

City of Mississauga **Internal Audit Report**

CORPORATE SERVICES DEPARTMENT
INFORMATION TECHNOLOGY DIVISION
IT PROJECTS AUDIT

February 12, 2021

City Manager's Department
Internal Audit Division

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**Corporate Services Department
Information Technology Division
IT Projects Audit**

BACKGROUND

Currently at the City of Mississauga, Information Technology (IT) Projects are planned and executed by the Information Technology Division, in conjunction with the business units and at times broader stakeholders within the organization.

IT manages a sizeable collection of initiatives, of varied nature, type, size, budget, schedule, complexity, business value and strategic importance. These initiatives are classified into different categories, such as projects, work requests, system/hardware upgrades, hardware purchases, etc., each of which may have different requirements in terms of process, supporting documentation and governance.

The portfolio of projects derives mainly from the priorities identified in annual business plans, the IT Master Plan, operational plans, direction from Council and the Leadership Team and funding opportunities available from external sources. The Technology Roadmaps help the business and IT reach a consensus about needs and future developments, providing a mechanism to help forecast technology investments, and a framework to help plan and coordinate technology development and implementation.

There are approximately 250 non-union employees in the IT Division within the Corporate Services Department. The division is comprised of six sections which include Architecture and Innovation, City Portfolio, Digital Services, Enterprise Business Solutions, Infrastructure Services and Service Management.

Capital expenditures were around \$13.5M in 2018 and \$16.6M in 2019, while operating expenses totalled \$28.0M and \$29.7M respectively.

SCOPE AND OBJECTIVES

The audit examined the adequacy of processes and controls around the management of the IT Division's projects and portfolio, and their adequacy in mitigating the business risks identified in conjunction with management at the start of the review. Specifically, the objectives of the review included assessing if the existing process ensures that:

- There is alignment between business and IT in the initiation, execution, validation and testing of IT projects;
- IT projects follow the IT development lifecycle in accordance with IT policies, guidelines and the IT Plan;
- There is effective and efficient portfolio and project management oversight, reporting and administration, including approvals of material IT Projects by senior management; and,
- IT Solution readiness activity is being completed timely, accurately and effectively, and that all pertinent stakeholders are engaged in the associated processes.

The approach included an initial risk workshop with management, several interviews with the areas responsible for project and portfolio management, review of relevant policies, procedures, guidelines, roadmaps, project management documents and other relevant documentation, and a review of a sample of projects to assess conformity with the applicable methodology, accuracy in reporting and adherence to governance principles.

The sample of projects was taken from IT reports detailing projects completed in the years 2018 and 2019.

The scope did not include IT initiatives not categorized as IT projects (e.g. work requests, minor upgrades, etc.) or mixed projects that are led by other areas and have a minor IT component. As this review focused on the management of the portfolio, the scope also did not include a thorough review of individual projects and substantive testing of budgets, cost reporting or external reporting.

SUMMARY OF OBSERVATIONS

In general, IT provides thorough oversight on the projects under its direct responsibility, albeit certain processes are manual or scattered in several systems. While reporting is reasonable, IT would benefit from streamlining certain processes and implementing a single database to support the management of the various initiatives.

Our main observations relate to further clarifying and determining the level of documentation required for the various categories of IT initiatives, establishing a central database and system to manage, provide governance and oversight at the IT portfolio level, establishing a detailed time tracking tool to support resource and capacity management, and following a consistent methodology for capitalizing labour costs.

To improve and streamline the information, management advised that new controls (i.e. signed project charters with clearly defined governance structure for all projects, standardized progress reporting via the CPS Dashboard, implementing technical review boards, etc.) have been established. Internal Audit's sample focused on projects complete in 2018 and 2019, which were not subject to the new controls. While these appear to be positive steps, our recommendations are aimed at complementing them and continuously improving the governance and control processes.

A detailed list of observations and recommendations was provided to management and other applicable areas, along with a separate list of low-risk opportunities for improvement.

A summary of the observations and recommendations is described below. Appendix A outlines the detailed recommendations and the action plans proposed by management.

Establish a central system to provide management and oversight of all IT initiatives, and reinforce governance

Several separate processes exist to manage basic and critical information regarding IT initiatives (i.e. various versions of the Work Request system, IT Capital Works-in-Progress spreadsheet, Year-End IT Portfolio Report, etc.). While information is available in several

systems, a comprehensive central database of IT initiatives has not been implemented to capture and monitor information of the initiatives from inception to completion.

Furthermore, relevant process steps (i.e. checkpoints or milestones) that a project must achieve prior to moving to the next phase are not clearly defined and monitored, and are dependent on the experience and discretion of staff and managers.

