
Audit of Contract ENG11-42

May 26, 2016
FINAL REPORT



SUMMARY

Objectives

The objectives of this audit were to determine if internal controls over contract payments were in place and operating effectively; and if risks to CGS arising from the contract were being managed effectively.

Background

ENG11-42 was awarded to Bruce Tait Construction Ltd. which was the successful bidder in response to a tender that was issued in 2011 for Emergency Water & Wastewater Repairs.

Scope

The scope of the audit included payments to the vendor from 2012 to 2016. Compliance with the Purchasing By-law was not assessed in this audit as it is included in the follow-up of the Procurement Audit which will be completed in Q2 of 2016.

Report Highlights

This audit indicated that expenditures for emergency repairs have been increasing since 2012. Contract management practices have improved over the term of the contract but were not sufficient in the initial years to ensure that all amounts billed were accurate. While no evidence of fraud or abuse was detected during our audit, we identified the need to:

- Examine alternatives to reduce the escalating annual costs for emergency repairs by contractors;
- Ensure that sufficient information is provided by the contractor to support their invoices to enable staff to assess the reasonableness and accuracy of amounts billed;
- Continue to refine the invoice review and approval process to ensure that charges for equipment are appropriate; and
- Ensure the successful contractor adheres to the City's updated requirements in the new contract when it submits its initial invoices for repairs.

We would like to thank staff for their excellent co-operation during this audit. We were encouraged by staff's willingness to work with us and to embrace our suggestions for improvement.

Audit Standards

- We conducted our audit in accordance with Generally Accepted Government Auditing Standards (GAGAS). Those standards require that we adequately plan for the audit; properly supervise audit staff; obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions; and prepare audit documentation related to the planning, conducting, and reporting for each audit. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit.

For further information regarding this report, please contact Ron Foster at extension 4402 or via email at ron.foster@greatersudbury.ca

OBSERVATIONS AND ACTION PLANS - 1

Annual Contract Payments

Observation

In 2011, Bruce Tait Construction Ltd. was the successful bidder in response to the tender that was issued for Emergency Water/Wastewater Repairs. Payments under contract ENG11-42 have increased while the capital funding has remained below the levels recommended within the Financial Plan adopted by Council in 2011. As a result, capital expenditures have been insufficient to address the increasing age of the infrastructure which is now more than 50 years old on average.

| Year | Number of Water main Breaks | Contract value in \$ Millions <i>(Adj. for inflation)</i> | Actual payments in \$ Millions | Water Distribution Capital Budget in \$ Millions |
|------|-----------------------------|--|--------------------------------|--|
| 2012 | 78 | \$0.76 | \$2.1 | \$3.7 |
| 2013 | 103 | 0.78 | 3.4 | 8.7 |
| 2014 | 141 | 0.80 | 3.9 | 6.2 |
| 2015 | 184 | 0.82 | 4.2 | 5.8 |

Impact

1. Operating expenditures to maintain the water/wastewater infrastructure have consistently exceeded contract values in recent years and will likely continue to increase due to the age of this infrastructure.

Recommendation

1. Given the increasing volume of annual repairs and age of the underlying water/wastewater infrastructure, management should examine alternatives to reduce the escalating annual costs for emergency repairs by contractors.

Management Comment

- ◆ Management recognizes the need to focus on rehabilitation & replacement in lieu of emergency repair. Management also understands that given the existing condition of the watermain infrastructure, it will be necessary and prudent to maintain an adequately funded and robust emergency repair program. Management will endeavor to identify the capital investment required to maintain an average annual emergency repair budget that is acceptable to council.

