practice Innovations

The following summary of prior City law and practice reforms demonstrates the City's potential to improve its capital planning and construction processes independent of any changes in State law. Since these summaries are intended only as a contextual preface to the ideas for local level change in the body of this report, analysis or evaluation of these initiatives is beyond the scope of the report. These prior reforms may, however, provide a foundation for future recommendations by the Committee at the local law level.

i. 2008 Strategic Initiatives

In 2008, the City announced a suite of related strategic initiatives that were intended to increase the number of bidders on City construction projects.⁵ During the construction boom that ended with the 2008 financial crisis, both public and private projects competed in the local construction market, not only driving up costs but also driving construction firms toward private projects due to the perception that public sector owners were difficult clients. The Bloomberg Administration began, in 2006, to study and address the drivers of cost increases resulting in several strategic initiatives:

- *Delay Damages.* In 2013, the City removed its no-damages-for-delay clause in its standard construction contract. Following a pilot program testing the effects of the clause's removal, the City concluded that provisions that do not allow compensation to contractors for construction delays due to the City's actions increase the initial bid prices to cover this risk and also blunt incentives to prevent delays. Additionally, the City found that when the clause was omitted and contractors were permitted to seek damages for delays, projects were completed earlier than anticipated, and, further, contractor claims for City-caused delays did not outweigh other costs and time savings.⁶
- *Early Project Scoping.* Another initiative created a fund to support professional preliminary project scoping and cost estimating for projects during the capital planning phase, before budget adoption. State finance laws prohibit applying capital funds to projects during the planning phase before budget adoption. This central fund created in 2008 provides expense budget resources to agencies to apply scope development and cost estimating exercises, with the assistance of outside consultants, to projects with unclear scopes, new or unusual technical challenges, or complex regulatory issues. These analyses enable the City to identify realistic costs and options to reduce these costs *before* budget adoption in order to reduce the magnitude of schedule delays and change orders during actual construction.
- *Changes to the City's Performance Bond Requirements.* Also as part of the 2008 initiatives, the City announced a task force to evaluate the City's bonding requirements. Earlier investigations had suggested that existing bonding requirements inhibited the ability of contractors, especially small construction firms and Minority and Women's Business Enterprise (MWBE) firms, to bid on City construction projects. In addition, elements of the City's performance bond form did not comply with the requirements of the federal Small Business Administration's Surety Bond Guarantee Program that assists small construction businesses in obtaining bonding required by municipal contracts. After the task force conducted a series of risk analyses, the City, in 2009, announced a reform of its bonding policy on projects valued up to \$5 million that permits small construction businesses to participate in the Surety Bond Guarantee Program. The revised bond form and ability to participate in the federal program eliminated one impediment to small firms bidding as prime contractors or subcontractors on City projects.⁷

ii. Other City Initiatives

- *Design + Construction Excellence.* At the end of 2003, City agencies involved in the City's capital program embarked on a cooperative working group venture to prioritize excellence in construction design. Leveraging major features of the federal General Services Administration's methodology to address impediments to design and construction excellence, the working group identified impediments in City processes and developed solutions.

As one example, the working group found that one impediment to design excellence resulted from absence in the City's Procurement Policy Board (PPB) rules of express authorization for the agencies to make evaluations based on subjective design criteria. Because the City Charter permits an evaluation of proposals not based primarily on price, the working group was able to make necessary changes to the PPB rules to expressly authorize quality-based selection models. As another example, the working group took notice of the professional peer review process at the New York Department of Design and Construction (DDC) and expanded it to all agencies.

With respect to construction excellence, the working group focused on aspects of the City's capital budget process and standard legal arrangements for City capital projects.⁸ Although the City operates under State law-imposed financing and procurement restraints, the working group was able to identify initiatives permissible under the law to improve the construction process. DDC then piloted, over a ten-year period, several design and construction excellence innovations within the design-bid-build environment in order to approximate the benefits of integrated project delivery, including co-location of designer/contractor/owner team during the design phase; use of pre-construction design-assist (with pre-qualification); and lean construction techniques including the "last planner" scheduling technique. DDC also developed indicators beyond the City's standard capital commitment plan, schedule and budget indicators to capture the impact of excellence in design initiatives on project users. Finally, DDC released its *BIM Guidelines* in 2012, in order to utilize "building information modeling" to deliver high-quality public building projects within budget and schedule parameters.

- *NYC Capital Projects Dashboard.* In 2013, the City posted its NYC Capital Projects Dashboard at <http://www.nyc.gov/html/ops/capital/html/home/home.shtml>, which provides the public with a snapshot view of the City's public building, infrastructure and information technology (IT) projects with budgets of \$25 million or more. This centralized reporting of capital projects permits comparison of projects across agencies, using standardized metrics, and facilitates project management transparency and accountability. While it tracks project information over time to inform citywide policy on the budgeting and management of capital projects, it also permits data analyses of a large database to inform policy as well.⁹

b. Concurrent 2008 State Process Reform

In early 2008, the State reformed its mandatory prime contracting requirement, known as the Wicks Law, which requires separately-bid contracts for construction, HVAC, electrical and plumbing for New York public works projects that exceed a certain cost threshold. The State raised the threshold from \$50,000, the trigger amount set in 1961, to \$3,000,000, and also authorized public owners to avoid the multiple prime contract requirement altogether if they enter into a project labor agreement¹⁰ (PLA) for an individual project or project type.¹¹ The State also added a general authorization for public owners to pre-qualify bidders for particular public works in order to focus on those contracting firms with the experience, skills and compliance track records that would ensure such typically complex projects come in on-time and

on-budget. The bid packages for those particular capital projects would be made available only to the firms on the pre-qualified lists, instead of being available to all construction firms as is generally the case. Since 2008, city construction agencies have taken advantage of the PLA option to avoid Wicks Law requirements on certain projects or project types and the ability to create pre-qualified bidder lists to increase capital project efficiency during the procurement process.¹²

