

# City of Mississauga Internal Audit Report

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TRANSPORTATION & WORKS DEPARTMENT  
INFRASTRUCTURE PLANNING & ENGINEERING SERVICES DIVISION  
CAPITAL WORKS DELIVERY SECTION  
CAPITAL WORKS PROJECT MANAGEMENT AUDIT

April 19, 2022

City Manager's Department  
Internal Audit Division

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INFRASTRUCTURE PLANNING & ENGINEERING  
SERVICES DIVISION  
CAPITAL WORKS DELIVERY SECTION  
CAPITAL WORKS PROJECT MANAGEMENT AUDIT**

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**Transportation & Works Department  
Infrastructure Planning & Engineering Services Division  
Capital Works Delivery Section  
Capital Works Project Management Audit**

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## **BACKGROUND**

The Capital Works Delivery Section of the Infrastructure Planning & Engineering Division of the Transportation & Works Department is responsible for the design, construction and rehabilitation of Mississauga roadways, bridges, watercourses, storm detention ponds and other storm water drainage infrastructure. The City works closely with the Region of Peel, Ministry of Transportation and Alectra to complete construction projects.

The City's approved capital budget was approximately \$269.3 million in 2020 and \$292.5 million in 2021; the Capital Works Delivery Section accounts for 23.2% (i.e. \$62.6 million) and 17.7% (i.e. \$51.8 million) of the capital budget, respectively. The lifecycle of these projects ranges from one to four years and supports programs such as Active Transportation, Bridge & Structure Renewal, Major Road Construction, Noise Wall Infrastructure, Roadway Rehabilitation, Stormwater Management Facilities and Flood Relief Works, and Watercourse Erosion Control.

The section operates under the Director, Infrastructure Planning & Engineering Services and is led by the Manager, Capital Works Delivery. There are 10 Project Managers who oversee the various capital projects, 4 Engineering Specialists and 2 Contract Assistants.

The last audit performed in this area was in 2016, which looked at Transportation & Works' contract administration processes and resulted in 6 recommendations that have all been resolved.

This review was selected as part of the Internal Audit Work Plan for 2021-2023, as approved by the Audit Committee.

## **SCOPE**

The audit focused on the management of construction projects, including compliance with terms and conditions of the contract, cost management (e.g. budgeting, contingency planning and change orders), time management, and financial processes including progress payments, holdbacks, recoveries, and accuracy of payments. The period of analysis included projects that were in progress or completed (i.e. substantially completed or under warranty) during 2020 and 2021.

### **Out of scope**

This audit did not review pre- and post-construction activities including establishment of estimates for budget requests and tendering of projects, vendor selection process (e.g.

requirements under the Purchasing By-law, minimum surety bonds and liability insurance, etc.) and management of warranties. Furthermore, risks and issues that are inherent to specific projects, such as compliance with conservation authority legislation, resident complaints and pending/potential claims, liens or lawsuits were excluded from the scope and may be part of future project-specific audits.

## **OBJECTIVES**

The audit was performed in accordance with the International Standards for the Professional Practice of Internal Auditing. The audit focused on the review of the adequacy of internal controls that mitigate relevant risks related to the following business objectives:

- A) To ensure that projects are completed to current City and industry construction standards, and that the stages of projects are fully executed in accordance with the Construction Act,
- B) To deliver capital projects on schedule and within budget, and
- C) To ensure compliance with City By-laws and policies.

## **SUMMARY OF OBSERVATIONS**

Based on the audit work performed, the process for project management in the Capital Works Unit is well-established and follows some best practices including tracking of Project Managers' time spent on projects and evaluation of contingency reserves based upon potential activity-related requirements. Additionally, routine progress meetings are held during the course of the projects to discuss incident management and provide reminders to vendors regarding health and safety protocols, and adequate internal compliance reviews are completed prior to the release of holdback funds.

We noted some areas that required stronger controls related to formal justification of change orders and monitoring of internal recoverables. Another area of concern, which staff have made efforts to improve recently, relates to the centralization of project documentation and to reporting and monitoring of project timelines and budgets.

The main observations and recommendations are summarized below. A detailed list of observations and recommendations was provided to management, along with a separate list of lower risk opportunities for improvement. Appendix A outlines the detailed recommendations and the action plans proposed by management.

