

Item:



Finance, Administration and Audit Committee Report

DATE: Wednesday, June 06, 2018

WARD(S): ALL

TITLE: INTERNAL AUDIT REPORT – CONSTRUCTION AUDIT OF FIRE STATION 7-4: PHASE 1

FROM:

Kevin Shapiro, Director of Internal Audit

ACTION: FOR INFORMATION

Purpose

To communicate the findings from the Internal Audit Report on the Construction Audit of Fire Station 7-4: Phase 1.

Recommendations

1. That the Internal Audit Report on the Construction Audit of Fire Station 7-4: Phase 1 be received.

Report Highlights

- There are four objectives common to every construction project: scope, cost, schedule and quality.
- The primary focus of project management is to plan and execute a project in such a manner as to maximize the ability to meet these four objectives.
- The planning and design, bid and procurement phases of Fire Station 7-4 have experienced numerous challenges that have significantly increased the risk that the project objectives will not be met, increasing the risk of litigation and reputational damage to the City.
- Management has developed action plans which will mitigate the identified risks and address the recommendations outlined in the report.

Background

The objective of the audit was to evaluate the effectiveness of project management policies and procedures related to the fiscal, operational, and administrative controls over capital delivery activities, including project scope, cost, schedule and quality.

Based on consultations with management, Fire Station #7-4 was selected for the audit. The single-story, LEED certified fire station is in Kleinburg and will include apparatus bays, ancillary offices and provide living quarters for the fire crew on shift. Construction of the fire station is expected to start in the spring of 2018, with an expected occupancy of August 2019.

Auditing a capital project from beginning to end can provide added assurance, identify problems as they arise, and help improve outcomes. Since the scope of the audit will encompass the complete lifecycle of the project, audit reports will be issued after the completion of the following project phases:

- Planning and Design, and Bid and Procurement Phases (Phase 1).
- Construction Phase (Phase 2).
- Close Out Phase (Phase 3).

Phase 1 included a review of:

- The City's capital project management and governance framework
- Vendor prequalification and contract award processes
- Planning, budgeting and architectural programming
- Performance and monitoring

Previous Reports/Authority

Not applicable.

Analysis and Options

Capital projects are generally funded, planned and executed as individual, discrete projects. Four objectives which are common to every construction project are: scope, cost, schedule and quality. The primary focus of project management is to plan and execute a project in such a manner as to maximize the ability to meet these four objectives.

Ineffective project governance, poor communication protocols and inadequate controls over scope change management are typically the cause when capital projects fail to meet their objectives.

Project management plans, even for relatively small construction projects, should exhibit a level of detail greater than might be deemed appropriate for other types of projects of equivalent cost and duration.

Financial Impact

There are no direct economic impacts associated with this report.

Broader Regional Impacts/Considerations

Not applicable.

Conclusion

The planning and design, bid and procurement phases of the construction of Fire Station 7-4 have experienced numerous issues that have significantly increased the risk that this project will not be delivered on time or on budget while increasing the risk of litigation and reputational damage to the City.

There are several contributing factors:

- Ineffective city-wide capital project governance, management and oversight
- Poor cost estimating and budget forecasting practices
- Approval of significant, late scope amendments without a formal business case
- Inadequate vendor prequalification criteria
- Vendor evaluation committee composition that included individuals that do not possess the appropriate subject matter expertise

The following organization wide improvements are required to improve capital project delivery:

- Establish a standardized project management governance framework that clearly defines roles, responsibilities and accountability of all project stakeholders.
- Clearly define and finalize the business case and project scope, including cost and schedule estimates, prior to entering the bid and procurement phase.
- Develop a city-wide change management process for evaluating the feasibility of an existing project if new information becomes available that may compromise the goals and objectives of the originally approved project.
- Enhance the vendor performance management and pre-qualification criteria.
- Ensure members of the vendor evaluation committee have the necessary experience and technical expertise to properly evaluate the submission.

Internal Audit will follow up on the status of outstanding Management Action Plans related to this audit and will report the status to the Finance, Administration and Audit Committee.