III. CURRENT OPPORTUNITIES AVAILABLE TO THE CITY

a. Opportunities Available to the City as Owner

i. Modernize the Capital Planning and the Asset Information Management System

New York City Charter, § 1110-a requires the City to assess its assets on an annual basis. Sections 228 and 248 require the City to develop a ten-year capital strategy every two years. These local process mandates stem from the City's "state of good repair" (SOGR) efforts begun in the early 1980s, with Comptroller Jay Goldin's evaluation of the state of assets within the City and Mayor Ed Koch's long-term capital planning exercises for City agencies. These requirements were codified as part of the 1988 and 1989 charter revision processes. Section 1110-a eventually led to the creation and implementation of the City's Asset Information Management System (AIMS).¹³

Subsequently, there have been attempts to assess the City's approach to SOGR. Unfortunately, some of these attempts focus on all infrastructure located within the City's jurisdictional boundaries, a significant portion of which are not City assets, such as the transit system (which is an asset of the Metropolitan Transportation Authority but to which the City makes capital contributions to support).¹⁴ By not aligning the assets with the owners, these reports may overstate the cost of SOGR and their recommendations are not targeted to each particular owner's powers and functions.

An additional problem lies within Charter § 1110-a, inasmuch as it limits the AIMS process to a subset of the City's total assets, and its reports represent a limited "snap-shot" focus on some aspects of the City's inventory of capital assets. The requisite evaluation is of City-owned¹⁵ assets or asset systems with a replacement cost of \$10 million or more and a useful life of more than 10 years. Yet, there is no requirement that the assessment include capital features that would relate directly to the structural integrity of the asset, such as equipment and special operating systems and programmatic needs and/or efficiency improvements not directly related to structural integrity. Moreover, Charter § 1110-a does not "reflect any policy considerations [that] could affect the appropriate amount of investment, such as whether there is a continuing need for a particular facility or whether there have been changes to the use of a facility."¹⁶

While there is a structural disconnect between the annual AIMS reporting document and the 10-year capital strategy, any four-year capital plan and related commitment plan, the City does prepare a reconciliation report to compare recommended SOGR capital investment in the AIMS reports with capital spending allocated in any four-year capital plans. The most recent

reconciliation report estimated that “62 percent of the expense maintenance levels recommended [in the AIMS reports] were included in the financial plan.”¹⁷

Several years ago, the prior administration announced a plan to review the methodologies used in surveying and estimating the cost of maintaining its fixed assets in a state of good repair, to incorporate current technology and standards into the City’s ongoing AIMS-related reviews and to upgrade and expand AIMS to allow for more comprehensive inspections and reporting to improve the City’s management of its facilities.¹⁸ Specifically, the administration planned to develop a facility condition assessment program “in order to improve the City’s ability to prevent the escalation of capital project costs which are a result of deferred capital investment or maintenance . . . and . . . improve the ability of agencies to define and prioritize state of good repair funding requirements.”¹⁹ The aim of this project was to “[reduce] the deferred maintenance backlog, and [maintain] life-cycle replacement requirements” in order to increase the ability of the City “to realize cost savings through the reduced downtime and costs associated with emergency repairs and breakdowns.”²⁰ Planned initially as a pilot with a small number of agencies to be expanded over time to all agencies, the intention of the initiative was to “evaluate the market of facility condition assessment systems providers, software, and inspectional services, and the potential integration of facility assessment systems resident at City agencies in order to develop an acquisition plan and management strategy for the City . . . with the development of standardized reports . . . that [would] allow for improved management of maintenance needs across the agency’s portfolio of assets.”²¹ This planned initiative was not completed.

The Committee recommends that the City revisit and continue this planned reform with an eye toward modernizing the AIMS program to function more effectively.

ii. Increase Construction-Related Data Analyses to Innovate Changes in Policies and Practices

Public construction project data are generated and retained at two levels--the citywide process level and the managing agency level. Some of this data are in digital format, which facilitates data analysis, while some remains entirely paper-based.

The city’s capital planning and budgeting, procurement and contract management processes generate a great deal of digitized data on all public projects, which could be aggregated and analyzed by the City and other construction industry participants to provide the necessary evidence to support future policy and practice changes. While the capital planning and budgeting process generates data at the citywide level, once the capital budget has been adopted, project-specific information is generated by and resides with the managing agency responsible for the project. Only some of that project-specific information with associated digitized data translates back to the citywide level (*e.g.*, procurement process milestones, change orders). Most of the project-specific project management data remains with the managing agency, some of which is recorded in an electronic format, some of which is not. While the City’s standard construction contract and applicable state and local laws require the production of data by contractors on each project, unless this data is required to be digitized, it is not available for analyses to permit the alignment of processes from project conception to completion with actual

data that can be extrapolated back into the process to inform future project scopes, schedules and costs.

The City has been increasingly making agency data available online in open-standards format as part of an effort to “make the operation of city government more transparent, effective and accountable to the public.”²² A review of currently available built-environment data on the open data portal reveals maps and location data of various built environment structures and the built-environment results of agencies’ regulatory activities and policy initiatives.²³ Although the agencies are not required to publish all digital public data online until 2018, agencies often post data on their websites in addition to the data they currently post on the City’s open data portal.

