



City of New York

OFFICE OF THE COMPTROLLER

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FINANCIAL AUDIT

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A Compilation of Audits
of the City's Oversight of
Construction Management
Consultants

7E13-103S

March 12, 2013

<http://comptroller.nyc.gov>

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THE CITY OF NEW YORK OFFICE OF THE COMPTROLLER FINANCIAL AUDIT

A Compilation of Audits of the City's Oversight of Construction Management Consultants

7E13-103S

REPORT IN BRIEF

Given the amount of taxpayer money spent on capital construction projects—\$9.1 billion in Fiscal Year 2011 and \$8.4 billion in Fiscal Year 2012—the Comptroller's Office has dedicated a portion of the resources of the Audit Bureau to conduct audits that examine the way that City agencies carry out construction and engineering work. One topic that the Audit Bureau examined was the effort by City entities to monitor construction management consultants to ensure that capital projects were completed in a timely manner and within budgeted amounts. Various City entities, such as corporations, authorities, and agencies are involved in overseeing the construction and management of capital projects.

Construction project management is the discipline of planning, organizing, securing and managing resources to bring about the successful completion of specific project goals and objectives. City entities carry out construction project management by using either in-house staff or by employing private construction management consultants. Private consultants are employed in cases where specialized experience is required or when entities lack sufficient personnel.

Audits conducted by the engineering audit division of the Comptroller's Office between Fiscal Years 2011 and 2012 have documented deficiencies in the oversight of capital construction work by four City entities—the Economic Development Corporation, the New York City Housing Authority, the Department of Parks and Recreation, and the Department of Sanitation.

Report Findings and Conclusion

For this compilation report we reviewed the results of four audit reports that examined whether the City was effectively monitoring construction management consultants and ensuring that capital construction projects were completed in a timely and cost effective manner.

Based on our evaluation, we conclude that deficiencies and problems with overseeing the work of construction management consultants and failing to complete projects on time resulted in the expenditure of \$22.13 million in additional construction management consultant costs. Furthermore, deficient oversight led to \$3.3 million in inappropriate and questionable payments

to a consultant, and \$8.25 million in monetary penalties for failure to complete certain projects on-time.

Report Recommendations

To address these issues we make 19 recommendations for improvement, including:

- Ensure that capital projects are completed and closed out within their originally scheduled timeframes and original contract and contingency amounts.
- Take appropriate steps to identify and mitigate problems that cause project delays and cost overruns and develop specific plans to do so.
- Ensure that progress schedules are submitted, approved, and regularly updated.
- Promulgate uniform standards for assigning in-house personnel to oversee construction management consultants.
- Compile standard written procedures for overseeing projects that are managed by construction management consultants.
- Seek recoupment for payments made to construction managers if any project and close-out delays are attributable to construction management consultants.
- Establish a management system to monitor the work of construction management consultants.
- Develop procedures to identify and remediate environmental hazards before commencing project work.
- Require that construction management consultants produce evidence to substantiate the reasonableness of work hours expended by their personnel.

BACKGROUND

The construction and management of capital projects such as sanitation garages, fire houses, playgrounds, libraries, and water treatment plants are handled by various City corporations, authorities, and agencies. These include:

- The Economic Development Corporation (EDC), which provides services relating to retaining and expanding industrial and commercial development within the City, including overseeing commercial and industrial development and stabilizing and improving industrial areas.
- The New York City Housing Authority (NYCHA), which is responsible for carrying out systemic improvements to the affordable housing developments it provides to City residents.
- The Department of Parks and Recreation (DPR), which is responsible for carrying out the design and construction of City-wide capital projects including parks and playgrounds, bike paths, sea walls, outdoor pools, boardwalks, basketball courts, baseball fields, and natural areas.
- The Department of Sanitation (DOS), which is responsible for constructing and operating sanitation garages and waste transfer stations within the five boroughs.

Construction project management is the discipline of planning, organizing, securing and managing resources to bring about the successful completion of specific project goals and objectives. The key elements of construction project management are scope (project size, goals, requirements), resources (people, equipment, material), time (task durations, dependencies, critical path), and money (costs, contingencies).

Construction project management consists of various phases:

- Initiation and Planning whose purpose is to adequately plan the required time, cost and resources to carry out the needed work and effectively manage risk during project execution.
- Execution and Monitoring consists of the processes used to complete the work defined in the project plan to accomplish the project's requirements. Project monitoring and control is that element of a project that keeps it on track, on time and within budget.
- Completion/Evaluation consists of finalizing all activities to formally close a project or a project phase, archive files, complete, settle, and close each contract and change order, and provide project maintenance and support to end users.¹

¹ Project close-out phase begins when construction is deemed substantially complete (95 percent) and covers activities such as completing punch-list work, obtaining final regulatory approvals, warranties, and guaranties, and making final payments.