For more information, please contact: Kevin Shapiro, Director of Internal Audit, ext. 8293

Attachments

1. Internal Audit Report – Construction Audit of Fire Station 7-4: Phase 1

Prepared by

Kevin Shapiro, Director of Internal Audit, ext. 8293



INTERNAL AUDIT REPORT

Construction Audit of Fire Station #7-4: Phase 1

May 2018

INTERNAL AUDIT REPORT

CONSTRUCTION AUDIT OF FIRE STATION 7-4: PHASE 1

CONCLUSION AND SUMMARY

The planning and design, bid and procurement phases of the construction of Fire Station 7-4 have experienced numerous issues that have significantly increased the risk that this project will not be delivered on time or on budget while increasing the risk of litigation and reputational damage to the City.

There are several contributing factors:

- Ineffective city-wide capital project governance, management and oversight
- Poor cost estimating and budget forecasting practices
- Approval of significant, late scope amendments without a formal business case
- Inadequate vendor prequalification criteria
- Vendor evaluation committee composition that included individuals that do not possess the appropriate subject matter expertise

The following organization wide improvements are required to improve capital project delivery:

- Establish a standardized project management governance framework that clearly defines roles, responsibilities and accountability of all project stakeholders.
- Clearly define and finalize the business case and project scope, including cost and schedule estimates, prior to entering the bid and procurement phase.
- Develop a city-wide change management process for evaluating the feasibility of an existing project if new information becomes available that may compromise the goals and objectives of the originally approved project.
- Enhance the vendor performance management and pre-qualification criteria.
- Ensure members of the vendor evaluation committee have the necessary experience and technical expertise to properly evaluate the submission.

The City does not have a standardized city-wide capital project management governance framework in place. As a result, some of the project stakeholders have assumed inappropriate roles, responsibilities and accountability, while other stakeholders have not been involved when they should be.

A standardized city-wide capital project management governance framework is essential for effectively managing capital projects, including cost, schedule and performance risks. For projects to be developed efficiently, stakeholders must understand their roles and responsibilities and that of the other stakeholders, so everyone's expectations, accountabilities, and probable courses of action are predictable and can be relied upon. Having an effective project management governance structure and lines of authority prevents unnecessary conflict and clarifies roles and responsibilities and helps ensure that services are effectively delivered to residents. A clearly defined hierarchy creates a path of accountability for every project related activity.

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The capital budget for this project was originally developed in 2009 and updated in the 2013/2014 budget cycle. It was not revised since that budget submission. Processes should be developed to periodically re-visit the original business case assumptions, especially in situations where the actual capital project start date is significantly later than the year it was placed and approved on the capital plan. Revisiting the business case will help identify any potential risks and barriers to achieving the goals and objectives of the project that may not have been previously identified, while validating whether the original project scope can still be delivered at that price.

One of the key success factors in delivering capital projects on time and on budget it is to minimize the number of changes required over the project life-cycle. When changes to scope are still being discussed and then approved after the bid and procurement phase has begun, it is almost certain that one or more of the project objectives of scope, cost, schedule and quality will suffer.

For Fire Station 7-4, a decision was made to add an additional apparatus bay and mezzanine, contributing to an overall increase in area from 9,300 square feet to 10,300 square feet. A formal business case was never submitted justifying the need to make this change.

From a project risk management perspective, management needs to establish risk based criteria identifying where and when scope changes may be warranted. This includes establishing process to evaluate how new information may impact the goals and objectives of the originally approved project and whether it is still feasible to move forward with the existing scope and budget, whether the project scope and budget needs be amended, or whether the project should be deferred or cancelled.

Vendor performance management is the fundamental aspect of contract management, ensuring that vendors provide the goods, services and construction in accordance with the agreed terms and conditions. The ability to measure the vendor's performance and to provide feedback is critical to successful contract management and vendor development. By not following these vendor management principles, the City runs the risk of reentering into a contractual relationship with a contractor that has not been able to meet past performance expectations.

The Ontario General Contractors Association (OGCA) recommends that the selection of any evaluation committee should be carefully considered and include members who have the necessary experience and technical information to properly evaluate the proponent's submission. Ensuring that the evaluation committee is made up of subject matter experts with a deep understanding of the specific work to be performed mitigates the risk of unqualified vendors being awarded a contract and/or potential litigation.

Internal Audit will follow up on the status of outstanding Management Action Plans related to this audit and will report the status to the appropriate Committee.