There is always the potential for data analytics techniques applied to public construction-related data to reveal gaps in data that have historically been collected in response to citywide process data needs or to support operating practices. Completed data analytic projects in the City’s Town+Gown program²⁴ show the promise of data analytics for public owners of construction. For example, change order data could be used to predict the level of contingency for projects by type as well as identify capital program process milestones that can predict change order activity to inform future decision-making, especially with respect to the capital planning and budget processes.²⁵ Statistically significant relationships to inform future practice changes may be identified by analyzing the relation of (a) the differential between the engineer’s or designer’s project estimates used in the public bidding process and the winning bid price, and (b) the percentage of total change orders to the original contract price with internal variables such as project location, project type, original contract duration and external economic indicators.²⁶ Additionally, analysis of financial data collected from bidders as part of agencies’ vendor responsibility determination process can reveal patterns of the local public construction market’s financial capabilities with respect to public project types and economic indicators over time. Analysis of citywide construction claims data with related project data can reveal relationships that can suggest future changes to project and risk management practices.²⁷ And, finally, sophisticated regression models applied to completed public projects can reveal their post-construction economic impacts on the surrounding neighborhoods.²⁸

The promise of data analytic applications extended further into data generated at the specific project level, which can include data generated from BIM systems, however, runs into additional data impediments that make data analytics at this level not yet possible. Contractor and subcontractor-level data provide resources for a data analytic window into issues related to cost estimates and project schedules at the myriad specific job levels. Analyzing the granular-level project data to understand what happened on projects can translate knowledge from actual project activities back up to the owner/ management level to inform project functions such as scoping and cost estimating. This data is provided to the public owner throughout the construction process pursuant to the terms of the construction contract²⁹ and the administrative processes governing payment, with some of the requirements rooted in state and local law. The granular project-related data including back-up project information supporting payments and change orders and changes to schedules (which aggregated data points are typically digitized) currently reside in paper form in agency file cabinets during construction and at warehouse storage facilities post-construction. If only construction-related data at the granular level were

captured in a digitized format suitable for analysis, it could provide the potential for data analysis to illuminate any number of intractable construction issues and suggest solutions.³⁰

For example, State law³¹ currently requires contractors and subcontractors to submit payroll data, schedule data and supporting data for billing and payment purposes. At present, such reporting is in paper-based format. Were it permitted to be submitted in digital format, it would be possible to utilize various project management methodologies to analyze associated project data from completed capital projects so that the City can use such information in capital program planning, design and construction activities. Moreover, there is substantial potential to inform future practice and policy changes from analyzing digital data generated from BIM models, which can be generated at all phases of a project, from design and construction activities to post-construction operations and management, linked to digitized project cost and schedule data is substantial. A recent pilot project with the New York City School Construction Authority and the New York City Department of Housing Preservation and Development (HPD), which requires electronic submission of certified payroll data by contractors, is the first step toward digitizing data now submitted in paper-based format. This program should be expanded to all City construction agencies and, later, be expanded to include other associated data from contractors and subcontractors.

iii. Modernize the City's VENDEX Process

VENDEX, operated and maintained by the Mayor's Office of Contract Services, is a computerized database of information about vendors who do business with the City. Baseline information in the VENDEX database comes from questionnaires that vendors submit as part of the contract award process. City agencies use this information to determine that a vendor is responsible contractor, which means that a vendor possesses the capability of fully performing the contract requirements and the business integrity to justify the award of public tax dollars.³²

Recently enacted Local Law 72 of 2017, one of the recent amendments designed to improve VENDEX's efficiency, raised the threshold amount required for a vendor to submit a VENDEX questionnaire from \$100,000 to \$250,000 in aggregate contracts or subcontracts within the preceding 12-month period. (The prior \$100,000 threshold had not changed since 1991.) This is a laudable amendment, inasmuch as limiting the VENDEX questionnaire requirement to contractors involved with the larger, more complex projects will expedite human-services contracts, and ease the paperwork burden for the small business enterprises.

In addition to the City Council's recent amendments, however, there are additional opportunities to make the system more efficient and, ultimately, more effective. For example, the contract threshold amounts could be updated and indexed to keep up with inflation over time, much in the same way the State, in 2008, updated and provided for future indexing of the thresholds for the Wicks Law. Without automatic indexing, the advantages brought by the recent increase in the threshold amounts that trigger the VENDEX submission requirement would diminish over time.³³

Additionally, the substance of the VENDEX questions themselves should be revised to reflect the different organizations, structures, purposes and sources of risk between the for-profit

and not-for-profit sectors, as well as differences among firms in different for-profit sectors. Despite their differences, the VENDEX system treats not-for-profit organizations in the same manner which it treats for-profit organizations, both with respect to the nature of work they perform and the nature of risks related to their governance structures.

To be sure, the “market model of competition” that underlies the City’s procurement process is, to a great extent, required by State law.³⁴ Yet, the City’s PPB rules and City agency practices have always reflected the “fundamental differences in procurement of human services as opposed to goods and construction-related services, which State law treats as a commodity.”³⁵ The City’s acknowledgement of differences between for-profit vendors and not-for-profit vendors provides the basis for the Committee’s recommendation that the VENDEX process be modernized to accept credible data sources for large for-profit companies, such as filings required by the Securities and Exchange Commission or the Internal Revenue Service, as applicable, as a substitute for elements of the VENDEX submissions.³⁶ Leveraging other credible sources of vendor financial data would increase the efficiency of the VENDEX process while maintaining, or even increasing, its effectiveness in supporting agencies’ assessment of vendors’ overall business integrity.

b. Opportunities Available to the City as Regulator of Built Environment

i. Using Analysis to Reform City Environmental Quality Review Process

The sponsor of a construction project—public or private—that requires certain discretionary City action must perform an environmental assessment to determine whether the project may have a significant impact on the environment. If so, an Environmental Impact Statement (EIS) must be prepared under the City Environmental Quality Review (CEQR) process. The environmental review process established by CEQR and the State Environmental Quality Review Act requires the identification and disclosure of significant impacts in areas such as traffic, air quality, socio-economic conditions, neighborhood character and visual effects. This public disclosure process is driven by subject matter experts using various metrics and rules-of-thumb set forth in a comprehensive manual that has been published by the City. Since many projects have been challenged for an alleged failure to comply with the requirements of SEQRA/CEQR, the standard EIS is the product of a methodology to minimize legal risk, and the entire process is both time consuming and expensive. Moreover, the timing of the process requires estimating possible environmental impacts often at the earliest phases of a project, before project scope and design definition are fully complete, so a supplemental environmental review may sometimes be required as the project design evolves, increasing the chances of delay and increased project costs.