### **Provide appropriate justification and pre-approval for change orders**

The monitoring of change orders was generally well-controlled and followed a number of best practices including a control schedule/log of all change orders, a written work description, pre-numbering in a sequential order of issuance by date, costs remaining within contract terms, and reviews to ensure the orders are free from improper pricing, mathematical and logic errors.

However, certain aspects required more explicit documentation, specifically those related to the pre-approval and justification of additional work. Without this information, it was not possible to conclude, for most of the projects in our sample, whether the reason for the use of contingencies was a result of errors, omissions, additional required work, or work that should have been part of another project. Management advised us that the Capital Works Manager is usually aware of the extra work, as discussions with the Project Manager and contractor would have occurred prior to the issuance of his authorization for payment. Still, the lack of formal justification could result in less than optimal decision-making with regard to the need and extent of the changes, as well as hinder the ability to respond to inquiries and complaints in the future.

### **Enhance the monitoring of project recoverables**

The Capital Works Section has built a robust process for monitoring progress payments and contingency spending as it relates to the main contract for the project. However, outside the main contract, there may be other additional work required to complete the project such as utility relocates, removal/planting of trees, etc. These additional costs or chargebacks were tracked outside the shared drive, and did not include internal recoverables. Additionally, a formal reconciliation process was not established to ensure all such transactions were accurately captured within the project's budget.

In our sample, we noted four instances where recoveries were not processed or not processed in a timely manner. Without a formal and centralized tracking mechanism, the reconciliation of projects would be more time consuming, prone to errors, or may miss expenses/recoverables for an indefinite period of time. While no indication of fraud was observed, the issue increases the risk that any potential fraud could go unnoticed.

### **Ensure data integrity and streamline project reporting process**

Project Managers take a considerable amount of time reporting on their projects' statuses through various avenues including Finance's Work-In-Progress (WIP) list, Capital Works Work Plan (CW WP), the tender schedule and team meetings. Project Managers could have up to 10 projects running concurrently that require updates. We noted information reported in the CW WP was incomplete or missing. Additionally, project statuses were manually updated and did not always accurately depict the project's budget and schedule (e.g. projects that were behind schedule were shown as on time).

In essence, all these reports contain similar information (e.g. budget vs. actual spends, target completion dates, narratives on possible delays, etc.) which provides an opportunity to streamline the reporting process by developing a central repository for the data. This would enhance data consistency and integrity, and ensure that report-specific requirements are downloaded from the same source.

Management advised that they have started developing a SharePoint site to host most of this information as of January 2022, and we offered some suggestions to improve the reporting/tracking system such as the use of formulas and macros to pull data directly from the sources to ensure accuracy.

### **Develop documentation standards and store all documents in a central location**

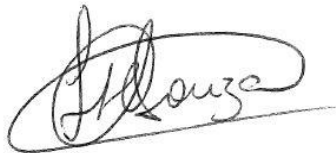
Our review of the sampled Capital Works projects showed that the project documentation repository (ProjectWise) was not being used consistently by the Project Managers to store the documents. This system was introduced to Capital Works in mid-2020 to function as a centralized repository to secure and maintain project documentation. Management advised us that ProjectWise's framework/design did not align with their processes, impairing widespread adoption. Project Managers continued to use other repositories, including shared service area network drives and corporate email, to store documentation pertaining to the projects. The use of multiple platforms for documentation creates duplication and/or missing/incomplete documents, leaves room for errors and may hinder the City's ability to readily support its position in the event of a claim/lawsuit.

### **CONCLUSION**

The control environment in Capital Works needs some improvement, especially related to project documentation and reporting, monitoring of recoverables and justification for change orders, but is generally well-established in other key areas, such as management of costs and time, compliance reviews, and monitoring of project progress.

This audit resulted in 10 recommendations; 4 relate to operational and financial reporting, 3 deal with compliance with and clarification of corporate requirements, 2 with the safeguarding of assets and information, and 1 enhances the efficiency/effectiveness of the process.

Management has agreed and committed to completing 7 recommendations by August and December of this year, 2 by the end of 2023 and 1 by the end of 2024.