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BACKGROUND

Capital projects are generally funded, planned and executed as individual, discrete projects. Four objectives which are common to every construction project are: scope, cost, schedule and quality. The primary focus of project management is to plan and execute a project in such a manner as to maximize the ability to meet those four primary project objectives.

In 2013, the Project Management Institute (PMI) published the Construction Extension for the Project Management Body of Knowledge (PMBOK¹) in recognition of the unique attributes that are specific to the construction industry. The purpose of PMBOK is to improve project management by emphasizing methods and techniques that are unique to construction project management. Infrastructure Delivery have developed their own framework and manual that aligns with many of the PMI and PMBOK principles.

Some of the reasons why construction projects do not meet their objectives is that they are often saddled with poor communication protocols and inadequate controls around scope change management. Project management plans, even for relatively small construction projects, should exhibit a level of detail greater than might be deemed appropriate for other types of projects of equivalent cost and duration.

¹ *The PMBOK Guide provides project managers with guidelines and best practices, and defines everything from the project lifecycle to project management strategies and concepts. The PMBOK Guide goes into detail on the various project management processes that interact and overlap throughout a project's lifecycle.*

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OBJECTIVES AND SCOPE

The objective of the audit was to evaluate the effectiveness of construction management policies and procedures related to the fiscal, operational, and administrative controls over construction activities, including project scope, cost, schedule and quality.

Based on consultations with management, the construction of Fire Station #7-4 was selected for the audit. The single-story, LEED certified fire station is in Kleinburg and will include apparatus bays, ancillary offices and provide living quarters for the fire crew on shift. Construction of the fire station is expected to start in the spring of 2018, with an expected occupancy of August 2019.

Auditing a construction project from beginning to end can provide added assurance, identify problems as they arise, and help improve outcomes. Since the scope of the audit will encompass the complete lifecycle of the project, audit reports will be issued after the completion of the following project phases:

- Planning and Design, and Bid and Procurement Phases (Phase 1).
- Construction Phase (Phase 2).
- Close Out Phase (Phase 3).

Phase 1 included a review of:

- Governance and project management framework.
- Awarding architectural contract.
- Planning, budgeting and architectural programming.
- Qualifying contractors and awarding the construction contract.
- Performance and monitoring.

Auditor and Author: Mike Petrilli, CPA, CGA, CIA

Director: Kevin Shapiro CIA, CFE, CRMA

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DETAILED REPORT

1. *Establish a Standardized Project Management Framework*

Project management has evolved to include a vast array of best practice frameworks and methodologies (e.g. PMBOK, Six Sigma, Waterfall). A structured project management framework is essential for managing cost, schedule and performance risks. For projects to be developed efficiently, stakeholders must understand their roles and responsibilities and that of the other stakeholders, so everyone's expectations, accountabilities, and probable courses of action are predictable and can be relied upon.

A strong Project Management Office underpins the project delivery mechanisms by ensuring that business change in an organization is managed in a controlled way. Typically, Project Management Offices provide:

- **Governance:** ensuring roles are clearly defined and decisions are based on the right information. The governance role can also include developing project and program structures and ensuring accountability.
- **Transparency:** providing information with a single source of the truth. Information should be relevant and accurate to support effective decision-making.
- **Reusability:** stopping project teams from reinventing the wheel by being a central point for lessons learned, templates and best practice.
- **Delivery support:** making it easier for project teams to successfully complete their tasks by reducing bureaucracy, providing training, mentoring and quality assurance.
- **Traceability:** providing the function for managing documentation, project history and organizational knowledge.

There are numerous other project stakeholders in capital construction projects, including:

PROJECT STAKEHOLDER	TYPICAL POSITION	TYPICAL RESPONSIBILITY
Project Sponsor	Manager, Design Construction Infrastructure Delivery	<ul style="list-style-type: none">• Representative of Infrastructure Delivery (Buildings) Department.• Allocates resources for the project.• Responsible for communication to appropriate Stakeholders and Senior Management.
Project Manager	Project Manager Infrastructure Delivery	<ul style="list-style-type: none">• Project lead and main point of contact for the Project Team.• Manage all day-to-day project management activities and project needs.
Product Owner	Manager Facility Maintenance Services	<ul style="list-style-type: none">• Project authority for Facility Maintenance Services Department.• Participates in defining the scope of work and ongoing decision making for the project.• Final approval of scope related to overall maintenance, operations and Vaughan facilities.