The CEQR process requires the Department of City Planning (DCP) and the lead city agency to consider “environmental, social and economic factors” before granting approval to a proposed land use request.³⁷ It has been estimated that a typical environmental review in the City can take six months to complete and costs between \$100,000 for smaller projects and \$2.5 million for larger ones.³⁸ In 2010, the New York City Economic Development Corporation (EDC) engaged a risk-based assessment of the CEQR process in a Town+Gown research project to identify a procedural filter for a reform that would permit projects with certain characteristics

statistically correlated with a negative declaration to proceed, while the agencies involved in the CEQR review focused on the more complex projects.³⁹ This reform keeps the more complex projects from holding up those projects statistically likely to receive negative declarations.

A subsequent Town+Gown research project hypothesized that the lack of scientific evidence-based data regarding post-construction environmental impacts and the effectiveness of the mitigation identified in an EIS in mitigating such impacts makes it difficult to assess the effectiveness of EIS documents in estimating future conditions.⁴⁰ Since the CEQR process does not require *ex post facto* evidence-based evaluations of EIS estimates of impact and proposed mitigations, there is no database of post-construction performance to inform future EIS practice. Limitations imposed by the small number of original EIS data available at the time of analysis constrained the team's ability to develop the full methodology to assess the accuracy of EIS estimates in predicting actual project impacts. In addition, the Town+Gown team noted that EIS documents are not required to be filed in an accessible, standardized digital format, *e.g.*, PDF format does not easily permit electronic extraction. This hinders data extraction for future analysis.

These research projects suggest that it is possible for the City to apply the results of future data analytics and science, with respect to the CEQR process, for a range of additional project types with characteristics statistically likely to result in a negative declaration. Revising review practices, consistent with law and correlated to risk would facilitate projects subject to CEQR staying within initial schedule and budget parameters. Moreover, the City could consider instituting a process of a science-based *ex post facto* evaluation of EIS statements to create a database that can inform future EIS practice.

c. Opportunities Available to the City as Economic Development Catalyst

i. Improve the MWBE Certification Process

MWBE programs can function as economic development catalysts for a segment of the construction industry. During this administration, the City has made several improvements to its MWBE program that alleviate certain obstacles to MWBEs' participation in public construction projects and assist MWBEs in attaining the capacity to be competitive, such as launching the Mayor's Office of MWBEs which streamlined the certification application for solo proprietors, and creating programs such as the low-interest Contract Financing Loan Fund, the Corporate Alliance Program/Entrepreneurs' Organization initiative and "Manage Forward". Earlier, the City had improved the certification process when it amended the City Charter to permit the New York City Department of Small Business Services (SBS) to recognize firms certified as MWBEs by other governmental entities as certified by the City ("Fast Track"), and when SBS instituted its "Harvest" program, which offers free consultation to an applicant before an application is formally submitted. Additionally, HPD has instituted a two-step request for proposal (RFP) process and has revised its standard RFP questions, and, EDC, if not other City construction agencies as well, has subdivided larger construction projects to provide bidding opportunities for smaller and mid-size firms, and has dedicated certain projects for small developers. All of these changes will provide greater opportunities for MWBE firms.

There is room, however, to continue improving the City's MWBE program.

- *Mandate Training for City Agency Staff.* Recent City legislation requires SBS to conduct mandatory training for agency chief and MWBE contracting officers regarding participation of MWBE businesses in City procurement.⁴¹ This training should include more comprehensive information about MWBE qualifications for certification as well as construction and construction-contracting knowledge. The Committee has heard anecdotally that some agency staff members are not fully familiar with the different types of corporate structures, and, additionally, sometimes they insist on documents that are no more probative than others, such as "original" entity documents, even when all other indicia has revealed the *bona fides* of the applicant. These types of requests likewise place unnecessary burdens on and slow down the process for small firms seeking greater opportunities.
- *Leverage State Actions.* While the State operates a nicely-designed and transparent website portal consisting of a virtual "pipeline" for Fast Track applications, there is apparently no mechanism for the participating agencies to update the portal once there is a change in the status of the application. An applicant therefore has to call the agency where the application was submitted to inquire about its status. Both the applicant and staff members of the other Fast Track agencies should have the benefit of using the portal to its full capacity. In that regard, it would be ideal if the City could work in lockstep with the State in certifying MWBE applications. Currently, while the City and State agencies are purportedly uniform in the types of information requested and collected, each City and State agency has its own requirements for placing MWBE contractors and suppliers on their individual bidders' lists, and there are different timelines for recertification.⁴² These seemingly small inconsistencies place a disproportionate demand on the few resources of small construction businesses. To the extent that each City agency has its own particular needs not directly related to MWBE qualification, it would seem that they could be addressed in the RFPs, which a certified firm still has to submit in any event. Furthermore, it is unclear why the satisfaction of MWBE recertification criteria for one agency for a particular time period would not be sufficient for another. Perhaps eventually SBS can prevail upon the State's Division of Minority and Women's Business Development of the Empire State Development Corporation to accept its or any Fast Track participant's certification of an MWBE application for one set time period.

ii. Match Citywide Process and Policy to Risks Posed by Small Construction Businesses

In New York and across the nation, despite the presence of large firms in the industry, the vast majority of construction firms are small business enterprises,⁴³ including MWBEs. For small business enterprises, survivability and growth depend on cash flow to support the contracted work itself as well as the enterprises' overall portfolio of construction projects.