Results of Ineffective Construction Project Management

All key elements of construction project management are interrelated and must be managed effectively if a project is to be successful. Failure to adequately plan and manage capital construction work greatly reduces the likelihood of completing a project on time and within budget. Construction management consultants are usually compensated on a time and material basis. Therefore, projects whose construction and close-out are delayed and extended incur additional costs for construction management services that would otherwise be unnecessary if projects were completed in a timely manner.

Four audits conducted by the Comptroller's Office found that many projects that were managed by construction management consultants exceeded their budgeted amounts and schedules. City oversight of consultants was hampered by inefficient procedures or a lack of written procedures for dealing with consultants or by assigning inappropriate numbers of in-house staff to oversee consultants. Deficiencies in managing projects were also attributable to problems with ensuring that designs and work scopes were adequate and met an agency's needs, failure to obtain required regulatory approvals and failure to examine site locations for environmental hazards before starting construction.

Deficiencies and problems with overseeing the work of construction management consultants and failing to complete projects on time resulted in the expenditure of \$22.13 million in additional staffing costs to consultants. Furthermore, deficient oversight led to \$3.3 million in inappropriate and questionable payments to a consultant, and \$8.25 million in monetary penalties for failure to complete certain projects on time.

How the City and Agencies Have Handled Construction Project Management

City Agencies, Corporations, and Authorities carry out construction project management by using either in-house staff or by employing private construction management consultants. Private consultants are employed in cases where specialized experience is required or when agencies lack sufficient personnel. However, when private consultants are employed, agencies usually assign some in-house staff to oversee the work of construction management consultants.

Construction management consultants are solicited to perform work under various types of contracts. A consultant may be employed as the prime contractor who is responsible for subcontracting and supervising various trades (e.g., plumbing, electrical, mechanical) that carry out the actual construction work. For these types of contracts, project funds are paid directly to the consultant who subsequently pays each of its subcontractors. Under another form of construction management contract, a consultant may be retained solely to supervise the work of construction contractors who are solicited directly by the City. For these types of contracts the construction management consultant and contractor are paid separately and directly by the City.

Construction management consultants are usually compensated on the basis of direct hourly salary costs, which are adjusted by a "multiplier." A multiplier is a factor by which a consultant or construction manager's direct salary costs are multiplied to compensate for overhead and profit. Overhead are costs not directly attributable to a specific project, including all support staff costs.

Regardless of the type of contract under which a consultant is employed, a construction management consultant may also provide other services during the design, contract procurement and construction phases of a project. For example, a consultant may be required to perform a “constructability review” of the construction documents before project bids are solicited.² Other services may include soil and site remediation testing and examination, emergency services, and administrative services.

Construction management consultants are required to assign qualified technical personnel with appropriate expertise to ensure that a project is completed and closed out on time and within its budgeted amount.

Audits of Construction Management Oversight Completed by the New York City Comptroller’s Office

Given the amount of taxpayer money spent on capital construction projects—\$9.1 billion in Fiscal Year 2011 and \$8.4 billion in Fiscal Year 2012— the Comptroller’s Office has dedicated a portion of the resources of the Audit Bureau to conduct audits that examine the way that City corporations, authorities, and agencies oversee the work of construction management consultants. Audits conducted by the engineering audit division between Fiscal Years 2011 and 2012 have documented instances in which City entities did not effectively oversee the work of construction management consultants. The Office conducted audits of two City agencies [Department of Parks and Recreation (DPR) and Department of Sanitation (DOS)], and audits of the New York City Economic Development Corporation (EDC) and the New York City Housing Authority (NYCHA).

These audits found that these agencies did not always effectively manage projects and the construction management consultants that were employed to carry them out. Specifically, at EDC an audit found \$3,344,961 in inappropriate and questionable payments to a construction manager consultant. At NYCHA the additional cost to pay for construction manager personnel for projects that were delayed was \$6,125,220. Similarly, at DPR the additional cost to pay for construction manager personnel for delayed projects was \$2,210,373. Finally, DOS paid \$13,800,334 in additional costs for construction management consultant services and \$8,250,000 in monetary penalties. (See Table 1 on page 6.)