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PROJECT STAKEHOLDER	TYPICAL POSITION	TYPICAL RESPONSIBILITY
Tenant/Service Provider	City Management Staff	<ul style="list-style-type: none">• Project authority for the department.• Participates in defining the scope of work and decision making for the project.• Final approval of items related to the department's functional requirements.
Architect	Architecture and Engineering Manager	<ul style="list-style-type: none">• Responsible for design and construction drawings.• Provide clarification about the design and specifications by responding to RFI's (Request for Information) and participate in evaluating and designing changes.• Maybe asked to act as consultant to administer project.
Consultant	Prime Consultant	<ul style="list-style-type: none">• Provide design services per the Request for Proposal.• Manage all day-to-day project needs related to design.• Responsible for construction contract administration, including: certification of payment, deficiency review.
Contractor	Construction Project Manager	<ul style="list-style-type: none">• Team lead and main point of contact for the General Contractor.• Manage all day-to-day project needs related to Construction, including sub-contractors.• Responsible for communication, including: construction meeting minutes, construction schedule.
Sub-Contractor	Sub-Contractor Lead/Project Manager	<ul style="list-style-type: none">• The general contractor hires and pays subcontractors, to perform portions of the construction work, such as plumbing, electrical, roofing or heating and ventilation.• Accurately estimate the charge for working on the project.• Form agreements with the contractor, not with the customer.

The City does not have a robust capital project management governance framework in place. As a result, project management structure, roles and responsibilities are not clearly defined or understood.

The audit noted the following:

- In 2016, the City established the Corporate Project Management Office (CPMO). Although they provide project management methodology and supporting tools to educate staff, our review of their roles and responsibilities and organizational placement does not reflect best practice. They have not been mandated to be actively involved in the City's capital projects and only get involved on a consultative basis as requested.
- The Project Sponsor has not been clearly defined.

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- As the Project Manager, Infrastructure Delivery was not consulted on the initial project cost estimates and is not always acting as the main point of contact for the Contractor.
- As the Product Owner, Facility Maintenance Services is not being fully engaged in the design and development of this project and not consistently participating in defining the scope of work and ongoing decision making for the project.
- The Tenant/Service Provider is assuming roles and responsibilities that should be the responsibility of the Project Manager or Product Owner. Examples include communicating directly with the Architect and Contractors, and attempting to change the construction schedule after the Architect was hired.

Having an effective project management governance structure and lines of authority prevents unnecessary conflict, clarifies roles and responsibilities and helps ensure that services are effectively delivered to residents. A clearly defined hierarchy creates a path of accountability for every project related activity.

Recommendations

We recommend that management formally adopt a city-wide project management framework that will be a driver to set predetermined goals, improve outcomes and strengthen project management governance.

Management Action Plan

Management agrees with the Internal Audit recommendations.

The Corporate Project Management Office (CPMO) will develop and implement a common project management framework and a methodology for monitoring adoption on City projects. This will include:

- Increase the mandate of the CPMO
- Establish scalability in the framework to streamline execution of small, low risk projects and diligently manage large, high risk projects
- Create consistency in project planning and executing
- Increase control and oversight of project scope, schedule, cost and risks

Completion of this action is anticipated Q3-2019.

Subsequent phases in the maturing of the Corporate Project Management Office, may include:

- Create consistency in business case development that will allow for improved decision making on project investments
- Develop a methodology for prioritizing and programming capital projects
- Create and maintain common project management systems, including technology integration
- Promote education and training of project delivery staff

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- Act as the Centre of Excellence for Project Management within the City
- Periodically review individual project delivery to identify opportunities for continuous improvement

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2. *Enhance the Project Management Procedures Manual*

In the absence of a city-wide project management framework, Infrastructure Delivery developed their own framework and procedures manual. Although the manual adequately integrates many of the PMBOK knowledge areas, improvements are required to better comply with the key PMBOK standards:

- The concept of formal Phase Gates has not been discussed in the manual². Adding a Phase Gate approach to the project management framework would allow for logical points of review between project phases or milestones.
- The Infrastructure Delivery Department uses a class design cost process for estimating costs. However, this process has not been described in the manual. Capital project estimates can range significantly in their range of accuracy depending on the level of project definition completed prior to the formulation of the estimate. A lack of disclosure or consistency with a project cost estimate can lead to a misunderstanding about the level of precision associated with the budgeted estimate.
- The manual does not provide guidance on the development of a communication plan. Maintaining open, regular and accurate channels of communication with all the project stakeholders is vital to ensuring the smooth flow of instructions and sufficient warning of risks and changes to enable early assessment and preparation.
- The manual does not provide guidance on records management. This increases the risk of financial losses, litigation and project delays.
- The manual refers to a risk management plan, but does not provide guidance on how to develop and execute that plan. Having a comprehensive risk management plan helps ensure that high priority risks are effectively identified and managed.
- The manual does not describe a robust framework for formal contractor performance monitoring. A vendor performance framework will minimize the contract risks linked to time, quality, schedule and cost, delays in execution of the work and payment to the vendor.

Recommendations

Until the recommendation in the first audit finding is implemented, Infrastructure Delivery should up-date the Project Management and Procedures Manual to better comply with the PMBOK project management practice guidelines.

² A project following a phase-gate process is divided into distinct stages or phases, separated by decision points or gates. At each gate, a continuation decision is made on forecasts and information available at the time, including the business case, risk analysis, and availability of necessary resources.

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Management Action Plan

Management agrees with the Internal Audit recommendations.

Prior to the formation of the Corporate Project Management Office (CPMO), the Engineering Services department (now Infrastructure Delivery) recognized the importance of aligning with the PMI and PMBOK principles and developed the Project Management and Procedures Manual (PMPM) in May 2012. The PMPM has received minor updates and has assisted Infrastructure Delivery staff to deliver the assigned projects in a consistent manner, with a goal of on-time and on-budget.

Prior to this audit report, both the CPMO and the Infrastructure Delivery Business Plans for 2018 identified a comprehensive review and update of the PMPM as objectives to be completed. Clarifying roles and responsibilities as well as overall communication with the various stakeholders, including but not limited to Transportation Services, Parks and Forestry Operations, Environmental Services, Facility Maintenance Services, Vaughan Fire and Rescue Services, Recreation Services and Vaughan Public Libraries has also been initiated to improve overall project delivery. The updates will be reflected in the PMPM.

In addition to the updates to the PMPM, change management practices will be utilized to continue changing the culture in the City. We expect to complete this by Q2-2019.

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3. Enhance the Budgeting and Estimation Process for Capital Projects

All Ontario municipalities are mandated through the Municipal Act to prepare a balanced budget annually. The budget is meant to outline financial information on all approved and legislated municipal initiatives, programs and services, including their associated funding requirements. The City's budgeting process allows for annual revisions of capital budgets based on changes in schedule, scope or costs of projects.

Important benefits of improving the capital budgeting process include a better understanding of strategic and project goals, more coordinated support for those goals, and an improved ability to respond effectively to changing requirements. This includes:

- Ensuring that subject matter experts are consulted at the inception of the project. The Office of Financial Management (OFM) report³ on best management practices recommends that a predesign study be completed at project initiation. This study should provide a clear, accurate and specific understanding of the program needs and estimated costs, including an analysis of alternatives.
- Capital projects could be planned many years in advance of actual project execution. The annual budgeting process should ensure that capital budget estimates are current and provide City management with the financial input need to make informed decisions.
- Significant scope amendments should be supported with a comprehensive business case to justify and outline the rationale for the change. The Project Management Institute (PMI) states that without a business case, "an organization has no clear basis to prioritize projects, for establishing what is important. Without a business case and some organization-wide agreed measure of "value" there is no means of determining which projects are important, and which are less so..."
- The purpose of budgetary control is to ensure that the mechanism exists to compare actual results with approved budgeted values. If the expense categories are treated as a pool of funds, then the effectiveness of the budgetary control is diminished.

