

Non-competitive Contract with LEA Consulting Limited for Detailed Design Services for the Replacement of the Dufferin Street Bridges over the Metrolinx Rail Corridor and F.G. Gardiner Expressway

Date: August 31, 2021

To: Infrastructure and Environment Committee

From: Chief Engineer and Executive Director, Engineering and Construction Services and Chief Procurement Officer, Purchasing and Materials Management

Wards: 4 (Parkdale-High Park) and 10 (Spadina-Fort York)

SUMMARY

The purpose of this report is to request authority for the Chief Engineer and Executive Director, Engineering and Construction Services, to negotiate and enter into a non-competitive contract with LEA Consulting Limited. The contract is for professional engineering services for the detailed design of the replacement bridges at Dufferin Street over the Metrolinx Rail Corridor and F.G. Gardiner Expressway, and the new Toronto Transit Commission's Dufferin Gate Streetcar Loop. The estimated value of the non-competitive contract is \$3,551,862 net of HST, \$3,614,375 net of HST recoveries.

There is an urgent need for the award of this contract due to several years of delays. Metrolinx had previously informed the City that they would undertake the bridge replacement work. However, after significant discussion with City Staff, Metrolinx have now advised that the City will need to assume responsibility for the bridge works. This has resulted in the need for accelerated detailed design in advance of construction. Entering into a non-competitive contract with LEA Consulting Limited will enable the City to maintain the necessary schedule and proceed with the replacement of the temporary bridges which are nearing the end of their expected service life, with construction starting in 2024.

The scope of work combines the design for replacement of the bridges at Dufferin Street over the Metrolinx Rail Corridor and the F.G. Gardiner Expressway and the design for reconstruction of the Dufferin Gate Streetcar Loop requested by the Toronto Transit Commission, in anticipation of a single construction contract, thus avoiding traffic and streetcar service disruptions along Dufferin Street in subsequent years.

City Council approval is required in accordance with Municipal Code Chapter 195-1 Purchasing, where the current request exceeds \$500,000 under Section 1 of the Purchasing By-Law and allowed under staff authority as per the Toronto Municipal Code, Chapter 71- Financial Control, Section 71-11A.

RECOMMENDATIONS

The Chief Engineer and Executive Director, Engineering and Construction Services and the Chief Procurement Officer, Purchasing and Materials Management recommend that:

1. City Council authorize the Chief Engineer and Executive Director, Engineering and Construction Services to negotiate and enter into a non-competitive agreement with LEA Consulting Limited, on terms and conditions satisfactory to the Chief Engineer and Executive Director, Engineering and Construction Services and in a form satisfactory to the City Solicitor for the detailed engineering design of the Dufferin Street Bridges over the Metrolinx Rail Corridor and F.G. Gardiner Expressway. The estimated amount of this non-competitive contract is \$3,551,862 net of HST, \$3,614,375 net of HST recoveries, including disbursements, provisional allowances and contingencies.

FINANCIAL IMPACT

The total contract award identified in this report is \$4,013,604 including all applicable taxes and charges and \$3,551,862 net of HST. The total cost to the City is \$3,614,375 (net of HST recoveries).

Funding for this non-competitive contract is available in the 2021-2030 Approved Capital Budget and Plan for Transportation Services (City Bridge Rehabilitation Program and City Bridge Rehabilitation Critical Program) as summarized in Table 1 below (net of HST recoveries).

Table 1: Financial Impact Summary

Calendar Year	CTP515-01-197	CTP515-01-198 (Work for TTC)	Total (Net of HST Recoveries)
2021	\$203,520	\$101,760	\$305,280
2022	\$597,840	\$593,180	\$1,191,020
2023	\$597,840	\$593,179	\$1,191,019
2024	\$372,894	\$372,834	\$745,728

Calendar Year	CTP515-01-197	CTP515-01-198 (Work for TTC)	Total (Net of HST Recoveries)
2025	\$66,466	\$114,862	\$181,328
Total (Net of HST Recoveries)	\$1,838,560	\$1,775,815	\$3,614,375

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

On October 1, 2014, by authority of the Bid Committee, the City retained LEA Consulting Limited for the provision of professional engineering services associated with Request for Proposal Number 9117-14-5060 for a feasibility study and preliminary design for the permanent replacement of the Dufferin Street Bridges over the Metrolinx Rail Corridor and F.G. Gardiner Expressway. The total fee for this professional engineering services assignment was \$745,044 (net of all taxes and charges). Purchase Order Number 6040262 for professional engineering services was issued to LEA Consulting Limited in the amount of \$745,044 (net of all taxes). A copy of the Bid Committee Decision Document can be found at: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.BD201.1>