- *Modify the Change Order Process.* The length of time the City takes to approve and process change orders while the contractor proceeds with the work and incurs further

costs creates a significant cash flow issue for small construction businesses.⁴⁴ While process management reform approaches, which have been tried in the past, may reduce processing time on the margins, if it were possible to perform a risk-based analysis similar to the one described above with respect to the EIS review process, it might support a two-tiered review methodology based on risk to the budget. In the absence of a risk-based approach, change order processing delays will continue to adversely impact projects, artificially driving up cost of work, some of which is reflected in the original “lowest cost” bids, and continually pushing out dates of project completion. In addition, investigating the original causes of change orders in an effort to minimize them might generate effective budget policy and practice options for construction contingency, which would support expected types of changes during construction (i.e., unforeseen conditions and designer’s errors and omissions). As a result, the City might consider creating an omnibus contingency fund with project contingency contributions to the fund at amounts based on analysis of historical change order activity.⁴⁵

- *Revise Claims and Dispute Resolution Process.* While the current City standard construction contract contains a multi-step alternative dispute resolution process, this process reflects the adversarial relationship that is common in design-bid-build environment contracts, one effect of which impedes the fullest flow of information and problem solving efforts among parties. Perhaps the City could develop an alternative to the standard alternative dispute resolution processes that would aim at resolving, in real time, the problems and disputes during construction process in a way that increases the flow of information during construction and approximates some of the benefits of integrated project delivery. Examples of alternatives include dispute mitigation, creating a dispute review board, implementing a “standing neutral” process on a project basis, which would involve preselection of a respected neutral expert, or panel of experts, to be a dispute resolver throughout the life of the project, and mediation.
- *Reduce Retainage Portion Based on Data Analyses.* General Municipal Law § 106-b governs payments for public works at the local government level, and permits public owners to retain, until substantial completion of the project, up to 5% of requested progress payments to prime contractors if the project amount triggers the requirement of a performance and payment bond from the prime contractor.⁴⁶ In the event such a bond is not required, the public owner may retain up to 10% of the progress payments.

The City construction contract reflects such statutory provisions, which represent a ceiling, not an absolutely required amount. Upon substantial completion, the public owner is required to promptly pay the remaining amount of the contract less some hold-back for punch list items and an amount necessary to satisfy any outstanding claims, liens or judgments.

The point of “substantial completion” contains a significant level of owner discretion, whereas reliable cash flow is indispensable to small construction businesses. The Committee recommends risk-based data analyses of what historically happens near the points of substantial

completion during which time the public owner may occupy the project pending final completion.⁴⁷ Such analyses might provide the City with opportunities to reduce the retainage amount for certain types of projects and/or contractors, provide more definitional guidance for the term “substantial completion”, and release a portion of the retained amounts at a point earlier than “substantial completion,” especially in cases where the public owner is making beneficial use of the project.

IV. CONCLUSION

The Committee hopes that its analyses and recommendations help to provide a foundation for a dialogue about, and further exploration into, the City’s use of its own management tools and techniques to improve the processes underlying project design and construction within its boundaries.

APPENDIX A

THE MANY ROLES OF THE CITY IN THE BUILT ENVIRONMENT

Institutional. Government performs many functions simultaneously in the built environment.⁴⁸ From an institutional perspective, the public works or capital programs of government function as “work orders for facilities relating to public” goods, and “social” or “mixed goods” that correct for negative externalities.⁴⁹ Public capital programs produce infrastructure, such as roads, bridges, water, sewer and sanitation facilities. Public capital programs are also responsible for structures that house services provided or subsidized by government such as schools, libraries, public safety providers, social and health services providers and, in New York, cultural institutions. This baseline institutional role of government in the built environment is just the beginning of a discussion of government’s many other roles in the built environment.

As Owner. As an owner and client of construction-related services, the City must be concerned with project budget, schedule, quality and safety. Owners bear the ultimate responsibility for any capital project or program—from program definition to project commissioning. The financing, design and construction of long-lived physical assets involve sets of relationships among three actors—the owner, the designer (architect/engineer), and the constructor, often called the contractor. A critical objective for any owner is to align its interests in budget, schedule, safety and quality with those of its agents in construction who often have superior knowledge of the project at various points in the process.

Public capital programs create physical aspects of the public realm. I.N. Phelps Stokes, who presided over the Art Commissioner under Mayor LaGuardia, expressed the challenges inherent in municipal capital programs when he said that “[t]he production of beauty, especially by simple and inexpensive means is a very subtle problem and can be solved successfully only by a combination of ability, experience and care.” Though articulated over 100 years ago, this expression of the tension among the three classical values in architecture⁵⁰ remains an accurate expression of the challenges inherent in municipal design and construction.

For public projects, the beauty of a publicly-funded built item must be evaluated in relation to its durability and useful function. The concept of “inexpensive means” exists in the interplay of the three values, relating the cost of the built thing to the combination of function, durability and beauty/impact that an owner wishes to or can afford to purchase.⁵¹ The phrase “combination of ability, experience and care” is the exercise in which public owners—with component functions spread across the governmental enterprise, with their contracted designers and contractors—engage as they execute a public capital program.

When the City acts as an owner, it does so primarily through the contractual relationships between it and its designers and contractors (and with subcontractors). Any construction contract is the product of industry standard practice and governing law, including case law.⁵² Specific project circumstances, such as the extent of scope definition, the need for schedule speed and certainty, the need for flexibility to make changes to the project during construction,

the capacity of the owner to participate in the process, and general market conditions, should influence the appropriate service delivery methodology (*e.g.*, design-build, design-bid-build) and, equally, the appropriate contract form, which can vary from a fixed-price form to a cost-reimbursable form. Various statutes, however, mandate certain risk allocations among parties, on both public and private projects, regardless of whether the municipality would contract differently based on the risk assessment of individual projects. Where there are statutes which constrain the ability of parties to a public project to manage change in order to minimize the negative impact of change on schedule and cost, there are hidden opportunities for the owner to reduce waste, as the Committee recommends in this Report.

