

Report to Civic Works Committee

To: Chair and Members
Civic Works Committee

From: Kelly Scherr, P.Eng., MBA, FEC
Managing Director, Environmental & Engineering Services
and City Engineer

Subject: Mud Creek Phase 1B Channel Reconstruction: Consultant
Appointment for Tendering and Construction Administration

Date: February 9, 2021

Recommendation

That, on the recommendation of the Managing Director Environmental & Engineering Services and City Engineer, the following actions BE TAKEN with respect to the award of contract for the Mud Creek Phase 1B Channel Reconstruction project and additional Consultant contract increase:

- (a) The engineering fees for CH2M Hill Canada Limited Consulting BE INCREASED to prepare a separate tender for the Phase 1B works and to authorize the resident inspection and contract administration for the said project in accordance with the estimates, on file, to an upset amount of \$352,370, excluding HST, from \$2,050,998 to a total of \$2,403,368, in accordance with Section 15.2 (g) of the Procurement of Goods and Services Policy;
- (b) the financing for this project BE APPROVED as set out in the Sources of Financing Report attached hereto as Appendix 'A';
- (c) the Civic Administration BE AUTHORIZED to undertake all the administrative acts that are necessary in connection with this project;
- (d) the approval given herein BE CONDITIONAL upon the Corporation entering into a formal contract or issuing a purchase order for the work to be done relating to this project; 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

Purpose

To allocate consulting fees to CH2M Hill Canada Ltd. to prepare the tender for the Mud Creek Phase 1B channel works, conduct inspection, and administer the contract during the construction period this summer 2021.

Context

The Mud Creek Phase 1A microtunnelling project included construction of two large diameter culverts installed under the CN Rail tracks northeast of Riverside Drive and Wonderland Road South. These tunnels were substantially completed in December 2020. The upcoming Phase 1B works include a significant reconstruction of the Mud Creek Channel from south of CN Rail to the existing box culvert at Wonderland Road South, all to connect the Mud Creek tunnels from the CN Rail crossing to the Thames River.

Linkage to the Corporate Strategic Plan

The Mud Creek project supports the 2019 – 2023 Strategic Plan through the strategic focus area of Building a Sustainable City, specifically including “building infrastructure to support future development and protect the environment” and to “protect and enhance waterways, wetlands and natural areas.”

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

Civic Works Committee – August 25, 2014 – Mud Creek Municipal Class Environmental Assessment

Civic Works Committee – November 3, 2015 – Appointment of Consulting Engineers for Design and Construction of Stormwater Management Facilities

Civic Works Committee – October 4, 2016 – Mud Creek Municipal Class Environmental Assessment Study – Status Update and Scope Change

Civic Works Committee – June 7, 2017 – Mud Creek Subwatershed Schedule B Municipal Class Environmental Assessment Notice of Completion

Civic Works Committee – January 9, 2018 - Appointment of Consulting Engineer Mud Creek Flood Reduction and Rehabilitation Phase 1 Detailed Design

Civic Works Committee – August 11, 2020 – Mud Creek Remediation – Phase 1A Tunnel Contract Award and Consultant Contract Increase

1.2 Background

In August 2020, the City awarded the tender for the Mud Creek Phase 1A Channel Remediation project to Ward and Burke Microtunnelling Inc. with detailed design and construction administration provided by CH2M Hill Canada Limited. Phase 1A included construction of two new tunnels (culverts) that are each approximately 2.7m in diameter for a cost of approximately \$7.5M. These tunnels were installed under the CN rail tracks northeast of the intersection of Riverside Drive and Wonderland Road South. This component of the project bore additional risk as it required specialized microtunnelling technologies in variable soil conditions. City Staff are pleased to report that this component of the construction was successfully completed by the end of December 2020. These tunnels were constructed in preparation for the significant channel expansion of the Mud Creek north and south of the CN Rail.

The upcoming Phase 1B works involve constructing a deeper and wider natural channel corridor (up to approximately 60m wide) to connect the constructed tunnels to the existing box culvert on Wonderland Road South, all to support creek flow to the Thames River and reduce flooding north of Proudfoot Lane. Please see Appendix ‘B’ Location Map for details on project location and phasing.