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**Transportation & Works Department  
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<b>Rec</b>	<b>Recommendation</b>	<b>Priority (H/M/L)</b>	<b>Comments/Status</b>	<b>Classification</b>
1	That a centralized tracking method be developed to help monitor internal and minor expenditures within a project.	H	<p>A spreadsheet for budgeted external recoveries and utility recoveries is now in place but will have to be put in a central location so it can be accessed easily by the manager and backup person.</p> <p>Target Due Date: August 31, 2022</p>	Operational Control and Financial Reporting
2	That a formalized reconciliation process for expenses outside the main contract be developed and completed on all projects, at minimum, upon substantial completion.	H	<p>Tracking of internal recoveries will be created to ensure that they are recorded and followed up.</p> <p>Recoveries and expenses will be reviewed by the Project Manager (PM) with Finance on a regular basis to ensure that they are legitimate expenses and allocated accordingly through journal vouchers by Finance. SAP training will be provided by the Business Advisor to the PM's.</p> <p>Target Due Date: December 31, 2022</p>	Operational Control and Financial Reporting
3	That a divisional directive be established and document, through a guideline, the criteria for setting up project numbers (i.e. sibling accounts) and training be provided to relevant staff and enforced post-implementation.	H	<p>Creating sibling accounts is the responsibility of the budget owner based on how he/she wants to track the project costs. A Divisional guideline or SOP will be developed to outline the criteria for setting up project numbers (i.e. sibling accounts) and</p>	Compliance with and Clarification of Corporate Requirements



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			<p>training will be provided to staff, but it will still be the prerogative of the budget owners to choose whether to use sibling accounts based on their requirements.</p> <p>Target Due Date: December 31, 2022</p>	
4	That documentation standards be developed and training be provided to the Project Managers. This may include, but not be limited to, minimum documentation requirements, mapping of documentation to project folders, and naming conventions for files.	H	<p>The Business Advisor is currently working with Records Management to develop a centralized document repository on SharePoint.</p> <p>Project Managers will be encouraged to use relevant folders and Capital Works will try to simplify the document storage process in ProjectWise.</p> <p>In the meantime, the folders in the network drive will be reviewed and will be set up with a consistent naming convention.</p> <p>Target Due Date: December 31, 2024</p>	Safeguarding of Assets and Information
5	That the central repository for documentation be adopted by everyone, updated on a regular basis and enforced by management.	H	<p>For now, the network drive is the central repository and the folders will be reviewed and will be set up with a consistent naming convention.</p> <p>Target Due Date: December 31, 2022</p>	Safeguarding of Assets and Information

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6	That the Contract Cost Management Procedures be updated to include the need to document/reference applicable supporting documentation to provide evidence of pre-approval of work completed and clear justification for change orders. Additionally, training and enforcement be completed, as needed.	M	The Project Managers will be informed that a justification for the change orders must be explicitly written on the request form and to provide appropriate backup and evidence of pre-approval.  Target Due Date: December 31, 2022	Compliance with and Clarification of Corporate Requirements
7	That an electronic signature be used to authorize the approval for payment of the change orders as prescribed in the Electronic Signatures Corporate Policy and Procedures.	M	An electronic signature will be set up for the Capital Works Manager.  Target Due Date: August 31, 2022	Compliance with and Clarification of Corporate Requirements
8	That management streamline the project reporting process by gathering information in a central repository.	H	The Business Advisor is currently working with Records Management to develop a centralized document repository on Sharepoint. It will take about two years to get this fully implemented.  The tender schedule will be placed in a centralized folder in the network Drive.  Target Due Date: December 31, 2023	Efficiency/Effectiveness
9	That the Capital Works Work Plan be updated to ensure data accuracy and include additional information that may be valuable to management for decision-making.	H	The Business Advisor will work on improving the Work Plan site to provide consistencies, where possible.  Target Due Date: December 31, 2023	Operational Control and Financial Reporting

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10	That purchase orders only remain open for the timeframe prescribed by Legal (i.e. for the duration of the two-year warranty period after the completion of the project), and any extension will follow the Procurement By-law.	M	<p>The duration of the purchase orders will be changed from five years from the project start date to two years after the estimated project completion date to coincide with the duration of the warranty period and the release of all the warranty holdbacks. Any extension will follow the Procurement By-law. An SOP will be created by the Business Advisor to provide clarity to this new process.</p> <p>Target Due Date: December 31, 2022</p>	Operational Control and Financial Reporting
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