As Regulator. Government acts in the role of a regulator by promulgating local building and safety codes through which it regulates the built environment, including new construction, renovation of buildings and certain operational features for traditional public safety purposes and, recently, environmental sustainability purposes. Local government also regulates producers of built environment components *via* its building and safety codes, *e.g.*, when it mandates testing of construction materials, such as concrete, or mandates the use of certain materials, such as black iron. Local governments exercise regulatory powers with respect to zoning and land use, including comprehensive planning, which is derived from government's health, safety and public welfare police powers, but has come to include its interest in economic development.⁵³

Government also regulates and licenses built environment participants, such as at the state level, which licenses construction industry professionals, and at the local government level, which licenses and/or tests certain building trade companies and/or their employees. Government also regulates itself, such as when New York State regulates the details of the public construction procurement process for public works projects, thereby limiting the availability of various service delivery methodologies. All levels of government regulate details of the public construction process, mandating certain labor wage requirements, project and worker insurance and bonding requirements and requirements related to safety and work conditions.

All levels of government impose conditions on public and private construction to focus on the impact of those projects on the natural environment. Government also imposes restrictions that operate like regulations on its own projects to support public policy objectives not directly related to the built environment when, for example, it requires its contractors to sub-contract with local businesses or MWBEs. Government at all levels also directs and regulates private capital participation in the public realm, such as the privately-owned and publicly regulated utilities—in New York, telecommunication, electricity and gas.

When exercising this unique regulatory role, all levels of government enact laws and regulations, each for valid public purposes, that can be at odds with each other, and that can be at odds with the public owner's ability to efficiently exploit its capital programs as economic tools. Moreover, the construction industry is a fragmented industry, “dominated by a large number of relatively small firms, spread over a vast geographical area.”⁵⁴ To the extent that regulations create complexities that operate as inadvertent barriers to effective competition in a fragmented construction market, they further limit the positive impact of construction on the economy. Finally, to the extent that any public owner's capital program comprises a significant share of the

overall construction within its jurisdiction, its regulatory policies and practices can have an impact on particular segments of its local economy.⁵⁵

As Economic Policy Maker. As discussed above, a government’s capital program is a proxy for “public” goods and “social” or “mixed goods” that correct for negative externalities within its jurisdiction. While engaging in such activities, government acts in the role of economic policy maker, often providing subsidies to increase private sector production of certain project typologies to advance certain public policies, such as increasing educational opportunities, increasing housing in general and affordable housing in particular, increasing transportation options and increasing economic activity in depressed parts of a jurisdiction. Government capital programs also function as an economic stimulus within the applicable level of the economy during the downside of a particular set of economic and business cycles. The exercise of formal planning and zoning powers for public safety purposes regulates the built environment on a scale in ways that also impact a jurisdiction’s overall long-term economic performance.

As Financier. Government also acts as the primary financier of its public projects. State and local governments finance their projects as institutional borrowers in the capital markets, with various pledged revenue sources supporting the debt. Government typically finances these projects by the issuance of municipal debt backed by various types of credit, which ultimately is paid by people who, as two examples with respect to the City, are property owners (property tax for the City’s general obligation debt) and individual taxpayers (income/sales tax for other City bond credits). The revenues to repay City bonds come from the City’s General Fund, which also is used to pay the operating expenses of the City each year. Restrictions imposed by state constitutions, local law and federal income tax law as conditions of public borrowing can affect what can be constructed and/or how it can be constructed and can affect the allocation of risk on projects.

Construction Law Committee
Virginia K. Trunkes, Chair

Report Contributors: Richard J. Flanagan, Joseph Hogan, John Adam Rapaport,
Elyse Ruzow, Kaila Sergent and Arthur Charles Silverman

Editor-in-Chief: Patricia A. Harris

Assistant Editors: Barrett Richards, Gary L. Rubin

November 2017

¹ Available at <https://www.infrastructurereportcard.org/> (all links last visited Sept. 20, 2017).

² See Built Environment Series Recap & Materials: 21st Century Construction, 20th Century Construction Law, <http://www.nybar.org/member-and-career-services/committees/construction-law-committee/built-environment-series-recap-and-materials>.

³ By focusing on local actions, the Committee does not intend to suggest that deeper reforms in State laws are not necessary to optimize process efficiencies and avoid unnecessary costs.

⁴ The Committee has also reviewed several reports analyzing the City's capital planning, budgeting and implementation processes and has noted, throughout this report, relevant observations and recommendations from these reports. They are:

Citizens Budget Commission, *Planning After PLANYC: A Framework for Developing New York City's Next Ten-Year Capital Strategy*, December 5, 2013, (Planning After PLANYC), <https://cbcny.org/sites/default/files/media/files/Planning%20After%20PLANYC.pdf>; Center for an Urban Future, *Caution Ahead*, March 2014 (Caution Ahead), <https://nycfuture.org/pdf/Caution-Ahead.pdf>; Center for an Urban Future and Citizens Budget Commission, *Slow Build*, April 2017 (Slow Build), <https://nycfuture.org/research/slow-build>; and Citizens Budget Commission, *Capital Budgeting for 2030: Achieving the Goals of PLANYC*, December 2007 (Capital Budgeting for 2030), https://cbcny.org/sites/default/files/REPORT_Capital_Budgeting_2030.pdf.

⁵ A non-public analysis performed in 2005-2006 that served as the foundation for these initiatives estimated that the addition of one bidder per project during an expanding economy could reduce winning bid prices by two to three percent.

⁶ This is one example of opportunities that can be found in public construction contracts, where the current approach to risk allocation may impede cost avoidance and negatively impact the efficiency of the construction process.