- ◆ Management recognizes that the trend of increasing costs for emergency repairs is financially unsustainable.
- ◆ Management further agrees that emergency repairs are not the most cost effective or preferred method to permanently renew underground linear infrastructure. This contract is not meant as a substitute for conventional linear construction because the emergency repair contractor does not perform any permanent repairs. Most of the original old infrastructure remains in the ground after the emergency work is complete. A large portion of the costs in an emergency repair is restoration. If the work is performed in conjunction with a conventional construction project, road restoration could be performed more cost effectively and yield much better value in terms of long term failure risk reduction.
- ◆ Management agrees that providing levels of annual capital funding in accordance with the Financial Plan adopted by Council in 2011 for the period of 2012 to 2021 would eventually help to reduce break frequency and reduce the consequent resources required to effect emergency repairs. Management recognizes that Council has provided supplemental capital contributions in 2011, 2012, 2014, & 2016 and that the supplemental contribution in 2016 resulted in an overall rate increase in line with the recommendations in the Financial Plan. As well, Management has recognized the requirement for additional linear capital and has redistributed existing capital envelopes to increase the proportions spent on linear capital renewal. Accordingly, in 2016 the proportion of overall water/wastewater capital allocated to watermain rehabilitation and replacement was increased by Management and was also approved by Council.
- ◆ Management is currently updating the Waster /Wastewater financial plan in conjunction with the Water/Wastewater Master Plan. Management is also developing an updated format for our Asset Management plan. These exercises are scheduled for completion in the fall of 2017 and will establish a master plan that should reduce the escalating annual costs for emergency repairs. The process for completing these exercises is a regulatory requirement of the Safe Drinking Act and will involve dialogue with Council and community stakeholders commencing in 2016.

Action Plan

1. Management will examine alternatives to reduce the escalating annual costs for emergency repairs by contractors.

Action Plan Lead

Tony Cecutti / Nick Benkovich

**Timing
2016/2017**

OBSERVATIONS AND ACTION PLANS - 2

Use of Dump Sites

Observation

The contractor charged the City for depositing and leveling fill at privately owned dump sites at Long Lake and near Lasalle Boulevard between 2013 and 2015. While there is nothing within By-law 2003-282 which prohibits the City from leveling fill or spending funds to level fill, subsection 4(d) of the by-law states that the application form shall contain an acknowledgment that the applicant understands that the City will not level any surplus fill. The letters of consent that were signed by the owners of these sites indicate that the leveling of the fill material was the responsibility of the owner. By-law 2003-282 also requires an annual report to be sent to Council on the use of surplus fill but none was prepared for these years.

Impact

1. Owners of the private sites benefitted from having fill leveled on their properties for no charge.
2. The City's actions were not in compliance with the provisions of By-law 2003-282 which Council agreed to amend in May 2016 to shift responsibility for the locating of surplus fill sites and the ownership of the surplus fill to contractors.

Recommendation

Water/Wastewater staff should comply with the revised By-law.

Management Comment

- ◆ Management acknowledges that the leveling of fill at private disposal sites was not consistent with the agreements with private property owners. The practice of leveling fill has been a long standing conventional approach to disposal of surplus fill at private sites. Management found the former agreement framework to be impractical especially as it relates to emergency work (24/7/365). It is impractical to expect private owners to be available 24 hours per day, seven days per week, and especially at night when many emergency repairs are performed outside of normal hours of work. Without City intervention, emergency repair procedures would have been compromised due to lack of disposal sites, or alternatively material may have to be double handled as it would be disposed at temporary sites. Performing work with City forces at private disposal sites was found to be more cost effective than temporary double handling of material.
- ◆ Management recognized this ambiguity and moved to correct the issue on June 18, 2015 in a report to the Operations Committee, whereby Management requested authorization to amend the Surplus Fill Policy & Bylaw 2003-282.
- ◆ In previous contracts, the emergency contractor was expected to temporarily dispose surplus excavated material at City Yards. This required considerable expense to double handle the material for disposal or re-use.

- ◆ The former surplus fill framework was inconsistent with the current site alteration by-law. Upon review of the two by-laws management recommended that the site alteration by law remain and the surplus fill by-law be eliminated. This has recently been endorsed by Council.
- ◆ Management notes that the new surplus fill framework prescribes that all surplus fill be made the property of the contractor upon excavation. Contractors would be expected to find suitable disposal locations at their expense.

Action Plan

Management will continue to coordinate with and provide feedback to the City's Manager of Construction Services, as issues arise. Construction services is currently working on provisions for useable dump sites and associated agreements including specific recognition of the needs of a (24/7/365) emergency response situation.

Alternatively, WWW (Water - Wastewater) staff has set up a location where spoils can be dumped temporarily at a City depot, providing that the quality of material (and resulting runoff) is acceptable.

Moving forward the surplus fill arrangements will be adjusted to align with the new framework.

Action Plan Lead

Tony Cecutti / Nick Benkovich

Timing

Commenced already & ongoing

OBSERVATIONS AND ACTION PLANS - 3

Review and approval of invoices

Observation

An examination of invoices approved by water/wastewater staff in 2013 and 2014 indicated that insufficient information was often submitted by the contractor on the size of the repair to allow City staff to assess the reasonableness and accuracy of amounts charged for repairs. During this period, staff's process for the review and approval of invoices was not sufficiently reliable to ensure that charges for equipment and other amounts were appropriate.