Moving to a central portfolio management tool as a “one source of truth” for relevant information around the initiatives can provide management with increased ability to plan, review, analyze, monitor and manage the portfolio. Moreover, it can increase consistency and accuracy in reporting, and facilitate identifying trends and early recognition of issues and risks (i.e. use of time [triggering delays], resources [affecting productivity], budget [causing cost overruns], poor planning, execution of initiatives, etc.).

Formally document relevant processes and requirements for the different categories of IT initiatives

Internal Audit reviewed a sample of twelve (12) initiatives categorized as “projects” and found that four (4) were treated as a project internally, qualifying them for a more rigorous project management process; whereas the remaining eight (8) were categorized as other initiatives (i.e. work requests, upgrades, etc.). The documentation that exists does not consistently differentiate the various initiatives, allowing for interpretation around the process and the level of documentation required for each initiative.

Reinforce adherence to Project Management methodologies and standards

Internal Audit reviewed a sample of four (4) initiatives categorized as “projects” and noted that project management methodology was applied for the most part. IT is moving towards the agile methodology for projects, when deemed appropriate; however, Internal Audit noted standards related to agile methodology have not been defined at a divisional level. Management advised us that while the standards have not been defined, training in the methodology has been provided to a number of employees.

By not documenting standard methodologies (be they waterfall, agile or other), there is increased risk that critical steps/gates within an IT Project could be missed. Additionally, key stakeholders may not be sufficiently engaged throughout the process or in a timely manner; scope, rationale and business value may not be clearly defined and agreed to, and remediation and resource utilization may not be effective or efficient on projects.

Establish and implement a detailed time tracking tool for IT staff to support enhanced resource and capacity management

Currently, a process to track time spent by IT staff on each relevant project or other IT initiatives has not been implemented. Management indicated that time tracking is planned to be implemented for resources spending more than 70% of their time on capital projects for chargeback purposes. While it would be a positive development, time will not be tracked for resources who do not fall into that classification.

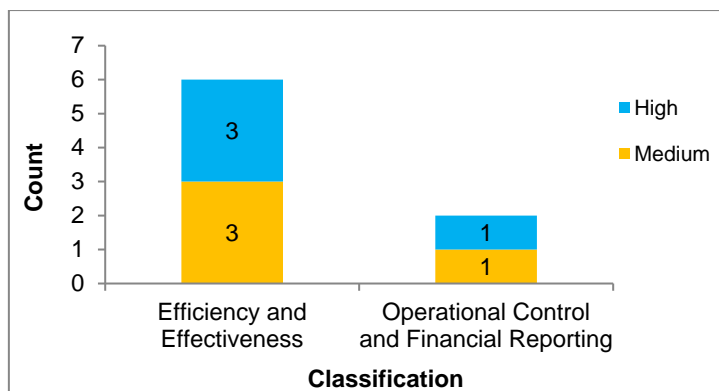
Measuring and monitoring time spent by City staff on each IT initiative could allow for accurate cost/capital allocation and be a powerful tool to increase accuracy of resource forecasting and efficiency of planning and scheduling projects. On the other hand, not accurately tracking time spent on individual initiatives can reduce the ability to forecast and schedule resources

appropriately, leading to reduced productivity, cost overruns and delays, and can result in incorrect allocation of costs per project.

CONCLUSION

The governance and control environment around the portfolio of IT projects is generally effective, but with concerns related to the formal definitions, requirements and scattered methods of control. While there are a number of manual and low-automation controls that compensate for those difficulties, a more defined and clearly communicated process would result in added efficiency and reduction of errors. Additionally, consistently tracking staff time and reflecting it in the cost and reporting processes can enhance resource and capacity management.

A total of eight (8) recommendations resulted from this audit. The table below summarizes the recommendations by classification and priority.



Details of the audit recommendations and management comments can be found in Appendix A.

Management has agreed to all eight (8) recommendations. One (1) will be completed by end of December 2021, two (2) will be completed by end of June 2022, and the remaining five (5) will be completed by March 2023.

Internal Audit would like to thank the Director, IT & CIO, IT Senior Managers, IT staff, and the Director, Finance & Treasurer for their time and assistance during the audit.

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Rec	Recommendation	Priority (H/M/L)	Comments/Status	Classification
1	That Information Technology develop processes/procedures/guidelines for portfolio and project management that apply to all sections within IT (i.e. definition of IT initiatives, process steps and level of documentation required for the various IT initiatives, etc.).	Medium	<p>Due to the size and complexity of the project portfolio, IT recognizes that there are inconsistencies with the application of processes, procedures, and guidelines across teams, and as such will:</p> <p>a) In the short term, develop a communication plan targeting project managers and project leaders to increase awareness of project and portfolio management expectations.</p> <p>To be completed by August 31, 2021</p> <p>b) In the long term, implement an integrated project portfolio management tool, which will be configured to reinforce the rules supporting defined processes, procedures, and guidelines.</p> <p>To be completed by March 31, 2023</p>	Efficiency and Effectiveness
2	That Information Technology clearly define the steps, controls and requirements of the methodology that will be required of each project, and formally provide guidance to its staff in the form of documented procedures, training and oversight, to ensure that all critical steps are being followed in a consistent and effective manner.	Medium	<p>IT will continue to evolve and implement process improvements at a pace that is suited to the maturity level of the division and will:</p> <p>a) In the short term, develop a communication plan targeting project practitioners to define and reinforce the mandatory steps/requirements throughout the lifecycle as well as required documentation for effective project control.</p> <p>To be completed by August 31, 2021</p> <p>b) In the long term, implement an integrated project portfolio management tool, which will be configured with business rules to reinforce project management best practices and</p>	Efficiency and Effectiveness

