

Performance Audit of Capital Project Management and Procurement Processes

Presented To:	Audit Committee
Meeting Date:	March 18, 2025
Type:	Managers' Reports
Prepared by:	Ron Foster Auditor General
Recommended by:	Auditor General

Report Summary

This report provides a recommendation about Capital Project Management and Procurement Processes in the City.

Resolution

THAT the City of Greater Sudbury approves the recommendations outlined in the report entitled “Performance Audit of Capital Project Management and Procurement Processes” as presented to the Audit Committee on March 18, 2025.

Relationship to the Strategic Plan, Health Impact Assessment and Community Energy & Emissions Plan (CEEP)

This report supports the strategic goal of asset management and service excellence in planning for sustainable infrastructure that demonstrates a willingness to plan, implement and innovate in accordance with short and long-term priorities.

Financial Implications

No financial implications.

Resources Cited

Ensuring Quality During Construction on Linear Infrastructure Capital Projects [Ensuring Quality During Construction on Linear Infrastructure Capital Projects \(escribemeetings.com\)](https://pub-greatersudbury.escribemeetings.com/Files/Ensuring%20Quality%20During%20Construction%20on%20Linear%20Infrastructure%20Capital%20Projects.pdf)

Addendum to Agenda regarding Contract Award for the Construction of the Pioneer Manor Bed Redevelopment <https://pub-greatersudbury.escribemeetings.com/FileStream.ashx?DocumentId=50066>

Performance Audit of the Engineering Services Division [Performance Audit of the Engineering Services Division](https://pub-greatersudbury.escribemeetings.com/Files/Performance%20Audit%20of%20the%20Engineering%20Services%20Division.pdf)

OBJECTIVE

To assess the extent of regard for value-for-money within capital project management and procurement processes at the City.

BACKGROUND

The Engineering Services Division is responsible for the delivery of projects that maintain, rehabilitate, renew and expand the City's infrastructure including roads, storm-water collection, water distribution, sanitary collection, water treatment plants, wastewater treatment plants and storm-water management facilities. The Project Services Section of this Division has 11 fulltime staff and provides project management and controls for construction projects within the Division.

Large capital projects in the City, including the Sparks Street, Lorraine Street, Pioneer Manor Redevelopment, Cultural Hub, Event Centre and Municipal Services Relocation projects are managed by senior project managers who report to the General Manager, Growth and Infrastructure. This group has 7 seconded staff.

The Purchasing Services section of the Financial Services Division is responsible for the coordination of the open-competitive procurement process of construction services, as well as other services and goods for the City. This section has 8 fulltime staff.

METHODOLOGY & SCOPE

This audit included interviews, analysis of policies and processes, contracts, reports and data as well as tests of controls for large capital projects that were commenced between January 1, 2018 and January 31, 2025.

EXECUTIVE SUMMARY

This audit identified a number of significant improvements to capital project management and procurement processes that have been achieved in recent years. It also identified opportunities to manage significant risks more effectively.

AUDIT STANDARDS

We conducted our audit in accordance with Generally Accepted Government Auditing Standards which require that we adequately plan audits; properly supervise staff; obtain sufficient, appropriate evidence to provide a reasonable basis for audit findings and conclusions; and document audits. For further information regarding this report, please contact Ron Foster at the City of Greater Sudbury at 705-674-4455 extension 4402 or via email at ron.foster@greatersudbury.ca

OBSERVATIONS AND ACTION PLANS

A. Procurement and Project Management Processes for Large Capital Projects

This audit included a review of procurement and project risk management practices for capital projects with contract awards larger than \$7 million that were issued since January 1, 2018. As shown in Appendix 1 of this report, both procurement and project management processes have been managed effectively for the majority of these projects.

Despite the delays experienced on the Paris Street Bridge Refurbishment project, the budget and quality objectives for this project were met. A lessons learned exercise was completed for this complex project to document lessons learned that may be used on similar projects in the future.

Completion of the Lorraine Street housing project has been delayed as this project has experienced a number of challenges since inception. Nevertheless, the project is expected to be completed within 105% of the budget and in accordance with the City's technical requirements.

