

Report to Civic Works Committee

To: Chair and Members
Civic Works Committee

From: Kelly Scherr, P.Eng., MBA, FEC
Deputy City Manager, Environment & Infrastructure

Subject: Mud Creek East Branch Phase 2A: RFT-2023-128 – Oxford Street
Culvert Installation: Construction Cost Increases

Date: October 2, 2024

Recommendation

That, on the recommendation of the Deputy City Manager, Environment and Infrastructure, the following actions **BE TAKEN** with respect to the RFT-2023-128 - Mud Creek East Branch Phase 2A (Culvert Installation) project:

- a) Mud Creek East Branch Phase 2A – Culvert Installation Project (Tender RFT-2023-128) construction contract value with Birnam Construction Ltd. **BE INCREASED** by \$900,000.00 including contingency, for a total contract value of \$4,256,250.56 (excluding HST) in accordance with Section 20.3 (e) of the Procurement of Goods and Services Policy;
- b) The Contract Administration fees for AECOM Canada Ltd. **BE INCREASED** in accordance with the estimate on file, by \$177,117, excluding HST, from \$172,022.25 to a total upset amount of \$349,139.25 in accordance with Section 15.2 (g) of the Procurement of Goods and Services Policy.
- c) the financing for these projects **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendices 'A.'
- d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with these projects; and,
- e) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

Executive Summary

Due to the extension of the construction period and unforeseen utility, dewatering, and watermain challenges during construction this year, both the contractor and consultant were required to put forth additional efforts towards completing the Mud Creek Oxford Street culvert crossing. Additional efforts for the consultant included added site inspection, contract administration time due to the contract extension to complete the works. The previous report to Civic Works Committee on May 22, 2024, requested additional fees to cover additional dewatering expenses and steel casing for the watermain. This request for increased fees relates to contract change orders associated with unforeseen utility issues, weather conditions, and unit rate escalations to account for price increases from 2023 to 2024 due to the delays.

Linkage to the Corporate Strategic Plan

This recommendation supports the following 2023-2027 Strategic Plan areas of focus:

- Climate Action and Sustainable Growth:
 - Infrastructure is built, maintained, and secured to support future growth and protect the environment.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter.

- CWC – May 22, 2024 - Mud Creek East Branch Phase 2A and 2B: RFT-2023-128 - Culvert Installation Project and Consultant Fee Increases
- CWC – June 13, 2023 - Appointment of Consulting Engineers for Contract Administration Services: Stormwater Infrastructure and Channel Remediation Projects
- CWC – July 26, 2022 – Consultant Contract Increase for Mud Creek Phase 2 Detailed Design.

1.2 Mud Creek Project.

Phase 2 of the Mud Creek project involves Phase 2A: a new culvert crossing at Oxford Street and Phase 2B: expanding the capacity of over 700m of the main Mud Creek channel from the CN Rail culvert crossing, northerly to Oxford Street, all to alleviate the frequent flooding of Oxford Street and promote 54 hectares of infill development in the area. The Phase 2A tender was awarded to Birnam Construction Ltd. in fall 2023. Phase 2B was awarded to CH Excavating (2013) this year and they have mobilized to the site and have started construction on the larger Mud Creek channel works from CN Rail to Oxford Street.

2.0 Discussion and Considerations

2.1 Discussion

In fall 2023, the contractor of the Phase 2A project encountered more groundwater than was originally anticipated for the installation of the Oxford Street culvert. The tender was issued with an Environmental Activity and Sector Registry (EASR) permit which only allowed up to 400,000 litres per day of dewatering. During the initial phase of the culvert installation, it was determined that the existing dewatering would exceed the issued EASR permit and a more significant Permit to Take Water (PTTW) would be required. The PTTW permit was issued in spring 2024 which estimated a dewatering rate of 3.4 million litres per day. The additional dewatering rate requires an extensive dewatering program to be implemented to facilitate the construction of the culvert under Oxford Street.

At the May 22, 2024, CWC meeting, additional funding was requested and awarded to the contractor and consultant to support the enhanced dewatering program and to install a revised steel casing for the watermain. Following this approval, the project encountered additional delays due to Bell utility issues. Specifically, there were unreliable as-constructed utility locates and drawings that did not identify the elevations or horizontal alignment of the existing Bell lines. This resulted in revised construction methodologies for the installation of the culvert, including a slide rail system and multiple crane setups due to the overhead hydro lines and the Bell lines. This construction methodology allowed for the project to progress during the relocation of the existing Bell fibre optic lines but will add additional cost to the contract. Figure 1 illustrates the installation of the culvert. The project also experienced significant rain events during the summer which caused additional efforts in dewatering and site maintenance.