2.0 Discussion and Considerations

2.1 Environmental Considerations

The Mud Creek natural channel design blends the practices of engineering, fluvial geomorphology, ecology, and biology to create an environmentally sustainable corridor to enhance terrestrial and aquatic habitats as well as improve water quality of the creek. The natural channel design includes pools and riffles to support aquatic species and amphibian lifecycles.

The Environmental Impact Study (EIS) completed during the Mud Creek Municipal Class Engineering Assessment (EA) (CH2M, 2017) identified appropriate mitigation and compensation measures to ensure that the recommended construction project will create a sustainable channel to support a healthier ecosystem in the medium to long-term.

The vast majority of mature trees were removed from the corridor south of CN Rail in March 2019 to prepare for the Phase 1A tunnelling and Phase 1B channel construction. Following the Phase 1B channel construction, a robust landscaping plan will be implemented to plant native species of trees and vegetation along the natural channel corridor to maximize regrowth. The plan recommended by the EIS is to replace the originally removed trees at a ratio of 3:1. This will occur during upcoming phases and throughout the subwatershed due to space limitations.

Following channel construction, it is anticipated that it will take approximately 2-3 years for this section of the Mud Creek to establish as a robust ecosystem. Environmental Monitoring will be completed for two years following construction to ensure the survival of vegetation and creek naturalization.

2.2 Upcoming Phases

The future Phase 2 Mud Creek channel reconstruction project will further extend the natural channel from north of CN Rail to Oxford Street West. This section will include a pedestrian pathway for recreational access. The Request for Proposal is currently being prepared to award the consultant for Phase 2 detailed design this spring in preparation for 2022 construction.

The 2021 Development Charges schedule includes a Phase 3 natural channel corridor extension from Oxford Street northerly to CP Rail. This project is currently scheduled to be completed by private developers in conjunction with the servicing of the proposed subdivision and associated development applications.

Following completion of Phase 3, the Mud Creek will be a continuous channel corridor that is approximately 2.3 kilometres in length. From CP Rail to CN Rail (approximately 2 km) will include a paved multiuse pathway for recreational purposes. The pathway alongside the natural channel corridor will provide an active recreational space for the existing residents of the Proudfoot Lane apartment buildings and future development within the subwatershed, thus providing the opportunity for physical and mental health benefits for the local community.

3.0 Financial Impact/Considerations

The Phase 1B channel works are scheduled to commence in summer 2021 with an engineering estimate in the magnitude of \$1-1.5M; therefore, an administrative award is anticipated to initiate the contractor and construction.

3.1 Consultant fees

The detailed design of Phase 1B was mostly completed with the Phase 1A works, however, the consultant will need to prepare a separate tender package and to provide full-time inspection services and contract administration.

This project was originally awarded to CH2M Hill in accordance with Section 15.2(g) of the Procurement of Goods and Services Policy. Civic Administration is recommending that CH2M HILL Canada Limited be authorized to complete the tender and conduct Contract Administration of the Phase 1B Mud Creek reconstruction.

4.0 Key Issues and Considerations

4.1. Public Engagement

The residents of Braemar Crescent and Wonderland Road South express continued interest in the tunnelling and channel project as their homes overlook the Mud Creek valley. City Staff conducted an outdoor meeting with interested residents in the fall of 2020 to clarify the extents of Phase 1A works and long-term plans. Similarly, for Phase 1B, it is proposed to host socially distanced site meetings with residents to inform them of the scope and details of the channel project, all in accordance with applicable physical distancing requirements.

Conclusion

The Mud Creek Phase 1B Channel Reconstruction project is scheduled to be tendered this spring and constructed over the summer and fall of 2021. We recommend that the consulting fees associated with tender preparation and construction administration be allocated to CH2M Hill Consulting to prepare for, and execute, the construction of the channel between the CN Rail and Wonderland Road South. The consultant award for the Phase 2 detailed design will be issued as an RFP. The consultant award for Phase 2 will be presented to committee this spring to prepare for the extension of the channel corridor north of the CN Rail to Oxford Street in 2022.