Costs for the Kingsway Pavement Rehabilitation project from Silver Hills to Falconbridge were \$2 million higher than project award, (which was within Council approved budget), primarily due to extra costs incurred at the Barrydowne and Kingsway intersection to remove rock in order to upgrade the storm sewer at this location. As outlined in the report to Council, which can be found at the link below, this work was completed at night to minimize disruptions to local area businesses. The cost of the extra work at this location was significant as the storm sewer trench needed to be backfilled at the end of each shift. <https://pub-greatersudbury.escribemeetings.com/filestream.ashx?DocumentId=51538>

On November 25, 2022, the Province of Ontario introduced a fixed, time-limited funding to accelerate development and redevelopment of long-term care beds. On Friday, May 12, 2023, the City received an executed Development Agreement from the Ministry of Long-Term Care to redevelop Pioneer Manor. On May 19, 2023, the City issued a Request for Tender for this project. The period for bidding on this project was extended from 35 to 47 days in response to requests from potential bidders. However, the City still only received one bid on this complex project. Staff advised us that significant increases to construction materials and labour during the pandemic as well as technical risks caused the successful bidder to submit a bid of \$80.5 million which exceeded the City's cost estimate of \$63.9 million by \$16.6 million. The report to Finance Committee at the link below indicates that these increased costs were shared by the City and province, with the province funding 82% of the total project costs. [FileStream.ashx](#)

Recommendations:

1. When planning large and/or complex capital projects, staff need to develop strategies to identify, assess and mitigate significant risks including risk-sharing strategies.
2. Procurement timelines should also be extended to give capable bidders sufficient time to assess the City's requirements, identify and assess risks and develop appropriate bids for these projects.
3. Lessons learned documents should be prepared for the Lorraine Street housing project and the Kingsway Pavement Rehabilitation project to document the challenges and solutions for staff that complete similar projects in the future.

Management Responses and Action Plans - Agreed

1. *Staff will develop strategies to identify, assess and mitigate significant risks. Since these projects have been tendered, Staff have been following the recommendations from the "Performance Audit of the*

Engineering Services Division” which is available at the link below: [Performance Audit of the Engineering Services Division](#)

2. Procurement timeline recommendations from the “Performance Audit of the Engineering Services Division” and applicable trade agreements are being adhered to. Minimum timelines will be included in the next policy update, including the requirement for extended timeline requirements for complex procurement processes. The Purchasing Section will explore implementing a process to post advance notices for procurement opportunities related to large projects on its single point of access site (linked from bids&tenders) before the tender is issued, providing early market awareness.
3. Staff will prepare lessons learned documents for the Lorraine Street housing project and the Kingsway Pavement Rehabilitation project (completed during the audit process).

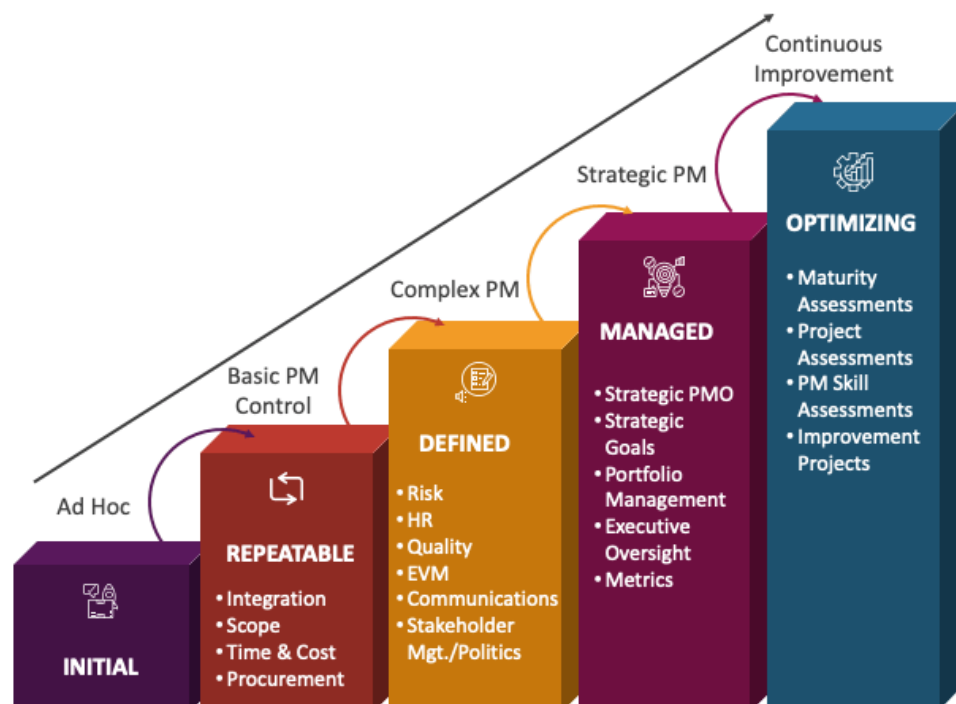
B. Project Management Maturity Model

The Project Management Institute developed a project management maturity model that is shown below to assess the maturity of project management practices.