⁷ Another initiative announced in 2008, which would have involved tracking all construction bids centrally, sharing bid information across the City's construction agencies and using this data to inform procurement decisions, was not implemented. See *Planning After PLANYC*, *supra* note 4, pp. 6-22.

⁸ Some of these standard practices historically emerged in response to the State law requirements for public works—see other reports cited in fn. 1, *supra*, General Municipal Law (GML) §§ 101 and 103, which require acceptance of the lowest bid for construction contracts.

⁹ See *Slow Build*, *supra* note 4, at 25.

¹⁰ Project labor agreements are a version of what is known as “pre-hire agreements” entered into by a public owner, construction unions and contractor firms before the procurement of any construction services for a public project. A project labor agreement functions as “a comprehensive labor relations agreement — the ‘job site constitution’ — that governs over various area craft agreements, setting uniform terms and conditions, for a particular project.” Kotler, F. *Project Labor Agreements in New York State: In the Public Interest*. Ithaca, NY: Cornell University, School of Industrial and Labor Relations — Extension Division, Construction Industry Program (March 2009), p. 2, <http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1021&context=reports>.

¹¹ Labor Law § 222.

¹² See *Planning After PLANYC*, *supra* note 4, at 25.

¹³ See *supra* note 4: *Capital Budgeting for 2030*, at 13-14 (for history), 14-23; *Planning After PLANYC*, at 23-24; *Caution Ahead*, at 55.

¹⁴ In the early 1990s Comptroller Alan Hevesi undertook an 18-month comprehensive review of capital assets within the City to assess the state of good repair. His report, “Dilemma in the Millennium,” estimated that it would take more than \$90 billion to bring capital assets within the City into a state of good repair, close to double what public agencies had planned to spend at the time. In 2007, the Citizens Budget Commission (CBC), inspired by

Mayor Bloomberg's first PlaNYC, picked up the cause of state of good repair, referencing "Dilemma in the Millennium" in its analysis of the City's capital planning and budgeting processes. Having found that the current process does not adequately assess maintenance needs or have a specific plan or mandate to bring capital assets into a state of good repair, the CBC, in *Planning After PLANYC*, recommended amending the Charter to institutionalize and expand the approach to strategic planning embodied in PlaNYC (p. 23), but also suggested in *Capital Budgeting for 2030*, a limitation that the AIMS process does not include non-City owned assets (p. 22). The focus in *Caution Ahead* included all assets irrespective of ownership (pp. 17-25). All cites *supra* note 4.

¹⁵ Assets located within the City's boundaries but owned by entities other than the City, such as the MTA, would not be covered by this City charter mandated process.

¹⁶ Official Statement of the City of New York with respect to \$74,060,000 General Obligation Bonds, Fiscal 2008 Series J, Subseries J-8, Adjustable Rate Bonds, dated March 18, 2016 ("Official Statement"), at 48. See *Capital Budgeting for 2030*, *supra* note 4, at 15-22.

¹⁷ Official Statement, *id.*, at 49.

¹⁸ Message of the Mayor to the Fiscal Year 2009 Executive Budget, May 1, 2008, http://www1.nyc.gov/assets/omb/downloads/pdf/mm5_08.pdf. There had also been some policy efforts at the agency level to have the AIMS process routinely produce better needs assessments and scope information by expanding real condition surveys for libraries to be incorporated into the AIMS process and then expand it to other building typologies.

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*, pp. 70-71.

²² Local Law 11/2012, NYC Open Data Dashboard, <https://nycopendata.socrata.com/dashboard>.

²³ For example, the Department of Buildings posts building permit data; the Department of Citywide Administrative Services posts data on City-owned and leased property and municipal building energy benchmarking results and energy usage; the Department of Environmental Protection posts data on the watershed, including watershed quality, water consumption, green infrastructure, water quality, wastewater treatment plants, and catch basin inspections and cleaning activity; the Department of Finance posts building classification codes; HPD posts housing maintenance code complaints; the Department of Information Technology and Telecommunications posts many base maps of built environment structures such as sidewalks, roadways, open spaces, building footprints and transportation structures as well as 3-D building models; the Department of Transportation posts data on street pavement ratings, 10-year plan for street reconstruction projects and weekly resurfacing schedules; the Mayor's Office of Management and Budget posts capital budget-related data, which is also available on its website; the former Mayor's Office of Long-term Planning and Sustainability (which has been reconfigured and renamed under the current administration) posts the 2020s and 2050s 500-year floodplain maps; and the Office of the Mayor posts the construction pipeline, a listing of construction projects *en route* to public bidding.

²⁴ See <http://www1.nyc.gov/site/ddc/about/town-gown.page>.

²⁵ See *Building Ideas*, Vol. 4, pp. 9-12, for abstract of Mei Liu (Brooklyn Polytechnic Institute) "What is the State of Building Information Modeling and Integrated Project Delivery in Public Construction?" dissertation, <http://www1.nyc.gov/assets/ddc/downloads/town-and-gown/building-ideas-4.pdf>.

²⁶ See <https://vimeo.com/215532183/1ff5f29c70> (video on several completed business data analytic projects with Fordham/Gabelli School of Business student teams in Town+Gown's experiential learning program); see also <http://www1.nyc.gov/site/ddc/about/town-gown-components.page>.

²⁷ *Id.*

²⁸ See summary of "Predicting the Effect of New York City Capital Projects on Nearby Property Sales Prices,"

a Columbia/SIPA capstone project, on pp. 6-7 in precis document for *The Policy of Design and Equity*, a Symposium event on October 28, 2015, <http://www1.nyc.gov/assets/ddc/downloads/town-and-gown/10-28-15%20precis%20document.pdf>.

²⁹ The data production requirements in the construction contracts with the prime contractors, which are not required to be digitized, are repeated in the contracts between the prime contractors and their subcontractors.

³⁰ As an example, see *Slow Build*, *supra* note 4, at 10-14, 17-18, 25, and 26.

