

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: Contract Award: Tender RFT 21-97 Adelaide Street North CPR
Underpass Project – Irregular Result

Date: March 29, 2022

Recommendation

That on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN** with respect to the Adelaide Street North CPR Underpass Project:

- a) The bid submitted by McLean Taylor Construction Limited at its tendered price of \$60,191,223.44 excluding HST, **BE ACCEPTED** in accordance with the Procurement of Goods and Services Policy Section 8.10 (a) and 13.2 (b); it being noted that this is an irregular result because the cost exceeds the project budget; it also being noted that the bid submitted by McLean Taylor Construction Limited was the lowest of three bids received and meets the City's specifications and requirements;
- b) WSP Canada Inc. Consulting Engineers **BE AUTHORIZED** to complete the contract administration and construction supervision required for this project as well as additional engineering activities, all in accordance with the estimate on file, at an upset amount of \$5,280,625.90 including contingencies and excluding HST, and in accordance with Section 15.2 (g) of the City of London's Procurement of Goods and Services Policy;
- c) the financing for the project **BE APPROVED** in accordance with the "Sources of Financing Report" attached hereto as Appendix A;
- d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project;
- e) the approvals given, herein, **BE CONDITIONAL** upon the Corporation entering into a formal contract with the consultant for the work;
- f) the approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract for the material to be supplied and the work to be done relating to this project (Tender 21-97); and,
- g) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents including railway purchase orders, if required, to give effect to these recommendations.

Linkage to the Corporate Strategic Plan

The following report supports the Strategic Plan through the strategic focus area of Building a Sustainable City and Growing our Economy by implementing and enhancing safe and convenient mobility choices for pedestrians, cyclists, transit and automobile users.

A new road-rail grade separation on Adelaide Street at the CPR crossing will increase roadway safety by removing the potential for conflict between pedestrians, cyclists, commuters and railway operations, improve traffic flow by managing congestion and

provide route reliability for emergency services, local transit and economic development. The new grade separation will also improve active transportation choices and connectivity for the community and reduce cut-through traffic in adjacent neighbourhoods. Implementation of the grade separation is a strategic Complete Street component of London's comprehensive program of transportation improvements.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

- Environment and Transportation Committee – November 28, 2005 – Priority Setting Factors for Future Rail / Road Grade Separations
- Civic Works Committee – June 19, 2012 – London 2030 Transportation Master Plan
- Civic Works Committee – October 28, 2013 – Adelaide Street North / Canadian Pacific Railway Grade Separation Report
- Strategic Priorities and Policy Committee – June 23, 2014 – Approval of 2014 Development Charges By-Law and DC Background Study
- Civic Works Committee – January 5, 2016 – Environmental Assessment Appointment of Consulting Engineer
- Civic Works Committee – December 12, 2016 – Environmental Assessment Update
- Civic Works Committee – September 26, 2017 – Transport Canada Grade Crossing Regulations and Railway Funding Application
- Civic Works Committee – May 28, 2018 – Railway Rationalization
- Civic Works Committee – August 13, 2018 – Environmental Study Report
- Civic Works Committee – January 8, 2019 – Detailed Design & Tendering Appointment of Consulting Engineer
- Civic Works Committee – June 18, 2019 – Memorandum of Understanding with Canadian Pacific Railway Company
- Civic Works Committee – March 30, 2021 – Adelaide Street Underpass Project: Subway Construction Agreement and Crossing and Maintenance Agreement
- Strategic Priorities and Policy Committee – October 28, 2019 – ICIP Public Transit Stream Approved Projects
- Civic Works Committee – March 30, 2021 – ICIP Public Transit Stream Approval of Transfer Payment Agreement

1.2 Purpose

This report recommends the award of construction tender RFT 21-97 for the Adelaide Street North CPR Underpass Project to McLean Taylor Construction Limited. It also recommends that the existing engineering agreement with WSP Canada Inc. be extended to include contract administration, construction supervision and additional engineering activities required for the project.