Organizations that have significant annual construction programs greater than \$50 million should develop construction project management processes that are defined. The project management processes used by staff in the Engineering Services Division to deliver the City’s annual capital projects for the City’s roads, bridges, water and waste water infrastructure are defined. The processes that have been established for other large capital projects such as the housing projects on Sparks Street and Lorraine Street as well as the Pioneer Manor Redevelopment project are not as well defined, however. As a result, variances from project plans may not be identified to senior management and Council on a timely basis.

FIGURE 1

PROJECT MANAGEMENT MATURITY MODEL



Recommendation:

Implement defined project management practices for the City's large capital projects to ensure effective reporting of project status and significant variances from plan to senior management and Council.

Management Response and Action Plan - Agreed

The staff on the large capital projects team are now working with the Engineering Services Division, including integrating with the Project Controls section to implement defined project management practices.

C. Project Risk Management

Effective project risk management requires project risks to be identified and assessed during the planning and design phases to ensure they are mitigated during the procurement and construction/delivery phases. This audit indicated that risks that are identified and assessed during the planning and design phases of projects are not sufficiently documented during the construction/delivery phases of projects that are managed by Engineering Services.

Recommendation

The agendas for preconstruction meetings should be modified to adequately document the risk mitigation steps to the planning and delivery phase of projects. Risk management logs should also be completed and updated periodically to ensure that risks are managed actively throughout these phases.

Management Response and Action Plan – Agreed

Agendas have been modified to document the risk mitigation steps. Risk management logs will be created.

D. Significant Accomplishments

1. Staff prequalify suppliers for large and or specialized construction projects such as bridge replacements and water and wastewater projects.
2. Staff in Engineering Services use competitively awarded standing offers to engage engineering and architectural consultants for planning input and quality assurance on capital projects.
3. Standardized procurement and contract templates for construction services have been developed to ensure all information and contract requirements are captured, thus minimizing the risk of error.
4. Contract bidding information for capital projects is stored on a need-to-know basis during bidding.
5. Bid evaluation processes for capital projects are mature and minimize quality risks.
6. The Bids&tenders contract management portal for non-linear construction projects provides supplier with access to contract documents to manage their insurance certificates.
7. Potential conflicts of interest for all staff that deliver projects and procure services are managed.
8. The Engineering Services Division has created different sections to separate project delivery from design and quality management to allow staff to focus on tasks that require specialized skills.
9. Engineering Services has established a project controls office that receives invoices from contractors and consultants, to ensure accurate and timely accounting for compliance with "prompt payment" legislation.
10. Engineering Services has introduced measures to ensure quality during the design and construction of linear infrastructure projects to reduce the number of change orders and to ensure projects are delivered in accordance with the City's specifications.
11. Communication plans are developed for capital projects delivered by Engineering Services staff.

12. Constraints, assumptions, and risks are identified within project charters by Engineering Services staff.
13. The schedule, quality and budget for capital projects are actively managed by project managers.
14. Change orders for capital projects are managed in accordance with the Purchasing By-law.
15. The performance obligations of contractors are actively monitored from project initiation to completion.
16. Capital projects are prioritized in accordance with long-term plans and asset management programs.
17. Staff obtained funding from the upper tiers of government for large projects such as the Cultural Hub and Walden Wastewater Treatment Plant Upgrade.
18. Staff's decision to explore different contract delivery strategies for the Cultural Hub and Event Centre is prudent.