COMMENTS

Background

In 2011, the City, in conjunction with the Toronto Transit Commission and Metrolinx/GO Transit, completed a Municipal Class Environmental Assessment to evaluate viable alternatives for the replacement of the Dufferin Street Bridges over the Metrolinx/GO Transit Rail Corridor (Lakeshore West) and F.G. Gardiner Expressway, respectively. The Dufferin Street Bridges connect the south end of Parkdale to Exhibition Place. Dufferin Street is classified as a minor arterial road and provides an important connection to Lake Shore Boulevard West on the west side of Exhibition Place (Attachment 1).

LEA Consulting Limited provided professional engineering services for the completion of the Environmental Assessment from 2009 to 2011. The recommended bridge replacements include a 30 metre single span precast box girder bridge over the rail corridor, and a 35 metre single span welded steel plate box girder bridge over the F.G. Gardiner Expressway. The vertical profile of Dufferin Street between Springhurst Avenue and Saskatchewan Road (within Exhibition Place) is substantially raised and

Non-competitive Contract with LEA Consulting Ltd., for Detailed Design Services for the Replacement of the Dufferin St. Bridges over the Metrolinx Rail Corridor and F.G. Gardiner Expressway

modified to account for the vertical clearance required by Metrolinx and the protection of future turning movements of Toronto Transit Commission streetcars at the south end of bridge over the F.G. Gardiner Expressway. The new vertical profile requires the relocation of the Dufferin Arch to accommodate the proposed road grades.

In 2013, the Dufferin Street Bridge over the Metrolinx Rail Corridor was demolished because it had reached the end of its service life and there were safety concerns related to its condition. In 2014, as part of the demolition work, temporary modular bridges were installed in order to re-open the road in advance of the planned permanent construction of the bridge structure at the site, as shown in Attachment 2. There are three modular bridges, one carrying northbound traffic, one carrying southbound traffic, and one pedestrian bridge to the east of the road carrying bridges. The modular bridges were designed for a service life of ten (10) years. The adjacent bridge over the F.G. Gardiner Expressway is shown in Attachment 3.

In October 2014, the City retained LEA Consulting Limited through a Request for Proposal to undertake a feasibility study and complete the preliminary design for the Dufferin Street Bridges to implement the preferred alternative identified in the completed Environmental Assessment.

In 2015, Metrolinx advised the City that, due to the planned electrification of the Metrolinx/GO Lakeshore West Rail Corridor, they were unable to confirm the minimum vertical clearance (MVC) requirements. As a result, the City was unable to advance the preliminary design assignment for the Dufferin Street Bridges and the project was put on hold.

After two years of consultation and discussion, Metrolinx informed the City, in November 2017, that Metrolinx would assume the responsibility for the completion of the necessary design and construction of the permanent replacement bridges at Dufferin Street, along with both the Dunn Avenue and Dowling Avenue Bridges. Metrolinx advised the City that the risk associated with the City completing the projects may jeopardize their planned project to electrify the Lakeshore West Rail Corridor. In January 2018, Metrolinx also reconfirmed its commitment to the City on the delivery of the permanent Dunn Avenue, Dowling Avenue, and Dufferin Street Bridges in a forthcoming GO Expansion procurement package.

In September 2019, Metrolinx informed the City that the Dunn Avenue, Dowling Avenue, and Dufferin Street Bridges would no longer be included in their GO Expansion procurement package. Metrolinx also advised that, upon re-evaluation and agreement with the Canadian National Railway Company and Canadian Pacific Railway Company, existing vertical clearances on all three bridges were deemed sufficient to meet electrification requirements. Since that time City staff have held discussions with Metrolinx, without success, to explore if they could still undertake the works.

Metrolinx's decision to accept the existing minimum vertical clearance of the Dufferin Bridge has significant implications for the preliminary design, which was nearing

completion in September 2019. As a result of the decision to maintain the existing vertical clearance, LEA Consulting Limited has revised the preliminary design, at the City's cost, and is once again near completion.

The ten (10) year service-life of the temporary bridges installed in 2014, results in a need for the bridges to be replaced within the next three (3) to four (4) years. Metrolinx's proposed electrification barriers and equipment cannot be attached to the temporary structures and it is strongly recommended that the bridges be replaced prior to electrification of the Lakeshore West Rail Corridor. In addition, complete demolition of the temporary bridges and the original abutments is a very significant undertaking that will have major implications to the rail traffic on the corridor. This challenge will be further exacerbated due to the coordination efforts required following the installation of electrification infrastructure and the planned increase in frequency of train service on the Lakeshore West Rail Corridor.