In 2015, changes were implemented to improve the effectiveness of staff's review and approval of invoices from the contractor. These revisions led to a credit for approximately \$7,000 being issued to the City for equipment charges. Further refinements were made to invoice review procedures in 2016 to develop performance metrics for repair jobs to allow staff to assess the reasonableness of amounts charged by the contractor. For large and atypical repairs, staff that attend the repairs prepare reports noting the equipment and labor employed during the repairs and the number and size of trenches.

| Year | Labour | Equipm ent | Moving | Others | Total | | | | |
|------|-------------------------|-----------------------------------|-------------------------|-----------------------------------|-------------------------|-----------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| | Cost/Cu. Ft. (\$) | Ratio to total costs (%) | Cost/ Cu. Ft (\$) | Ratio to total Costs (%) | Cost/ Cu. Ft (\$) | Ratio to total Costs (%) | Cost/ Cu. Ft (\$) | Ratio to total Costs (%) | Ratio to total Costs (%) |
| 2013 | \$ 0.73 | 45% | \$ 0.34 | 21% | \$.12 | 8% | \$0.43 | 26% | 100% |
| 2014 | \$0.79 | 34% | \$0.73 | 32% | \$0.14 | 6% | \$0.63 | 28% | 100% |
| 2015 | \$0.67 | 36% | \$0.66 | 35% | \$0.08 | 4% | \$0.31 | 25% | 100% |

Impact

1. As the staff in water/wastewater did not have complete information to verify the accuracy and reasonableness of invoices received, the City may have been overcharged for repairs in 2014.

2. Higher charges for equipment have contributed to increases to repair costs since 2013.

Recommendation

1. Staff need to ensure that sufficient information is provided by the contractor to support their invoices to enable staff to assess the reasonableness and accuracy of amounts billed.
2. Staff need to continue to refine the invoice review and approval process to ensure that charges for equipment are appropriate.

Management Response

Staff has followed an invoice approval process which includes a review of existing documents such as the Trouble Investigator crew cards, watermain break reports, and Supervisor site notes to check the invoices for "reasonableness", before approving them. This existing process has yielded several invoices that required additional clarification before being resubmitted and others where credit invoices were required by CGS before final approval and payment.

Notwithstanding that an invoice approval process existed, Management has identified the need to strengthen the oversight framework, and have begun the implementation of a number of improvements as defined in an updated Service Contract Management Framework.

As well, effective January 2015, a new afternoon shift (Mon – Fri; 4 – 12) Supervisor II rotation was implemented. This action was further reinforced on December of 2015 with the addition of a pilot program to implement a night shift Supervisor II over the winter season (Mon – Fri; 0000 – 0800) to provide 24 / 5 coverage. Weekend coverage is already provided through staff on the non-union standby rotation. The primary responsibility of these individuals is the oversight of both CGS field staff and contracted resources active in the field during their watch. For the remainder of the calendar year night shift Supervision will be provided by existing resources. It is our hope that after confirming the impact and viability of the pilot program that the year round night shift presence will be made permanent.

Although the equipment costs show an increase over the period from 2013 – 2015 it is important to note:

1. In December of 2013, the contractor incorporated the use of trench boxes and hydro-excavation into the repair operations to help reduce the excavation footprint and consequent costs of the repair. The 2011 Audit of Watermain Repairs noted that:

“Safety related to excavations and trenches is a key element that requires constant vigilance, as it is clear that repair costs and the impact to road surfaces increase significantly when the dimensions of excavations and trenches increased.”

It is clear that despite some early spikes in the costs for equipment (as the new equipment was integrated into the process) both the cost of labour and the overall costs shows favorable improvement in 2015 as indicated in the table. It is also clear that the overall benefit to the repair program from the introduction of hydro-excavation and trench boxes was positive particularly when a \$300,000 reduction in the 2013 budget for road restoration costs was also considered.

Action Plan

Management will consistently follow a process to verify the reasonableness of invoices received, by following through with the full implementation of the recently introduced Contract Management Framework. The Framework is designed to mitigate both the health & safety risks as well as general program control risks. The Framework incorporates many recognized principles and practices for effective management of service contracts and aligns with guidelines as recommended in the Ontario Government publication entitled: "Municipal Service Contract Administration".

