

Report to Civic Works Committee

To: Chair and Members
Civic Works Committee

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

Subject: Contract Award: Tender RFT21-68
Mud Creek Flood Reduction and Channel Rehabilitation
Phase 1b

Date: June 22, 2021

Recommendation

That on the recommendation of Deputy City Manager, Environment and Infrastructure, the following actions **BE TAKEN** with respect to the award of contract for the Mud Creek Flood Reduction and Channel Rehabilitation Phase 1b Project:

- (a) the bid submitted by J-AAR Excavating Limited at its tendered price of, \$3,556,553.50 excluding HST, for the Mud Creek Flood Reduction and Channel Rehabilitation Phase 1b Project, **BE ACCEPTED**; it being noted that the bid submitted by J-AAR Excavating Limited was the lowest of five bids received and meets the City's specifications and requirements in all areas;
- (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 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 material to be supplied and the work to be done, relating to this project (Tender RFT21-68); 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

The purpose of this report is to award the construction contract to J-AAR Excavating Limited to complete the construction of the Mud Creek Flood Reduction and Channel Rehabilitation Phase 1b project.

Context

The Mud Creek Subwatershed is located within a highly urbanized area of west London. Mud Creek has been highly altered with channel realignments to accommodate agriculture and development over the past 100 years. The area has a history of frequent flooding overtopping Oxford Street at Proudfoot Lane and private properties as well as regulatory flooding of 54 hectares of land designated for infill and intensification development. The Mud Creek EA recommended to increase capacity of the CN Rail culvert and to lower the elevation of the main channel by roughly two meters, all to reduce flood frequency and water elevations upstream and enhance the natural environment in the long term.

The Phase 1a construction project involved installing two large diameter pipes (2400mm dia. each) under the CN Rail tracks using microtunnelling technology. This complex project was successfully completed in May 2021. The Phase 1b works involve

expanding a natural channel from the newly constructed culverts to the outlet at the Thames River, located at Wonderland Road North.

Linkage to the Corporate Strategic Plan

This recommendation supports the following 2019-2023 Strategic Plan areas of focus:

- Building a Sustainable City:
 - London's infrastructure is built, maintained, and operated to meet the long-term needs of our community by replacing aged and failing infrastructure with new materials and sizing new infrastructure to accommodate future development.
 - London has a strong and healthy environment by incorporating stormwater management quantity and quantity controls to protect downstream waterways.
 - Building infrastructure to support future development and protect the environment; and
 - 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 – January 6, 2015 – 2015 Burbrook Trunk Storm Sewer Project Initiation
- 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.

2.0 Discussion and Considerations

2.1 Work Description

The Mud Creek EA recommended expanding the culvert capacity under the CN Rail and reconstructing the Mud Creek channel system from the Canadian Pacific (CP) Rail to the Thames River to continue that capacity. Increasing the capacity of the culvert and channel system will provide a significant reduction in the frequency of flooding currently experienced on Oxford Street and private properties, allow for 54 hectares for

mixed use development, as well as provide environmental and habitat enhancements throughout the Mud Creek corridor.

2.2 Completed Phase 1a Twin Culvert Tunnel Works

The Phase 1a tunneling project was the first component of the Mud Creek Flood Reduction and Channel Rehabilitation works which increased the flow capacity of the Mud Creek under the CN Rail.

During detailed design, the consultant recommended two twin culverts (or tunnels) that are 2.4 meters in diameter to improve the flow conveyance through the CN Rail embankment. The two twin culverts were constructed between September 2020 and finished in May 2021.

The new twin tunnels (culverts) and future channel works will be able to convey more flow under the CN Rail to the Thames River, thus alleviating the bottleneck and flooding of lands upstream. In addition, the increase in flow through the culverts will improve the water quality of the Mud Creek, which is essentially stagnant under current conditions. It was determined during the EA that the creek had limited ability to support aquatic life due to lack of available oxygen in the creek.

The Environmental Impact Study (EIS) completed during the EA process 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 long-term.

2.3 Tree Removals

To prepare for the channel construction project, there was significant tree removal completed along the channel corridor in the spring of 2020 to facilitate access to the tunneling site. The EIS identified compensation for this tree removal including reconstruction of a larger channel using natural environmental design principles, ecological habitat enhancements (e.g. wetland pockets), removal of invasive plant species (e.g. buckthorn) and tree replacement with native species at a ratio of 3:1. Compensation for the tree loss will be completed as part of the complete restoration plans for Phase 1b construction.