Appendix 1 – Large Capital Projects Reviewed to December 31, 2024

Contract	Project Description	Project Award in \$ Millions ⁸	Met All Project Objectives	Lessons Learned Completed
ENG18-35	Maley Drive Ext & Widening Barrydowne Road to Falconbridge Rd – Contract 4	9.52	Yes	NA
ISD19-02	AMI Water Meter	10.29	Yes	NA
ENG19-24	Road Widening - Municipal Road 35 Phase 1	12.97	Yes	NA
ENG19-35	Paquette-Whitson Municipal Drain and Stormwater Management Pond ¹	8.97	Yes ²	NA
ENG20-24	MR35 Rd Widening Phase 2	13.3	Yes	NA
ENG20-25	Asphalt Rehabilitation, Skead Road, MR55, Desmarais Road & MR80	5.0 ²	Yes	NA
ENG21-2	Road Reconstruction, Watermain & Sewer Improvements, Hyland Drive	7.14	Yes	NA
ENG21-10	Lively Infrastructure Upgrades Lively/Walden Phase 2	8.84	Yes	NA
ENG22-36	Kingsway Pavement Rehab Silver Hills to Falconbridge	9.38 ³	Yes	No
ENG22-53	Paris Street Bridge Refurbishment	7.89	No ²	Yes
SHO22-196	Modular Housing - Sparks Street	6.99	Yes	NA
CDD22-103	Affordable Housing - Lorraine Street	11.99 ⁴	Delayed	No
ISD23-213	St. Charles Lift Station Upgrades	16.98	Slight delay ⁵	NA
CDD23-97	Pioneer Manor Redevelopment ⁶	80.46	On track ²	NA
ENG23-10	Lively Infrastructure Upgrades Phase 2C & 2D Lively/Walden Anderson Drive ¹	9.85	Cost increase ⁷	NA
ISD23-81	Sudbury WWTP Electrical & Generator Upgrades	7.35	On track	NA
ENG24-16	Lasalle and Elisabella Road Reconstruction	7.18	On track	NA

Notes:

1. Improvements to project procurement practices were identified in our audit of Engineering Services.
2. Project budget increases were approved by Council.
3. Actual projects costs are \$11.4 million.
4. The contract was assigned to Flex Modular after the initial contractor declared bankruptcy.
5. Ground settlement from the installation of sheet piles has caused some delays and extra costs.
6. Initial budget of \$59.1 M was increased to \$63.9 M and then to \$92.97 M to allow the contract award.
7. Costs for protection of high voltage utility lines to be shared with Hydro One.
8. All of these contract awards were for amounts less than the approved project budgets.

Table 1 – Summary of Significant Risks

Risk	Total No. of Risks	Risks (Before Controls)			Residual Risks (After Controls)		
		High (15 to 25)	Med (9 to 14.99)	Low (1 to 8.99)	High (15 to 25)	Med (9 to 14.99)	Low (1 to 8.99)
Reputation (R)	1	1	0	0	0	0	1
Operational (O)	13	13	0	0	0	3	10
Financial (F)	13	13	0	0	0	3	10
Legal (L)	1	1	0	0	0	0	1
TOTAL	28	28	0	0	0	6	22

Table 2 – Significant Risks

Type of Risk	Description of Risk	Risk Before Controls	Residual Risk*
F1/O1	Lack of effective capital project planning processes may increase project scope, cost, schedule, and quality risks.	25	12
F2/O2	Insufficient time for the competitive bidding process may lead to higher bids.	25	12
F3/O3	Ineffective bid evaluation processes may lower the quality of capital projects.	25	8
F4/O4	Ineffective supplier evaluation processes may lead to safety risks.	25	8
F5/O5	Lack of an effective prequalification process may lower project quality.	25	8
F6/O6	Lack of confidentiality over bids may raise the cost of capital projects.	25	8
F7/O7	Lack of an effective conflict of interest management process may compromise the competitiveness of the bidding process or the effectiveness of project management processes.	25	8
F8/O8	Lack of effective governance management processes may compromise the effectiveness of the award process and increase quality or cost risks.	25	8
F9/O9	Lack of effective risk management processes may compromise the attainment of project goals.	25	12
F10/O10	Lack of effective human resource management may compromise the effectiveness of project risk management processes.	25	8
F11/O11	Lack of effective project scope management processes may lead to project cost increases.	25	8
F12/O12	Lack of effective project schedule management processes may lead to project delays.	25	8
F13/O13	Lack of effective quality management processes may compromise the quality of capital projects.	25	8
R1/L1	Lack of effective contract management processes may lead to disputes and costly litigation.	25	8