² This type of review is intended to identify potential design deficiencies such as errors or omissions that may have an adverse impact during construction leading to project delays and increased costs.

Table 1
Summary of Costs Necessitated
by Deficient Construction Management Oversight

| City Entity | Additional Construction Management Cost * | Questionable Payments | Monetary Penalties ** |
|--|--|------------------------------|------------------------------|
| EDC | | \$3,344,961 | |
| NYCHA | \$6,125,220 | | |
| DPR | \$2,210,373 | | |
| DOS | \$13,800,334 | | \$8,250,000 |
| Grand Total = | \$22,135,927 | \$3,344,961 | \$8,250,000 |
| * Although the \$6.125 million in NYCHA costs do not come from City funding, it is indicative of control deficiencies that may adversely affect NYCHA projects that do use City funds. | | | |
| ** DOS may be liable to pay an additional \$5.9 million in penalties if another project is not completed in a timely manner. | | | |

Summaries of Capital Construction Audits Extracted from the Original Audit Reports

Audit Report on the Economic Development Corporation's Oversight of Turner Construction Company's Contract for Facility and Construction Management Services: Audit #FR10-075A (issued February 9, 2011)

The audit found that EDC is not effectively monitoring Turner Construction Company contract No. 16850005. Although much of the contract work was apparently complete and satisfactory, there were significant weaknesses in EDC's oversight of work performed under the contract (and certain work that was carried over from a previous Turner contract.) Consequently, of 10 sampled projects with expenditures totaling \$16,972,757, the audit identified \$2,700,800 in inappropriate and questionable payments to Turner and its subcontractors. Moreover, there was an additional \$644,161 in questionable payments that pertained to work that was carried over from the prior contract. The total of the dubious payments was \$3,344,961. Some of the costs would not have been incurred had the work been effectively monitored.

Overall, our review indicated that EDC's utter reliance on Turner to carry out construction and associated management tasks has contributed to EDC's lax oversight of the contract's

management. Although Turner is clearly responsible for undertaking the management of the EDC construction projects, it is our conclusion that EDC has granted Turner far too much leeway in this regard. As EDC is ultimately responsible for ensuring that work is performed appropriately and payments are substantiated, EDC must strengthen its own management system to provide a greater degree of oversight over Turner and all similar facility management and construction management services contracts.

New York City Housing Authority Oversight of the Construction Management/Build Program: Audit #7E11-119A (issued March 15, 2012)

To carry out some of the improvements provided for in its \$2.4 billion Fiscal Year 2011-2015 plan, NYCHA implemented a construction management/build program (CM/Build) in 2003 “to improve the quality of construction projects and ensure that they are administered effectively and efficiently.” Under the most recent phases of the program, NYCHA awarded CM/Build requirement contracts totaling \$425 million to 10 construction management consultants.

The audit identified deficiencies in the way that NYCHA monitors projects in the CM/Build program. The audit found that seven projects were delayed during their construction phase, while 64 projects were delayed in their close-out phase. In total, the additional cost to pay for construction manager personnel for the projects that were delayed during these phases was \$6,125,220.

NYCHA’s in-house staff of construction project managers maintains adequate oversight of the construction managers. However, NYCHA’s senior officials are hampered in their ability to adequately oversee CM/Build projects because of problems with obtaining accurate and complete information from the Primavera computer system, which is used to track and monitor project schedules. In addition, NYCHA lacks a method for tracking and identifying those change orders whose tardy resolution led to delays in completing construction and closing out project work. As a result, senior officials were unable to respond promptly to delays in completing construction and closing out projects.

Moreover, while NYCHA properly assigned in-house staff to the project locations to oversee the CM/Build program, the decision to assign the staff on a full-time basis may indicate that NYCHA lacks confidence in the effectiveness of the construction management companies that were employed to carry out the CM/Build program. If NYCHA assigned its in-house staff to the project locations on a part-time basis, NYCHA could save \$1,529,488 annually.

Department of Parks and Recreation’s oversight of Capital Projects: Audit #7E12-067A (issued January 11, 2013)

DPR is not carrying out and overseeing capital construction projects in a timely and cost-effective manner. The audit found that in Fiscal Years 2010 and 2011, 149 (47 percent) of projects were not completed within their originally scheduled timeframes. Furthermore, the cost for 30 (10 percent) of projects exceeded their original contract and contingency amounts. Moreover, 8 percent of the completed projects in Fiscal Years 2010 and 2011 were not completed on time and exceeded the original contract and contingency amounts.