The low bid for the construction contract resulting from the tendering process is identified as irregular because the cost exceeds the City's project budget. The construction procurement process was rigorous and established the cost of the project in the current dynamic capital construction environment. The project budget was previously set at \$58.3 M based on the environmental assessment finalized in 2018. The total amount of additional funding required to complete the project is \$29.3 M, including additional funding from London Hydro, which would represent a total project cost of \$87.6 M. The proposed financing plan to complete the project is described in the report.

2.0 Context

Adelaide Street North is an important civic boulevard. Improvements to install a new grade separation with the road passing beneath the railway will accommodate pedestrians, cyclists, transit and commercial and passenger automobiles in a safe and efficient manner and improve mobility within the surrounding community.

The CPR crossing of Adelaide Street North was identified as the City's highest priority candidate for a new rail-road grade separation. The crossing, located on Mile 113.73 of CPR's Galt Subdivision, comprises two rail tracks across Adelaide Street North. The Galt Subdivision is a critical route for CPR's service between Canada and America, including local customers in the London area. CPR's rail yard operates on the east side of Adelaide Street North and functions as a primary train assembly point, including shunting operations and a crew hub.

The Adelaide Street Underpass Project was first identified in the 2014 Transportation Development Charges Background Study, with a recommendation for construction in 2031. Due to the crossing's strategic location, the Smart Moves 2030 Transportation Master Plan also identified the need for traffic capacity optimization and transit priority on this corridor.

In 2018, an Environmental Study Report for the Adelaide Underpass Project was completed which addressed improvements to the transportation system, creating a safe crossing of the CPR railway, and readied the project with respect to future infrastructure funding programs.

At Council's direction, the project timing was adjusted in the 2018 Budget Update and the Development Charges Background Study for near-term implementation. The budget amendment identified accelerated project implementation with construction starting as early as 2021. Utility relocations, property acquisition, railway concurrence, and design coordination related to the scale and complexity of the project were completed and the project construction procurement process was commenced in 2021. The Adelaide Underpass Project will benefit the city and CPR by improving safety at the crossing and eliminating conflicts between all road users and train traffic.



Adelaide Street North CPR Underpass Project Limits

3.0 Discussion and Considerations

3.1 Project Description

The Adelaide Underpass Project is a complex project involving numerous property acquisitions, advance utility relocations and several external approvals. The proximity of the grade separation to the CPR yard, and the constrained nature of the site provide unique challenges for both design and construction of this project.

The project was recently reviewed using the Climate Emergency Screening Tool. The screening tool review endorsed the project as a strategic optimization of an existing corridor that provides significant benefits for a large number of residents noting that the current at-grade crossing represents a barrier to active modes and transit as well as commercial and personal vehicles. The project will increase the safety and reliability of the corridor for all road users and reduce cut-through traffic in adjacent neighbourhoods. The underpass will help promote the increased use of sustainable transportation modes by providing complete streets amenities. All ages and abilities active transportation connections will better connect neighbourhoods north and south of the rail line and yard where limited crossings exist, McMahan Park, and planned bike lanes on Central Avenue. The project also improves emergency service reliability.

Once complete, Adelaide Street North will include a new four-lane underpass grade separation with elevated multi-use pathways, a permanent utility corridor on the east side of Adelaide Street, new storm and ground water management infrastructure, and enhanced streetscaping elements.

The primary scope of the project will include:

- A new CPR railway bridge to convey two rail lines over Adelaide Street.
- Lowering, reconstruction and construction of new retaining walls along Adelaide Street North from Elias Street to just north of McMahan Street with pedestrian connectivity to McMahan Park.
- A temporary detour road on the east side of Adelaide Street to maintain two lanes of traffic and a sidewalk during construction.
- Relocation and rebuilding of the historic McMahan Park gate features.
- Landscaping features such as new street furniture, planters, planting beds, and trees.
- Road reconstruction on Central Avenue from William Street to Elizabeth Street including new municipal services and improved alignment across Adelaide Street.
- Intersection improvements at Pall Mall Street including a new pedestrian crossing.
- Intersection improvements at McMahan Street.
- Street lighting and traffic signals.
- Sanitary sewer, storm sewer and watermain relocation and improvements.
- New stormwater pumping station.
- Permanent groundwater control system.