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

Submitted by: **Scott Mathers, MPA, P. Eng.**
Director, Water and Wastewater

Recommended by: **Kelly Scherr, P. Eng., MBA, FEC**
Managing Director, Environmental and Engineering
Services and City Engineer

Appendix 'A' Sources of Financing
Appendix 'B' Location and Phasing Map

Appendix "A"

#21012

February 9, 2021

(Consultant Contract Increase)

Chair and Members

Civic Works Committee

RE: Mud Creek Phase 1B Channel Reconstruction - Consultant Appointment for Tendering and Construction Administration
(Subledger SWM17006)

Capital Project ES2681 - Mud Creek East Branch Stormwater Servicing and Improvements

Capital Project ES2681-2 - Mud Creek East Branch Phase 2

CH2M Hill Canada Limited - \$2,403,368.00 (excluding HST)

Finance and Corporate Services Report on the Sources of Financing:

Finance and Corporate Services confirms that the cost of this project can be accommodated within the financing available for it in the Capital Budget and that, subject to the approval of the Managing Director, Environmental and Engineering Services and City Engineer, the detailed source of financing is:

Estimated Expenditures	Approved Budget	Committed To This Date	This Submission	Balance for Future Work
ES2681 - Mud Creek East Branch Stormwater Servicing and Improvements				
Engineering	3,064,186	2,963,419	100,767	0
Land Purchase	107,976	107,976	0	0
Construction	6,080,395	6,080,395	0	0
City Related Expenses	7,243	7,243	0	0
ES2681 Total	9,259,800	9,159,033	100,767	0
ES2681-2 - Mud Creek East Branch Phase 2				
Engineering	300,000	0	257,805	42,195
Construction	6,869,600	2,042,523	0	4,827,077
ES2681-2 Total	7,169,600	2,042,523	257,805	4,869,272
Total Expenditures	\$16,429,400	\$11,201,556	\$358,572	\$4,869,272

Sources of Financing

ES2681 - Mud Creek East Branch Stormwater Servicing and Improvements

Debenture By-law No.-W5558-198	185,900	182,036	3,864	0
Drawdown from Sewage Works Reserve Fund	169,167	169,167	0	0
Drawdown from City Services - Stormwater Reserve Fund (Development Charges) (Note 1)	3,174,212	3,174,212	0	0
Debenture By-law No.-W5558-198 (Serviced through City Services Reserve Fund (Development Charges) (Note 1)	5,730,521	5,633,618	96,903	0
ES2681 Total	9,259,800	9,159,033	100,767	0

ES2681-2 - Mud Creek East Branch Phase 2

Drawdown from Sewage Works Reserve Fund	4,524,017	1,288,832	162,675	3,072,510
Drawdown from City Services - Stormwater Reserve Fund (Development Charges) (Note 1)	2,645,583	753,691	95,130	1,796,762
ES2681-2 Total	7,169,600	2,042,523	257,805	4,869,272
Total Financing	\$16,429,400	\$11,201,556	\$358,572	\$4,869,272

Financial Note:

Financial Note:	ES2681	ES2681-2	Total
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Appendix "A"