			prescribed methodologies.	
			To be completed by March 31, 2023	
3	That Information Technology establish a quality assurance review process (i.e. checkpoints, quality gates, etc.) at the project and portfolio levels, to ensure critical steps are performed and adequate documentation is developed for all IT projects.	Medium	<p>IT agrees with the recommendation of implementing additional quality assurance reviews throughout the project management lifecycle.</p> <p>IT will:</p> <p>a) In the short term, develop a communication plan for project practitioners and IT portfolio managers describing quality control measures for project and portfolio management.</p> <p>To be completed by August 31, 2021</p> <p>b) In the short term, configure the CPS Project Portfolio reporting Dashboard with quality control rules and reports.</p> <p>To be completed by August 31, 2021</p> <p>c) In the long term, implement an integrated project portfolio management tool, configured with quality control rules to ensure adherence to prescribed methodologies.</p> <p>To be completed by March 31, 2023</p>	Efficiency and Effectiveness
4	That Information Technology adopt a central portfolio management tool to capture vital information from inception to completion (as determined for each type of initiative) and to function as the “single source of truth” for information related to all IT initiatives, both at a portfolio and project management level. Consideration should be given to including information such as: name, scope, owner, sponsor, work description, BR, status, integration,	High	<p>IT agrees with the recommendation and seeks to procure, configure and implement an integrated project portfolio management tool.</p> <p>To be completed by March 31, 2023</p>	Efficiency and Effectiveness

	baseline vs. actual, work type (project, work request, upgrade, etc.), funding source (capital, operating), budget (initial, additional, actual, returned), timelines (milestones, baseline & actual), resources (skill set required, duration, etc.), risks and dependencies.			
5	That Information Technology adapt their reports (i.e. IT Capital WIP, project portfolio reporting, CPS Dashboard, etc.) and control processes to use such repository (see Recommendation #4) as their main input.	High	IT agrees with the recommendation and will include the suggested reporting requirements in the feature set for a future project portfolio management tool. To be completed by March 31, 2023	Efficiency and Effectiveness
6	That Information Technology reinforce project portfolio management processes which enable governance, control processes and oversight of individual projects as well as the overall portfolio for each section and at the divisional level.	High	IT has implemented a number of control processes and oversight management for individual projects and the IT portfolio. IT acknowledges that more support for staff is required to ensure consistent application of processes and quality assurance, and will develop a communication plan targeting project managers, project leaders and IT portfolio managers to reinforce controls and quality assurance processes for effective project management. To be completed by August 31, 2021	Efficiency and Effectiveness
7	That Information Technology establish and implement a detailed time tracking tool for all IT staff and any staff paid from the IT budget (i.e. Legal Counsel, Buyer, etc.) for resource and capacity management.	High	IT agrees that a time tracking solution is required and notes that this is a need across the corporation. Two specific initiatives are planned to implement Time Tracking for the City starting with the Automated Staffing Solution (only Fire funded at this time) followed by the Fiori App enhancements to track time and allocate for chargebacks, although the initiative is not prioritized and can only take place after the S4 Hana upgrade. The target go-live for Fiori Time Sheets, funded in 2020 IT Budget, is Q2 2022. In the interim, IT has adopted the Finance temporary spreadsheet solution for assigning time that would be recovered to a Capital budget; this would not be for all staff so not inclusive of all IT staff time being tracked.	Operational Control and Financial Reporting

			<p>Legal and Procurement staff are fully funded by the IT Capital budget and are full-time permanent staff. This was approved by Council. A good portion of their time is spent on contract renewals and in many cases there is no capital budget or project; just a renewal. So the allocation of their costs has been distributed to a set of capital PN's.</p> <p>Action to address this issue in the long term is the implementation of the Fiori Timesheets.</p> <p>To be completed by March 31, 2022</p>	
8	That Finance review the methodology for capitalizing costs from other divisions to IT capital projects.	Medium	<p>Finance will revisit the cost allocation process for employees allocated to projects of other areas and determine the most efficient and effective way to distribute them. Once that is defined, Finance will work with IT on the implementation of the solution.</p> <p>To be completed by March 31, 2022</p>	Operational Control and Financial Reporting