2.4 Phase 1b Mud Creek Channel Remediation Works

The detailed design of the channel remediation from the south side of the CN Rail to Wonderland Road North will incorporate approximately 265 lineal meters of newly remediated Mud Creek conveyance channel varying in width between 25 and 50 metres. The channel will be lowered by approximately 2.0 metres to provide for future flows from upstream of the CN Rail, via the newly constructed twin tunnel culverts and will tie into the future Phase 2 works. Phase 1b design also incorporates an extensive restoration, tree plantings, habitat features, and augmentation to an existing wetland feature.

3.0 Financial Impact/Considerations

3.1 Tender Summary

Tenders for the Mud Creek Flood Reduction and Channel Rehabilitation Phase 1b Project were issued on May 25, 2021 and closed on June 9, 2021. Five contractors submitted tender prices as listed below, excluding HST.

Table 1: Summary of submitted tender prices

Contractor	Company Name	Tender Price Submitted
1	J-AAR Excavating Limited	\$3,556,553.50
2	Blue-Con Construction	\$3,560,000.00
3	QM LP	\$3,840,499.00
4	DeKay Construction (1987) Ltd.	\$3,953,029.75
5	560789 Ontario Limited o/a R&M Construction	\$4,999,437.90

All tenders have been checked by Environment and Infrastructure and Jacobs Engineering Ltd. No mathematical errors were found. The results of the tendering process indicate a competitive process. The tender estimate just prior to tender opening was \$2.81 M, excluding HST. All tenders include contingency and allowances of \$475,000.

3.2 Financial Implications

Most of this project is funded by Development Charges as the project will facilitate 54 hectares of land that is designated for Rapid Transit Corridor and Neighbourhood growth.

The consultant has estimated that approximately \$7M-\$8M will be required to construct Phase 2, which may trigger an increase to the budget. However, this will be confirmed during detailed design of Phase 2. AECOM is being recommended as the consultant to undertake the Phase 2 design and tender at this June 22, 2021 CWC meeting. Phase 2 is anticipated to be tendered and constructed in Q2 2022.

3.3 Next Steps

The construction timing for the future phases of the project is provided below:

- **Phase 1b** – Natural stream work from Wonderland Road to tie into new CN Rail culverts.
 - Construction start July 2021, completion Dec 2021 with plantings in Spring 2022
- **Phase 2** – Natural channel reconstruction from upstream of CN Rail culvert to new Oxford Street culvert (including Oxford Street culvert replacement).
 - Construction start date Q2 – 2022
- **Phase 3** – Natural channel reconstruction from Oxford Street to CP Rail
 - Developer led in accordance with an approved Subdivision Agreement and timing of the Growth Management Implementation Strategy (GMIS).

A figure highlighting the major components of the overall improvements is included as Appendix 'B' "Location Map".

Conclusion

The Mud Creek Flood Reduction and Channel Rehabilitation Phase 1b includes construction of a new remediated Mud Creek conveyance channel from the south side of the CN Rail to Wonderland Road North including full restoration, new habitat features, tree planting and wetland augmentations.

At this time, it is recommended that J-AAR Excavating Limited be awarded the construction contract for the construction of the Mud Creek Flood Reduction and Channel Rehabilitation Phase 1b in the respective amounts identified above.

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

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

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

CC: P. Titus, R. Stolarz, S. Mollon

Appendix 'A' – Sources of Financing

Appendix 'B' – Location Map

Appendix "A"

#21110

June 22, 2021

(Award Contract)

Chair and Members

Civic Works Committee

RE: RFT21-68 - Mud Creek Flood Reduction and Channel Rehabilitation Phase 1b

(Subledger SWM17006)

Capital Project ES2681-2 - Mud Creek East Br. Phase 2

J-AAR Excavating Limited - \$3,556,553.50 (excluding HST)

Finance Supports Report on the Sources of Financing:

Finance Supports 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 Deputy City Manager, Environment and Infrastructure, the detailed source of financing is:

Estimated Expenditures	Approved Budget	Committed To Date	This Submission	Balance for Future Work
Engineering	831,933	831,933	0	0
Construction	6,337,667	2,042,523	3,619,149	675,995
Total Expenditures	\$7,169,600	\$2,874,456	\$3,619,149	\$675,995

Sources of Financing

Drawdown from Sewage Works Renewal Reserve Fund	4,524,017	1,813,782	2,283,683	426,552
Drawdown from City Services - Stormwater Reserve Fund (Development Charges) (Note: 1)	2,645,583	1,060,674	1,335,466	249,443
Total Financing	\$7,169,600	\$2,874,456	\$3,619,149	\$675,995