³¹ New York State Labor Law, Section 220 and New York State Constitution, Article 1, Section 17.

³² The City created VENDEX in 1986, after the Parking Violations Bureau (PVB) scandal that resulted from the award of contracts under the City's contracting process to "companies with connections to top PVB officials and Democratic Party bosses" in violation of the City's Conflict of Interest Board rules. See Natalie Gomez Velez, *Proactive Procurement: Using New York City's Procurement Rules to Foster Positive Human Services Policies and Serve Public Goals*, *New York City Law Review*, Vol. 9, No. 2, 331, Summer 2006 (p. 719 in version accessed on 05-04-16 at <https://papers.ssrn.com/sol3/DisplayAbstractSearch.cfm>) citing Frank Anechiarico and James B. Jacobs, *Purging Corruption from Public Contracting: The "Solutions" Are Now Part of the Problem*, 40 *New York Law School Law Review*, 142, 147-49 (1995). Thereafter, as part of the 1989 Charter revision process, the City reformed its entire suite of procurement-related laws, and, in particular, the local law that created VENDEX, "with an eye toward corruption control." *Id.* at 718-719.

³³ See *supra* note 4: *Planning After PLANYC*, at 25-26; *Caution Ahead*, at 60; *Slow Build*, at 23-24, 28-29.

³⁴ GML §103 requires a market approach for public works, and requires awarding of contracts to the lowest competitive price proposed by a responsible bidder, thus treating the constructed object purely as a commodity. In *City Council v Bloomberg*, 6 N.Y.3d 380 (2006), the court underscored the primacy of GML §103's lowest competitive bid requirement, holding that the City could not impose additional requirements that would exclude bidders that did not provide equal benefits to domestic partners and spouses, and noting that the lowest competitive bid rule constrained the City from using the "public procurement process to enact social policy." Velez, *supra* note 32, at 727.

³⁵ Velez, *supra* note 32, at 723-724. See also *id.* at 729-740 for a description of evolving practices in the human services contracting area. The author's observation in the human services area that "[m]ost creative procurement policymaking work takes place in the framework of the contracts themselves, which starts with the pre-solicitation review ***and that much debate and innovation [takes] place in the context of setting the initial criteria for public contracts, from which everything else flows" (p. 727) could provide opportunities even in the construction-related services area constrained by state law.

³⁶ Publicly traded vendors could be permitted to submit 10-K documents filed with the Securities and Exchange Commission, while non-profit organizations could be permitted to submit their Form 990 materials filed with the Internal Revenue Service.

³⁷ Executive Order 91 of 1977, as incorporated into the Rules of the City of New York, 62 RCNY Chapter 5.

³⁸ Manhattan Institute of Policy Research, *Rethinking Environmental Review: A Handbook on What Can Be Done*, May 2007, p. 5.

³⁹ See *Building Ideas*, Vol. 1, pp. 14-15, for abstract of "New York City Environmental Review Process" (Columbia/SIPA), <http://www1.nyc.gov/assets/ddc/downloads/town-and-gown/building-ideas-1.pdf>.

⁴⁰ See *Building Ideas*, Vol. 5, pp. 42-45, for abstract of "Impacts of Urban Land Use: A Comparative Analysis of Environmental Impact Statements" (NYU/CUSP), <http://www1.nyc.gov/assets/ddc/downloads/town-and-gown/building-ideas-5.pdf>.

⁴¹ Local Law 113 of 2016, amending Administrative Code section 6-129.

⁴² The City requires recertification every 5 years. The State requires recertification every 3 years.

⁴³ See Gerald Finkel, *The Economics of the Construction Industry* (Armonk: M.E. Sharpe, Inc. 1997), ch. 3.

⁴⁴ This relates to the cash flow issue akin to the contract “retroactivity” practice documented in the human service contracting area, where contractors perform work with insufficient contractual authorization in advance of contract registration.

⁴⁵ *See supra* note 4: Planning After PLANYC, at 20-21; Slow Build, at 10-14, 25-26.

⁴⁶ The retainage requirement will flow down to the contracts between prime contractors and their subcontractors.

⁴⁷ *See* Standard New York City Construction Contract, Articles 44, 45, 14 and 16.

⁴⁸ Increasing the complexity of the nature of a local government public owner is the functional division of the public owner into many operating/line agencies responsible for different built environment structures/functions and oversight agencies responsible for discrete administrative functions with related institutional interests.

⁴⁹ Richard A. and Peggy B. Musgrave, *Public Finance in Theory and Practice*, 5/e (New York: McGraw-Hill Book Company, 1989), pp. 5-9, 41-58, 446-453; Danny Myers, *Construction Economics: A New Approach* (London: Spon Press, 2004), pp. 39-40, 147-159, 184-186, 191.

⁵⁰ *See* Royal Institute of British Architects (RIBA), “Architects and the Changing Construction Industry,” RIBA Journal (July 2000). The concept of beauty is one of three classical values in architecture, with the others consisting of durability (or build quality) and usefulness (or function). There is also a time dimension to the cost of a project, beginning with cost of the initial construction and expanding over the life of the asset to its operation and maintenance costs.

⁵¹ Miles, Lawrence D., *Techniques of Value Analysis and Engineering*, 3rd ed. (Washington, D.C.: Lawrence D. Miles Value Foundation, 1989), Chapters 1 and 2.

⁵² Professional and trade organizations representing the various participants have for some time offered, to their members and others, standard construction contracts that allocate risk in a manner consistent with their respective visions of a well-functioning project.

⁵³ This regulatory area is outside the scope of this report.

⁵⁴ Myers, *supra* note 49, at 7.

⁵⁵ The City, by exercising its formal municipal planning and zoning powers for public safety purposes, regulates the built environment on a larger scale in ways that also impact the City’s overall economic performance. Again, this is beyond the scope of this report.