#21012

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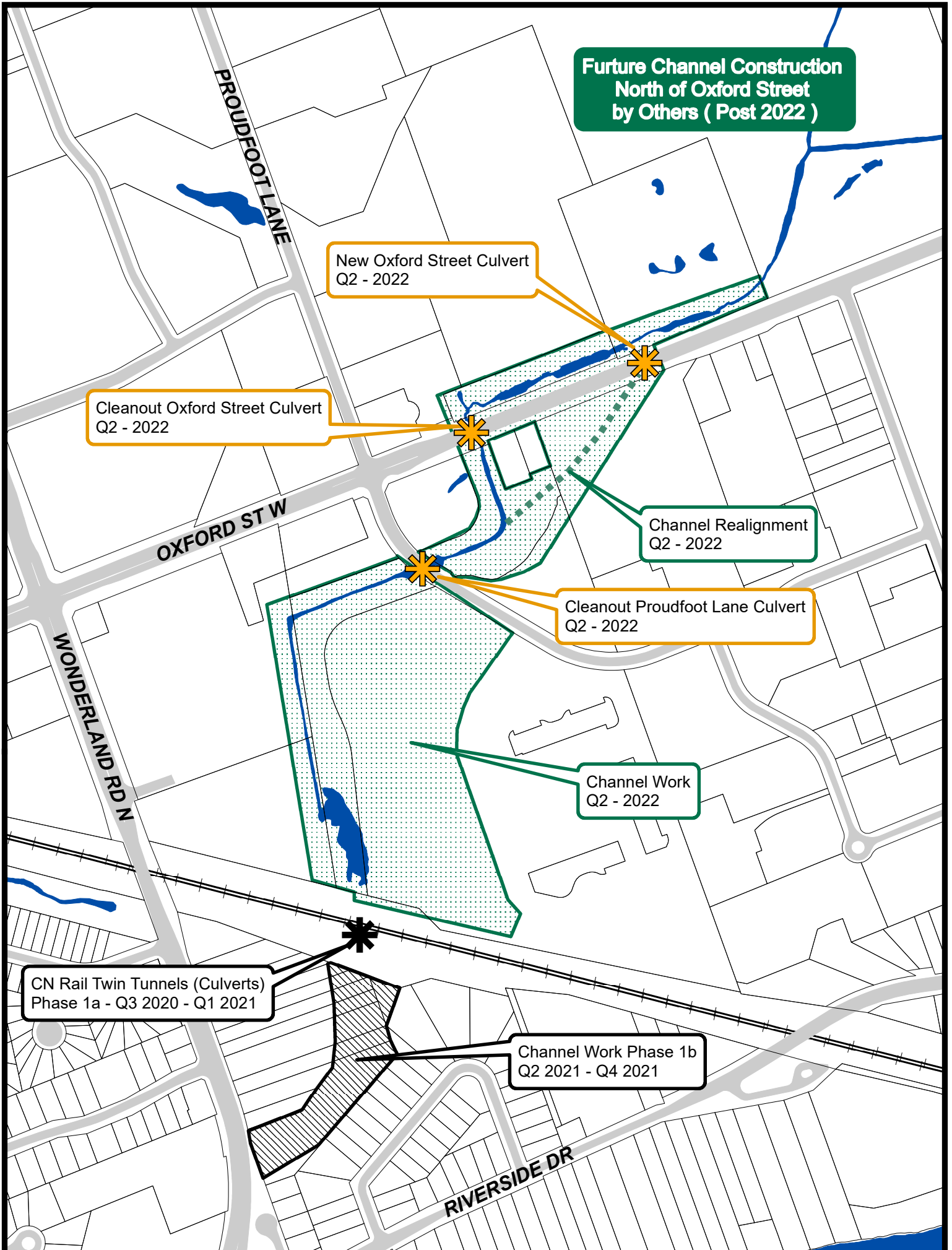
Contract Price	\$2,150,022	\$253,346	\$2,403,368
Less amount previously approved	2,050,998	0	2,050,998
Contract Price	99,024	253,346	352,370
Add: HST @13%	12,873	32,935	45,808
Total Contract Price Including Taxes	111,897	286,281	398,178
Less: HST Rebate	-11,130	-28,476	-39,606
Net Contract Price	\$100,767	\$257,805	\$358,572

Note 1: Development charges have been utilized in accordance with the underlying legislation and the approved 2019 Development Charges Background Study and the 2021 Development Charges Background Study Update.

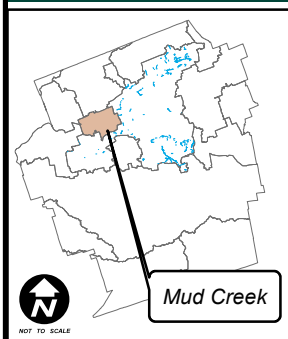
Jason Davies

Manager of Financial Planning & Policy

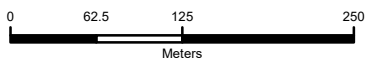
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APPENDIX 'B' - LOCATION AND PHASING MAP



1:5,500



Legend



Culvert Works



Mud Creek Project
General Limits - Phase 1a & 1b



Mud Creek Project
General Limits - Phase 2



Land Parcel



Road



Railroad



Water Body

Map Produced by
the Stormwater
Engineering Division

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