The following issues were identified:

- The capital budget for this project was originally developed in 2009 and updated in the 2013/2014 budget cycle. It was not revised since that budget submission.
- The Project Manager, who has the technical expertise to develop accurate budget estimates, was not consulted when the original budget submission was developed.
- Significant scope amendments were made to the project without the development of a formal business case.

³ Office of Financial Management, *BEST MANAGEMENT PRACTICES FOR CAPITAL PROJECTS, Final Report January 2008*

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- Budget amounts for construction costs are treated as a pool of available funds. Any positive variances to estimated costs are put back into the pool as available funds.
- The budget did not specifically isolate contingency amounts. Although Infrastructure Delivery tracks contingency separately, contingency was not itemized in the City budget for this project.
- All seven bids received from the pre-qualified contractors exceeded budget. At the February 5, 2018 Finance, Administration & Audit Committee, a \$1,881,000 increase in the budget for this project was recommended. The budget increase was approved by Council on February 21, 2018.

Effective budgeting and forecasting are vital components of sound risk management. The capital budgeting process establishes specific accountability and measurability. The effectiveness of the budgeting process is diluted if expense categories are not current, appropriately categorized and monitored.

Recommendations

We recommend that management:

- Review all capital funding proposals on an annual basis to ensure that they represent current funding requirements.
- Develop robust business cases for significant capital projects that provide scrutiny, ensuring that what is proposed is:
 - Affordable, needed and viable in the delivery of public services.
 - Offering value for money.
 - Reconciles and supports the City's financial budget.
 - Clearly addresses risks, opportunities and threats in executing the project.
- Savings from key project spending categories should be banked and not reallocated to the project pool.
- Contingency amounts should be isolated and tracked separately for each capital project.

Management Action Plan

Management agrees with the Internal Audit recommendations.

As part of the 2019 Budget, Infrastructure Delivery will ensure that all capital funding proposals have been reviewed and updated to reflect current funding requirements. In addition, prior to submission of a significant, new capital project, a detailed business case will be developed with the appropriate stakeholders. Infrastructure Delivery, in consultation with CPMO, will develop a business case template to provide a level of consistency in early

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project planning activities, that will also identify the proposed scope, schedule, cost and risks. We will complete this by Q1-2019.

This interim solution will be utilized until the recommendation in the first audit finding is implemented.

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4. Enhance Vendor Performance Management and the Pre-qualification Process

The City used a vendor prequalification process to evaluate potential contractors to construct Fire Station 7-4. The purpose of prequalification is to ensure that the proponents invited to bid can deliver the project specific requirements. The City, through pre-determined criteria, eliminates candidates who cannot demonstrate that they have the necessary financial capacity, technical expertise, managerial ability and relevant experience for the project at hand. Only those respondents who have been pre-qualified will be invited to submit a bid in response to a subsequent tender process related to the project.

The general contractor for Fire Station 7-3 submitted a prequalification application for Fire Station 7-4. Based on the prequalification criteria, this contractor prequalified. However, the audit was informed that this contractor experienced financial difficulties during the construction of Fire Station 7-3 and had not paid some of their subcontractors on a timely basis. Further, the contractor was slow in completing some of the warranty work. As a result, Infrastructure Delivery spent more time than necessary monitoring this contractor during the construction phase. Although prequalification evaluation criteria were developed for Fire Station 7-4, it was ineffective in highlighting some of the issues experienced with this particular contractor on a similar project.

To help effectively address these types of issues, the City developed a draft Vendor Performance Evaluation procedure. The procedure aligns with the procurement modernization strategy of improving the integrity of the procurement process through open, fair and transparent practices. Where appropriate, this procedure would suspend vendors from participating in future competitive procurement process. However, this procedure has not yet been approved and implemented at the City.

Vendor performance management is the fundamental aspect of contract management, ensuring that vendors provide the goods, services and construction in accordance with the agreed terms and conditions. The ability to measure the vendor performance and to provide feedback is critical to successful contract management and vendor development. By not following these vendor management principles, the City runs the risk of reentering into a contractual relationship with a contractor that has not been able to meet past performance expectations.

Recommendations

We recommend that management implement the Vendor Performance Evaluation procedure to pro-actively evaluate and improve the performance of all suppliers, vendors and contractors that are sourced by the City.

Management Action Plan

Management agrees with the Internal Audit recommendations.