**Note that it is not cost-effective to eliminate all residual risks.*

Impact	Services	Technology	People	Strategic	Legal/Reputational	Financial
Very Minor (1)	<ul style="list-style-type: none"> • Less than 90% of service objectives achieved. 	<ul style="list-style-type: none"> • Minor disruptions of secondary systems or data loss or corruption 	<ul style="list-style-type: none"> • Minor reportable employee injury • Increase in number of union grievances 	<ul style="list-style-type: none"> • Minor instances of actions that are at odds with strategic priorities 	<ul style="list-style-type: none"> • Small amount of negative media coverage or complaints to City • Non-lasting damage or no reputational damage • Theft or Fraud under \$1,000 	<ul style="list-style-type: none"> • Uninsured loss, cost overruns or fines < \$10K • Insured loss < \$100K • Loss of replaceable asset
Minor (2)	<ul style="list-style-type: none"> • Less than 75% of service objectives achieved • Unable to perform non-essential service 	<ul style="list-style-type: none"> • Disruptions of systems or data loss or corruption • Disclosure of non-confidential but embarrassing information 	<ul style="list-style-type: none"> • Reportable employee injury • Loss of key staff but able to recruit competent replacements • Significant increase (>10%) in number of union grievances. 	<ul style="list-style-type: none"> • Instances of actions at odds with strategic priorities 	<ul style="list-style-type: none"> • Complaints elevated to the Director level. • Short-term repairable damage to City's reputation • Public outcry for discipline of employee. • Moderate amount of negative media coverage • Theft or Fraud of \$1,000 to \$10,000 	<ul style="list-style-type: none"> • Uninsured loss, cost overruns or fines of \$10K to \$100K • Insured loss < \$100K - \$1M • Inefficient processes • City's actions result in reduced economic development
Moderate (3)	<ul style="list-style-type: none"> • Less than 60% of service objectives achieved • Unable to perform essential service but alternatives exist 	<ul style="list-style-type: none"> • Disruptions of significant systems or data loss or corruption • Recoverable loss from important system 	<ul style="list-style-type: none"> • Multiple employee injuries or long-term disability from one incident. • Inability to retain or attract competent staff. • Increase in stress leave, sick leave or WCB claims. • Work-to-rule union disagreement or short-term strike 	<ul style="list-style-type: none"> • Numerous actions are at odds with strategic priorities. 	<ul style="list-style-type: none"> • Public/media outcry for removal of management • Long-term damage to City's reputation • Citizen satisfaction survey indicates unacceptable performance. • Complaints elevated to Council level. • Results inconsistent with commitments made to citizens • Theft or Fraud under \$100,000 	<ul style="list-style-type: none"> • Uninsured loss, cost overruns or fines of >\$100K to \$1M • Insured loss >\$1M to \$10M • Having to delay payments to contractors/suppliers • City's actions results in lost revenue for significant number of City businesses

Impact	Services	Technology	People	Strategic	Legal/Reputational	Financial
Major (4)	<ul style="list-style-type: none"> • Less than 45% of service objectives achieved. • Unable to perform an essential service where no alternative exists. 	<ul style="list-style-type: none"> • Unrecoverable loss or corruption of data from important system • External exposure of important information • Unavailability of significant systems 	<ul style="list-style-type: none"> • Serious injury of one or more employees • Legal judgment against the City in workplace matter. • Turnover of key employees • Sustained strike of staff. 	<ul style="list-style-type: none"> • Numerous actions are significantly at odds with the strategic priorities. 	<ul style="list-style-type: none"> • Public/media outcry for change in CAO or Council • Public or senior officials charged or convicted • Legal judgment against the City in a workplace matter • Integrity breach resulting in decreased trust in City Council or Administration. • Theft or Fraud >\$100,000 	<ul style="list-style-type: none"> • Uninsured loss, cost overruns or fines of >\$1M - \$10M • Insured loss of >\$10M - \$100M • Unable to pay employees and contractors on time. • City's actions impair local economic conditions.
Extreme (5)	<ul style="list-style-type: none"> • Less than 30% of service objectives achieved. • Unable to perform several essential services where no alternatives exist. 	<ul style="list-style-type: none"> • Unrecoverable loss or corruption of data from critical system • External exposure of confidential information • Unavailability of critical systems 	<ul style="list-style-type: none"> • Death of an employee • Major legal judgment against the City in workplace matter • Significant turnover of key employees with ELT • Sustained strike of staff supporting key services 	<ul style="list-style-type: none"> • Many actions are significantly at odds with the strategic priorities 	<ul style="list-style-type: none"> • Public/media outcry for change in CAO or Council • Senior officials criminally charged or convicted • Severe legal judgment against the City in a workplace matter • Major integrity breach resulting in complete loss of trust in City Council or Administration • Theft/Fraud >\$1,000,000 	<ul style="list-style-type: none"> • Uninsured loss, cost overruns or fines >\$10M • Insured loss > \$100M • File for bankruptcy • Failure to maintain financial capacity to support current demands. • City's actions significantly impair local economic conditions.

Likelihood	Unlikely (1)	Possible (2)	Probable (3)	Likely (4)	Very Likely (5)
	Less than 20%	>20% but < 40%	>40% but < 60%	>60% but < 80%	80% or more
	Less frequent than every 10 years	May occur in the next 2 years	Will occur this year or next year at least once	May occur regularly this year	Will occur within months or may reoccur often