Construction of this tendered project would start in the spring of 2022 with completion anticipated in the summer of 2024.

3.2 Traffic Management

Traffic connectivity will be maintained during the construction project by routing traffic around the construction area utilizing a temporary two-lane road detour on the east side of Adelaide Street North. To facilitate pedestrian crossing of the rail tracks and access

to McMahan Park, a temporary asphalt sidewalk will be constructed along the detour road. Due to the space constraints of the site, and to maintain a safe worksite for workers and pedestrians, the temporary sidewalk will be limited to the east side of the detour road.

Temporary off-peak closures of Adelaide Street North, as well as the closure of Central Avenue between William Street and Elizabeth Street, will be required at different stages of construction. Advanced public notices will be provided prior any closure taking place. A comprehensive traffic calming plan will be implemented in the surrounding community to assist in managing speeds and cut-through traffic during construction.

4.0 Financial Impact/Consideration

4.1 Tender Summary

The magnitude and complexity of this project required an extensive and thorough procurement process. The construction procurement process began on April 30, 2021, with the posting of an RFQUAL (21-07) to prequalify contractors. Posting the RFQUAL added rigour to the process in recognition of the complexity and magnitude of the project. Seven contractors were prequalified. The tender for qualified contractors was subsequently published on November 18, 2021. Tenders for the Adelaide Street North CPR Underpass Project (T21-97) were opened on February 1, 2022. Three contractors submitted their prices as listed below, excluding HST:

Contractor	Company Name	Tender Price Submitted
1.	McLean Taylor Construction Limited	\$60,191,223.44
2.	Bot Engineering & Construction Ltd.	\$68,495,000.00
3.	Dufferin Construction Company, A division of CRH Canada Group Inc.	\$91,564,000.00

All tenders have been reviewed by the City's consultant and the Environment and Infrastructure Service Area and include the required \$5.5 M tender contingency amount. No mathematical errors were found, and the bids were determined to be compliant. The result of the tendering process indicates a competitive process; however, the limited number of bidders when compared to the number that were pre-qualified could suggest strained market capacity. This could be the result of construction labour market limitations and supply chain disruptions that restrict the availability of both personnel and some critical construction materials. These factors, combined with the large number of infrastructure construction projects in the London area and across the province and country, translate to reduced contractor availability for projects and increased cost and risk transfer to infrastructure owners, particularly for specialized services as are required for this project. This consideration is further amplified for this project as there is a limited number of specialized contractors for some components of the work.

This is a unique and complex project that includes items which are challenging to accurately estimate during the design phase, particularly given current industry wide supply chain challenges and rapid rates of inflation for construction materials and labour. The low tender exceeds the approved funds for the project. Based on the tender analysis and comparison against the EA cost estimate, the project exceedance is related to the following factors that are listed in descending order of magnitude:

- Cost uncertainty and risk with respect to material fabrication and impacts to the project schedule for the structural steel and other bridge components. High demand and increasing material costs have substantially increased steel supply

and fabrication costs. Given the rapid rise in costs, it has been challenging to estimate supply chain impacts on schedule and cost.

- Recent construction price escalation and projected increases over the two-year project duration. Rapid construction cost increases are typified by the 11.6% increase in the last 12 months in the Statistics Canada Non-Residential Building Construction Price Index.
- Groundwater management design for the project is complex to prevent migration of groundwater into the underpass. This design reduces ongoing operating costs, but the construction of this wall system is complex and requires specialized equipment and contractors.
- Recent changes to provincial regulations regarding the management of excess materials and the monitoring and treatment of groundwater during construction has resulted in additional costs.
- Complex construction sequencing and scheduling constraints related to the limited allowance for the railway track closures.
- Recent national events have increased the railway insurance requirements and associated costs are variable.
- Labour shortages, increasing costs for skilled labour and increased risk.
- Uncertainty of further restrictions and anticipated continued pandemic-related project risks.