A pilot program is currently underway to assess the Vendor Performance Evaluation procedure to pro-actively evaluate and improve the performance of all suppliers, vendors

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and contractors that are sourced by the City. We expect to complete the pilot program by Q2-2019.

The Vendor Performance Evaluations procedure (PP-14) and the Vendor Performance reports for Consultants and Construction Contractors have been developed to support the Vendor Performance Evaluation program. These will be rolled out on a corporate wide basis upon successful completion of the pilot program.

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5. Ensure the Formation and Composition of Proposal Evaluation Committees is Appropriate

The Evaluation Committee ordinarily consists of three to five members that bring together the expertise necessary to evaluate bid proposals or Requests for Pre-Qualification (RFPQ) documentation.

The Ontario General Contractors Association (OGCA) recommends that the selection of any evaluation committee should be carefully considered and include members who have the necessary experience and technical information to properly evaluate the Proponent's submission⁴. The selection of an architect and contractor is technically focused, and generally the composition of an evaluation committee should include individuals with the technical competency to evaluate the abilities of the respondents.

The evaluation committee should also be made up of members that are similar in organizational placement. This reduces the risk of individuals having or being perceived to have undue influence over the evaluation process. Committee members are frequently required to devote considerable time to developing requirements, responding to bid clarifications, reading proposals, attending vendor presentations, scoring proposals, and meeting to discuss proposals with other committee members. This level of commitment may be difficult for members of senior management.

Although we found nothing that would invalidate the final award of the contracts, we noted that the composition of the evaluation committees for the architect and the contractor included two senior management representatives' from VFRS. The evaluation committee for the architect also included the former Manager of Recreation Services, who had only recently moved into a short-term role in the Facility Maintenance department, and would not have had the technical expertise to appropriately represent the department.

Ensuring that the evaluation committee is made up of subject matter experts with a deep understanding of the specific work to be performed mitigates the risk of unqualified vendors being awarded a contract and/or potential litigation.

Recommendations

We recommend that management enhance guidelines regarding the composition of evaluation committees to ensure:

- Members have the necessary experience and technical expertise to properly evaluate the submission.
- Ensure evaluation committees are made up of members that are similar in organizational placement.

⁴ Ontario General Contractors Association, *A Guide to Prequalification of Contractors (Section 6.3 Evaluation Process)*

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Management Action Plan

Management agrees with the Internal Audit recommendations.

Procurement Procedure PP-02 Requests for Proposals - provides guidance and outlines the framework to be followed for Requests for Proposals issued by the City. It also defines the roles, responsibilities and accountabilities of Procurement Services and Client Departments. The procedure has been revised to incorporate enhanced guidelines regarding the composition of evaluation committees and has been included in the procurement training program. This includes criteria to ensure that members have the necessary experience and technical expertise to properly evaluate submissions and are made up of members that are similar in organizational placement.

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6. *Develop General Design and Construction Standards for Reoccurring Projects*

The City has not developed general design and construction standards for reoccurring building infrastructure projects such as fire stations, community centres and libraries. These types of specifications form the basis of defining the project scope of work, the preliminary budget costing and the baseline level design requirements for the architect (e.g. establishing space functionality, signage, accessibility and usability standards).

When the International Organization for Standardization⁵ (ISO) developed their own international construction standards, they rationalized the need for such standards by stating that: "Standards make the construction industry more efficient and effective...standards solve problems and provide solutions in all stages of the construction development process."

Such standards:

- Promote consistency and quality in the final product delivery.
- Ensure the development of municipal assets and systems that are acceptable to the City for operation and maintenance.
- Provide a consolidated statement of City policies and expectations regarding the standard of municipal building requirements to all stakeholders.
- Identify those design criteria that the City considers to be the minimum standards acceptable for typical conditions.
- Identify the City's preference and requirements when there are alternative technical options available to address a particular servicing issue.