Delays in completing projects that were managed by private construction management consultants led to the expenditure of additional costs to pay for construction management personnel. Of 149 delayed projects, 101 were monitored by DPR’s in-house staff of engineers; 48 projects were monitored by engineers employed by private consultants. The additional

construction management cost for the projects that were monitored by private consultants totaled \$2,210,373. This cost would not have been necessary had the projects been completed on time.

As a result, DPR expended more than \$13 million in project costs—\$2.2 million in additional staffing costs for construction management and \$11 million in additional construction costs, which included \$4 million in change orders that were necessitated by design errors or design omissions. Moreover, the City paid \$887,717 to construction contractors for claims that pertained to some of the delayed projects.

Department of Sanitation’s Oversight of Construction Management Consultants (DSNY): Audit #7E12-112A (issued March 12, 2013)

DOS is effectively monitoring construction management consultants to ensure that work is being performed effectively and in a timely manner with the exception of the Bureau of Engineering, which is not doing so. Construction of the three projects associated with the DOS Bureaus of Long Term Export and Waste Management Engineering was completed on time or with delays necessitated by unforeseen foundation conditions. However, the DOS Bureau of Engineering is not effectively monitoring construction management consultants to ensure that work is being performed effectively and in a timely manner. Construction of three projects associated with the Engineering Bureau (Garage Nos. Manhattan 4/4A/7 Brooklyn 1&4, and Queens 14) was delayed between 2.2 years and 5.8 years. Additionally, two of the three projects have not been “closed out” after more than 2.7 years to 4.7 years respectively elapsed since construction was deemed substantially complete by DOS. As a result of project delays, DOS paid \$13,800,334 in additional costs for construction management consultant services and \$8,250,000 in monetary penalties to the Friends of Hudson River Park, et al. Moreover, the City may need to pay additional monetary penalties totaling \$5,995,000 beginning in 2013 for delays attributable to the replacement of the Gansevoort Garage. The combined total of these additional costs is \$28,045,334.

The audit also found problems with the amount of liquidated damages that DOS could have assessed. For delays attributable to construction contractors, the daily amount of liquidated damages that was stipulated in the construction contracts for the Manhattan Garage was insufficient to compensate the City for the monetary penalties for which it was liable.

RECOMMENDATIONS

We had the following recommendations, which are based on the findings contained in the above noted audits. If these recommendations are implemented on a City-wide basis they would standardize and make consistent the process by which corporations, authorities, and agencies oversee and complete capital construction projects in a timely and cost efficient manner.

City Corporations, Authorities, and Agencies should:

1. Ensure that capital projects are completed and closed out within their originally scheduled timeframes and original contract and contingency amounts.
2. Take appropriate steps to identify and mitigate problems that cause project delays and cost overruns and develop specific plans to do so.
3. Ensure that progress schedules are submitted, approved, and regularly updated.
4. Track the progress of projects that have been slated for completion in a given time period.
5. Develop indicators to track the status of incomplete projects.
6. Promulgate uniform standards for assigning in-house personnel to oversee construction management consultants.
7. Compile standard written procedures for overseeing projects that are managed by construction management consultants.
8. Utilize a computerized tracking system to oversee construction progress.
9. Seek recoupment for payments made to construction managers if any project and close-out delays are attributable to construction management consultants.
10. Designate timeframes for carrying out all the steps required to process change orders, including initiation, estimating, negotiation, and approval.
11. Establish a management system to monitor the work of construction management consultants.
12. Maintain adequate documentation to substantiate the development and authorization of appropriate work scopes and ensure that vendor proposals are consistent with work scopes.
13. Develop procedures to identify and remediate environmental hazards before commencing project work.
14. Require project and property managers to perform frequent inspections of work and to maintain inspection reports and logs and ensure that project and property managers participate in final work inspections and the development of punch-lists.
15. Develop procedures for ensuring that required project documentation, including schedules and meeting minutes, are submitted and approved in a timely manner.
16. Require that construction management consultants produce evidence to substantiate the reasonableness of work hours expended by its personnel.

17. Ensure that construction management consultants provide estimates—before commencing work—of the number of hours its personnel are expected to be employed on that project.
18. Review all payment requests to ensure that payroll expenses comply with contract provisions and the staff and fee schedule and ensure that payments for overhead personnel are contained in the overhead and profit “multiplier.”
19. Ensure that the amount of liquidated damages is sufficient to adequately protect the City’s interests in cases where delays are due to contractors.