4.2 Consultant Services

WSP was awarded the detailed design of the Adelaide Street North at CPR Underpass Project by Council on January 29, 2019. With the consultant's knowledge and performance during the EA and detailed design phases of the project, the consultant was invited to submit a proposal to carry out the contract administration, construction supervision and additional engineering activities associated with this final phase. Staff have reviewed the fee submission, including the time allocated to each project task, along with hourly rates provided by each of the consultant's staff members. The review of assigned personnel and hourly rates for various activities are in alignment with the original competitive procurement and with other infrastructure assignments.

The continued use of WSP on this project for construction administration phase is of financial advantage to the City because the firm has specific knowledge of the project and has undertaken work for which duplication would be required if another firm were to be selected. The City's requirement for the creation of record drawings following construction requires the reviewing professional engineer to seal the drawings based on field verification and ongoing involvement. This requirement promotes consultant accountability for the design.

In accordance with Section 15.2(g) of the Procurement of Goods and Services Policy, Civic Administration is recommending that WSP Canada Inc. be authorized to carry out the remainder of engineering services, as contract administrators, and complete the project for a fee estimate of \$5,280,625.90, excluding HST. These fees include additional engineering effort required for the municipal infrastructure replacement beyond the original project limits, liaison role during the tendering period, unforeseen design and coordination challenges and environmental monitoring responsibilities during construction all of which are related to the complexity of the project.

4.3 Capital Funding

The approved budget reflects the 2018 environmental assessment planning study estimate of \$58.3 M (capital project TS1306), noting that life-to-date spending on this project is approximately \$22.0 million. The total costs to complete the project exceed the

available budget by \$29.1 M, after additional funding provided by Water, Wastewater, Parks and London Hydro related to their respective portions of the additional costs.

The remainder of project shortfall is proposed to be funded as follows:

Additional Sources of Financing		
Transportation Life Cycle Renewal Budget – TS1446	\$11.2 M	Transferable funding is available in this lifecycle renewal project, noting the Highbury Avenue project deferral described below.
Additional Tax Supported Debt Financing - new funding added to budget	\$8.4 M	Debt financing is available under the City's debt management practices.
Additional Development Charges – City Services Roads Reserve Fund	\$9.5 M	Project is 32.7% DC funded. This is new money added to budget, noting that the Southdale / Wickerson project deferral described below will provide a partial offset to the City Services Roads Reserve Fund
Total	\$29.1 M	

The aim of this financing approach is to balance the need for additional tax-supported and Development Charges funding against the immediate and future impacts on these funding sources. As noted in the table, the funding plan requires the deferral of two Transportation Capital projects as described below:

- The pavement rehabilitation of the Wenige Expressway (Highbury Avenue freeway between Hamilton Road and Hwy 401), which is planned to start as early as 2023, would be postponed by 3 to 5 years. This delay will create a lower level of service on the asset, but the risk is low because the concrete pavement deteriorates at a slow rate, and this can be managed through ongoing monitoring and maintenance repairs.
- Southdale Road and Wickerson Road Two-lane Upgrades from Byronhills Drive to 650 m north of Southdale Road would also be deferred with a new near-term timing to be determined through the 2025 DC Background Study process. A single project is planned for these roads that connect developing areas to flatten the road to improve sight lines and add sidewalks, bike lanes and a multi-use path connection. The project construction currently can start no earlier than 2023 due to new site information including archaeology conditions. The deferral would delay the implementation of the road operational improvements and new active transportation infrastructure, but would also provide time to better define site conditions, ensure appropriate archaeological plans are in plan, and refine the project cost estimate. Deferring these two projects, TS1407-2 and TS1408, in the Transportation growth capital plan will alleviate approximately \$5.0 M of financing pressure on the City Service Roads Reserve Fund and future development charge rates – offsetting the impact of requiring \$9.5 M of additional funding to construct the Adelaide Grade Separation project.

A portion of the project costs are being funded through the Investing in Canada Infrastructure Program (ICIP) Public Transit Stream via the Adelaide Street Underpass Active Transportation Connections project. Under this program, the federal and provincial governments have committed \$11.1 M towards the active transportation components of this project. The funding program requires the project to be complete by October 2027.