Further, the architects that bid on this project were asked to submit a prime design consultant qualification form⁶. The form requires the architects to provide details, including construction cost, of similar projects in which the firm acted as the prime design consultant. We reviewed the construction cost per square foot of 22 Southern Ontario Fire Station projects built from 2008 to 2017⁷ and found the following:

Analysis	Cost per Square Foot⁸
Average Cost of all 22 Projects	\$375.98
Average Cost of Projects Built after 2014	\$410.09
Average Cost of LEED Projects	\$364.22
Avg. Cost of Fire Hall only Projects (e.g. No Paramedic Services)	\$349.73
Construction Cost Vaughan Fire Station 7-4⁸	\$511.84

⁵ ISO is the world's largest developer of voluntary International Standards providing benefits for business, government and society through a portfolio of more than 19,400 standards.

⁶ Request for Proposal: RFP 16-361 Form A.

⁷ Construction costs were annualized at a 2.16% Inflation rate.

⁸ Fire Station 7-4: \$5,250,500/10,258 sq. ft. = \$511.84

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The cost of building Fire Station 7-4 seem to be substantially higher per square foot, compared to similar projects built in Southern Ontario. This variance is further inflated by the fact that the total proposed square footage of 10,258 for Fire Station 7-4 includes a mezzanine (which was added later and not part of the original specifications). Although the mezzanine adds square footage and cost to the project, building a mezzanine generally costs less per square foot than what the cost would have been if added to the footprint of the building.

Recommendations

We recommend that management:

- Develop general construction standards for reoccurring projects for use by staff, engineering consultants and contractors when designing and constructing Vaughan's building infrastructure projects.
- The City's general design and construction standards should consider a detailed jurisdictional scan to ensure that the City is aware of cost, practices and standards that may be used in other municipalities to ensure that we are optimizing value for money.

Management Action Plan

Management agrees with the Internal Audit recommendations.

Construction standards, specifications and design criteria have been developed for the City's linear infrastructure, including (but not limited to) roads, watermains, sanitary and storm sewers. The standards are shared with developers, contractors and consultants to ensure consistency in the infrastructure being designed and constructed for the City. A major review and update of the standards was recently completed, but they can be considered a "living" document given the extensive range of assets that it provides support for.

However, general design and construction standards do not exist for municipal buildings, such as fire stations, community centres and libraries. Infrastructure Delivery will initiate a project to undertake the task of creating such standards, that will be submitted for consideration as part of the 2019 Budget deliberation process. Representatives from Facility Maintenance Services, Recreation Services, Vaughan Fire and Rescue Services and Vaughan Public Libraries will be asked to participate on the project as subject matter experts (in their respective areas). Pending approval within the 2019 Capital Budget, 24-36 months will be required to complete the project.

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7. *Develop Criteria for Engaging a Fairness Monitor*

The objective of the procurement modernization program included making enhancements to existing procurement policy sections and developing new sections to address actual or perceived gaps in the control framework. This control framework includes the use of a Fairness Monitor as an independent third party to observe the procurement process. However, the criteria regarding the use of a Fairness Monitor has not been clearly defined.

In the case of Fire Station 7-4, four architectural firms were evaluated for the design and construction management. Two proponents had very close evaluation scores and were subsequently invited to an interview to clarify their proposals. Once an architectural firm was selected, it became evident that the losing proponent was dissatisfied with the process and the ultimate outcome.

In such a case, it may have been beneficial to engage a Fairness Monitor to provide added assurance to the City, Vendors and any external observers. Providing criteria for staff would facilitate the decision process for engaging Fairness Monitor.

A Fairness Monitor can comment on all or a number of elements of the procurement process, including:

- Defining the project
- Project announcement and Request for expression of interest
- Request for qualification
- Request for proposal
- Conflicts of interest and confidentiality
- Proponent communications
- Proponent evaluation

The use of an independent Fairness Monitor helps ensure that objectivity, fairness and transparency has been maintained and can potentially curtail challenges to the bid process.

Recommendations

We recommend that management develop criteria for engaging a Fairness Monitor.

Management Action Plan

Management agrees with the Internal Audit recommendations.

Management recognizes that ongoing review of policies, procedures, and process is an effective means of promoting a continuous improvement governance culture. In light of Council approved procurement policy, staff developed Procurement Procedure, PP-06 Engaging a Fairness Monitor for a Procurement. The objective of the procedure is to establish the prerequisite criteria for engaging a Fairness Monitor. In cases of unique or complex procurement transactions, this process will provide independent assurance that procurements are conducted in a fair, open and transparent manner.