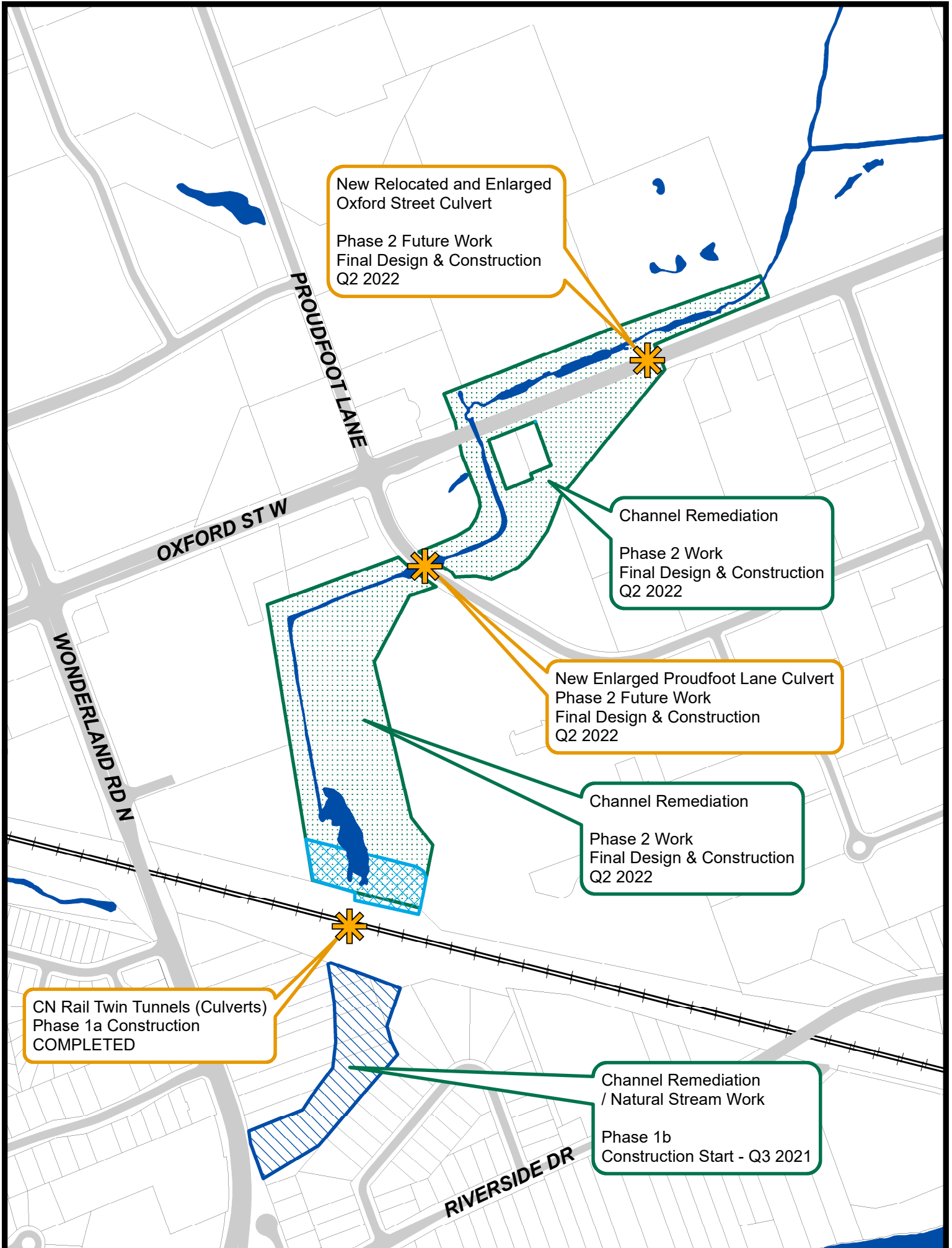
Financial Note:

Contract Price	\$3,556,554
Add: HST @13%	462,352
Total Contract Price Including Taxes	4,018,906
Less: HST Rebate	-399,757
Net Contract Price	\$3,619,149

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 MAP

Mud Creek

1:5,500

Meters

Legend:

- Bridge / Culvert Works
- Mud Creek Project Limits - Phase 1a
- Mud Creek Project Limits - Phase 1b
- Mud Creek Project Limits - Phase 2
- Land Parcel
- Road
- Railroad
- Water Body

Map Produced by
the Stormwater
Engineering Division

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