CPR will also contribute a fixed amount of \$8.75 M towards the costs of the project in

accordance with an existing contribution agreement as noted in the Source of Financing Report, attached as Appendix A.

The contract would be managed carefully to potentially realize cost efficiencies and surpluses from the contingency amounts that are identified in both the construction and engineering contracts.

4.4 Operating Costs

Anticipated annual operating costs associated with additional infrastructure is summarized below:

Service Area	Rationale	Increase in Annual Operating Cost
Roadway Operations	Additional maintenance required for the roadway, bike lanes, multi-use pathways, and retaining walls.	\$4,250
Transportation Planning and Design	Additional structural inspection requirements	\$2,500
Traffic Engineering	Additional costs for streetlights, pavement markings and electrical equipment	\$11,903
Forestry Operations	Additional tree maintenance	\$2,500
Parks Operations	Additional landscaping and irrigation maintenance	\$22,500
Sewer Operations	Operating cost for additional sewers and new stormwater storage facility	\$7,100
Water Operations	Maintenance of additional water valves	\$75
Wastewater Treatment Operations	Operating cost for the new Pump Station	\$10,000

The property tax supported operational budget impacts will be addressed as part of the annual assessment growth process where appropriate, while the additional Water and Wastewater costs will be addressed in future budget processes.

5.0 Other Considerations

5.1 Procurement Process

The procurement policy provides the option to not award the tender, given the value is in excess of the City Council approved budget. However, a non-award would require the current procurement process to be terminated. Any re-initiation of the project in the future would need to consider sufficient passage of time and change of project scope for the integrity of the procurement process. Identifying project scope changes would be challenging given the required single-phase nature of the project. Additional challenges associated with non-award and future project re-initiation would include:

- Re-initiating the project in the future may have further cost uncertainty given construction price increases and ongoing global supply chain challenges;
- There are coordination risks with CP Rail that could complicate future construction staging and result in additional costs;
- Project delays could jeopardize external funding for this project, as the ICIP funding for this project has a program completion date of October 2027.

5.2 Process Improvement

The results of this tender have prompted administration to scrutinize existing project management processes to improve cost estimate reliability and budget alignment. This project reinforces the importance of regularly reviewing approved budgets relative to project cost estimates at various phases throughout the project, particularly for complex projects with an extended construction procurement phase proceeding in parallel with design completion. This is particularly true in the current environment of cost volatility due to industry supply chain and labour pressures. For other large complex projects with unique elements for which cost estimating databases are limited and volatility is higher, risk-based cost estimating and third-party estimate reviews are process improvements that will be considered.

Conclusion

Implementation of the City's highest priority grade separation at Adelaide Street North and the CP Railway is an important component of London's program of mobility improvements that will mitigate the impact of rail activity for London residents on an important economic and transit corridor.

Improvements to this civic boulevard rail crossing will provide improved pedestrian, cyclist, and transit user amenities consistent with Complete Streets principles. This project will directly improve safety and reliability by eliminating the at-grade crossing, reduce cut-through traffic in nearby neighbourhoods and improve active transportation and quality of life. There are also benefits associated with improving emergency service and transit reliability associated with the current at-grade crossing.

This complex unique project implemented a thorough design and consultation process to develop the required solution. The procurement process was rigorous and established the cost and value of the project in the current dynamic capital construction environment. Civic Administration has reviewed the tender bids, created a financing plan, and recommends that the construction contract for the Adelaide Street North at CPR Underpass Project be awarded to McLean Taylor Construction Limited in the amount of \$60,191,223.44 excluding HST. It is also recommended that WSP Canada Inc. be authorised to carry out the construction administration and coordination to complete this project for a fee estimate of \$5,280,625.90 excluding HST in accordance with Section 15.2 (g) of the City of London's Procurement of Goods and Services Policy.

Prepared by: Garfield Dales, P.Eng., Division Manager, Transportation Planning and Design

Submitted by: Doug MacRae, P. Eng., MPA, Director, Transportation & Mobility

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

Attach: Appendix A: Source of Financing Report

c: Manager of Purchasing and Supply
McLean Taylor Construction Limited
WSP Canada Inc.