The framework defines roles & responsibilities, incorporates a flexible risk-based monitoring approach and identifies a suite of important documentation tools to improve the collection of relevant field and event data. This risk based approach along with the other tools incorporated into the framework should ensure that detailed reports noting the amount of equipment and labour employed by the contractor and the size of trenches will be prepared by staff attending the repair sites. These reports will provide sufficient data to allow staff to routinely check the reasonableness of amounts invoiced for these repairs.

Five Key Performance indicators (KPIs) have been developed to allow staff to assess the reasonableness of amounts charged to Emergency Repairs and are being actively tracked including: Contractor Mobilizing Time, Time to Complete Repair (Time Duration from Mob to De-mob), Length of Service Outage, Cost per M3 Excavated Volume (\$/m3), & Actual Costs vs Budget. Our action plan moving forward includes use of the KPIs as tools to ensure the reasonableness of the costs.

Action Plan Lead

Tony Cecutti / Nick Benkovich

Timing

The full implementation of performance monitoring for activity under this Contract will be in place by June 30, 2016.

OBSERVATIONS AND ACTION PLANS - 4

Emergency Repair Contract

Observation

The current contract is not sufficiently detailed to determine what can and cannot be charged for equipment and labor. We found a significant number of invoices with charges for equipment that were permissible under contract ENG11-42 but were subject to interpretation. For example, charging a hoe ram under one category resulted in a \$40 higher rate than if it had been charged under another category.

The contract is silent on the rates to be charged for equipment that is not identified in the contract. We found several instances where a bulldozer was used for leveling soils at dumpsites but the City was charged using the hourly rate for an excavator.

The contract is also silent regarding the ability to charge for contract staff when on break for rest periods and meals. While the contractor was not consistent when billing for breaks, we found no evidence of abuse by the contractor when billing for these amounts.

We noted that the recent tender that was issued by staff for emergency repairs includes improved language that will clarify what amounts can and cannot be charged for repairs.

Impact

Ambiguity in the language may lead to different interpretations of the contract by the contractor and City staff.

Recommendation

Staff should ensure the successful contractor adheres to the City's updated requirements in the new contract when it submits its invoices for repairs.

Management Comment

Management follows a review process for all invoices before approval. Any additional equipment beyond what is specified in the Repair Work Crew must be approved by City Staff before arrival on site. Existing Contract provisions enable Management to deal effectively with unforeseen changes in scope. Staff approves this equipment based on the City's performance requirements related to site conditions, location, depth, and prior experience in the area. This ensures that the equipment on site is appropriate for the work

to be done to achieve the contract imperatives. Notwithstanding that an existing review process existed, the new Contract Management Framework has provided improved tools and data for staff to better document these approvals and flag anomalies before payment of invoices.

It is acknowledged that the Contract does not give clear direction on whether to pay for labour meal break times. This will be addressed in the new contract tender documents and will specify much clearer language with respect to payment of meal breaks.

- ◆ Regarding meal breaks, the contractor is responsible for providing meal breaks as defined in the Employment Standards Act. Management has traditionally deferred to the Emergency Contractor to determine when it is appropriate for their staff to take a meal break. Similar to the OHSA, management has avoided intervening with the contractor's obligations regarding labour relations. The nature of the emergency repairs is such that the repair crews do not often take meal breaks all at the same time. It would be difficult for City management to determine exactly when the contractor is taking a formal meal break.
- ◆ This contract stipulates that the emergency contractor is the constructor. This is an important distinction for management as in the role of constructor and contractor, it assumes all Health and Safety obligations. Under the OHSA, the constructor must be responsible for the work methodology. City staff is not entitled to dictate the work method without assuming the constructor responsibility under the Act. Despite this conflict the current contractor has always taken the most reasonable approach under the circumstances.
- ◆ To provide better management of the contracts and maintain the contractor's constructor status under the OHSA, management is implementing the following procedures in future tenders:
 - formal documentation of service criteria to support the contractor's choice of equipment;
 - clarification of invoicing for longer shifts where mandatory meal breaks would be required and therefore need to be precluded from invoicing.

Action Plan

Provide clear language for amounts that can be charged for different types of equipment and labour in future contracts for emergency water and wastewater repairs.

Action Plan Lead

Tony Cecutti / Nick Benkovich

Timing

This additional language will be integrated into the tender currently under development for a new contract which will be in place by September 1, 2016.