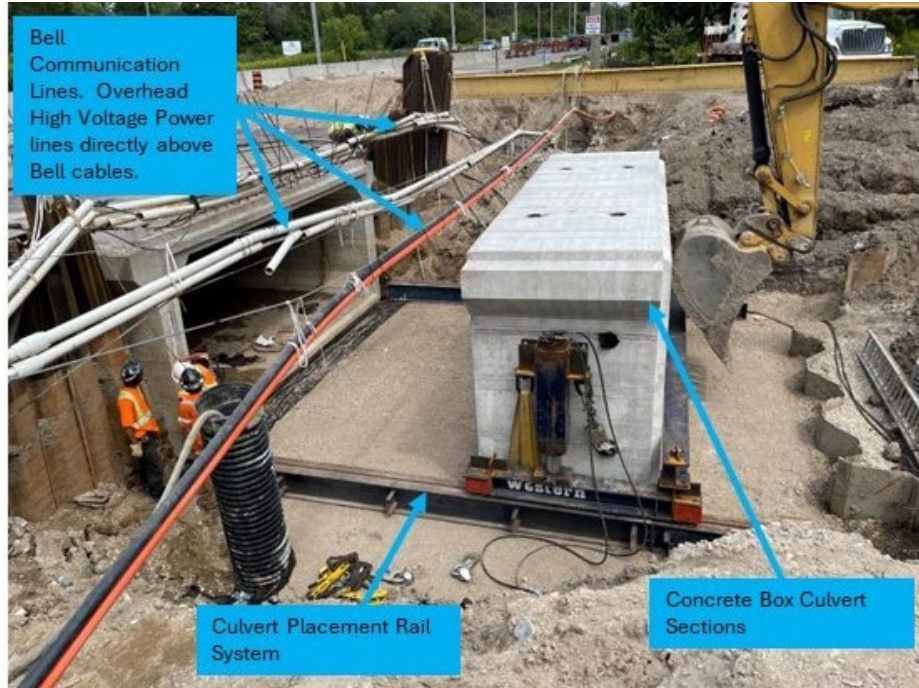


Figure 1: Installation of culvert under the Bell lines using slide rail system.

In response to the above, AECOM has incurred and will continue to incur additional costs for Phase 2A contract administration tasks due to managing the utility issue and for the extension of the project completion date, which was extended from April 2024 to November 2024.

3.0 Financial Impact/Considerations

The following estimated funds will cover the cost of additional unforeseen items:

Item	Additional Costs
Unit Rate Increases over 2023-2024 seasons	\$300,000
Change Orders due to unexpected issues (utility conflict, multiple crane setup, slide rail system, and weather-related cleanup)	\$400,000
Additional Contingency on the above Items	\$200,000
Sub-Total=	\$900,000

The budget required to complete the additional scope of work for AECOM is as follows:

Item	Additional Costs
Site Inspection – extra effort due to extended construction timing	\$58,200
Construction Administration – Additional effort for reviewing revised construction methods and relevant change orders due to Bell issues.	\$36,717
Costs due to extended contract – additional project manager time, additional Progress Certificates, biweekly meetings	\$15,200
Additional subconsultant efforts for dewatering issues, additional testing	\$47,000
Contingency	\$20,000
Sub-Total =	\$177,117
Report Total=	\$1,077,117

Conclusion

In accordance with Section 20.3 (e) of the Procurement of Goods and Services Policy, it is recommended that the contract value be amended for Mud Creek Phase 2A – Culvert Installation Project, and in accordance with Section 15.2 (g) of the Procurement of Goods and Services Policy, it is recommended that AECOM's contract administration budget for Mud Creek Phase 2A be increased.

Prepared by: **Shawna Chambers, DPA, P.Eng.**
Division Manager, Stormwater Engineering

Submitted by: **Ashley M. Rammeloo, MMSc., P.Eng.**
Director, Water, Wastewater, and Stormwater

Recommended by: **Kelly Scherr, P. Eng., MBA, FEC**
Deputy City Manager, Environment, and Infrastructure

Attach: Appendix 'A' – Sources of Financing

Appendix 'B' – Location Map

cc: Paul Titus, Stormwater Engineering
Michele Shears, Finance & Corporate Services