Additional Design Services Required to Complete Detailed Design

Urgent completion of the detailed design of the Dufferin Street Bridges is required to allow for tendering in 2023 and construction to commence in 2024. In order to proceed immediately to the detailed design phase of the project, Engineering and Construction Services staff recommend that the City negotiate and enter into a non-competitive contract with LEA Consulting Limited, for the detailed design and tendering services for the project.

Further delays may result in extended closures to Dufferin Street as the temporary bridges installed in 2014, were designed for a ten (10) year life span.

LEA Consulting Limited is uniquely positioned to fast track completion of the detailed design work as they have been working on this project since 2009, first through the completion of the Municipal Class Environmental Assessment followed by the recent completion of the preliminary design for the two bridge structures.

The Toronto Transit Commission's Dufferin Gate Streetcar Loop is located at the northwest corner of the Dufferin Street Bridge over the Rail Corridor. The loop provides a mainline turn-around for the streetcars on Dufferin Street. Due to the close proximity of the loop to the bridge, the Dufferin Gate Streetcar Loop will be closed for the duration of construction and will need to be regraded to match the new raised profile of Dufferin Street in that area.

The Toronto Transit Commission has a planned future project to extend streetcar service from the Dufferin Gate Loop to the Exhibition Loop. A 30% design for a new Dufferin Gate Loop has been completed by the Toronto Transit Commission which includes new buildings, platforms and canopy structures. Due to the close proximity of the bridge project and the new Dufferin Gate Loop, there is an operational advantage to combine these two projects under one contract to minimize the disruption to the community as a result of the construction activities. The Toronto Transit Commission has requested that the detailed design for the Dufferin Gate Loop be included in the Non-competitive Contract with LEA Consulting Ltd., for Detailed Design Services for the Replacement of the Dufferin St. Bridges over the Metrolinx Rail Corridor and F.G. Gardiner Expressway

design assignment for the Dufferin Street Bridges in anticipation of combining the construction work into a single contract to avoid additional disruption to the community.

The City and Toronto Transit Commission are in continuing discussions to formalize the cost recovery mechanism for the design work for the Dufferin Gate Loop.

LEA Consulting Limited will perform the following activities as part of the detailed design scope of work:

1. Provide Project Management services and co-ordination/consultation with Metrolinx, Toronto Transit Commission and Exhibition Place.
2. Undertake detailed design of the Dufferin Street Bridges over Metrolinx Rail Corridor and F.G. Gardiner Expressway in accordance with the Canadian Highway Bridge Design Code.
3. Complete road drainage analysis and drainage engineering for the new road profile from Springhurst Avenue to Saskatchewan Road.
4. Undertake electrical engineering for illumination on the bridges and permanent signals at Springhurst streetcar loop.
5. Analyze traffic staging, collect traffic data, and undertake network simulation for staging design and make recommendations for turning restrictions and signal timing modifications for maintaining one lane through the duration of construction.
6. Assess requirements for full closure of Dufferin Street during the Dufferin Arch relocation.
7. Subject to City staff agreeing to a cost recovery mechanism with Toronto Transit Commission, undertake detailed design of the Dufferin Gate Loop station including building design, civil, structural, architectural, foundation, mechanical and electrical requirements in consultation with Toronto Transit Commission.
8. Provide environmental services including consultation and documentation, designated substances survey for all design elements, migratory bird and species at risk survey, public notices, stakeholder consultation and public open house (virtual if required).
9. Undertake civil engineering for road design, utility relocations including a 300 millimetre diameter watermain, property requirements, and traffic staging.
10. Provide Geotechnical services (via sub-consultant) for final design and recommendations.

11. Provide landscape architecture services (via sub-consultant) for Centennial Park regrading design.
12. Provide architectural and engineering design services for relocation of the Dufferin Arch including heritage canopies, in consultation with City Heritage Preservation Services.
13. Undertake subservice utility engineering to ensure conflict resolution with all major utilities.
14. Provide documentation and materials for presentation of the project at the Design Review Panel.
15. Produce the detailed engineering design and associated engineering drawings for the construction contract.
16. Prepare Tender Documents and provide services during the tender period.

Entering into a non-competitive contract with LEA Consulting Limited will enable the City to maintain the accelerated design schedule necessitated by Metrolinx confirming they will no longer deliver the bridge replacement work. A delay to the schedule will result in completion of construction work on the bridges past the expected ten (10) year design life of the existing temporary Dufferin Street bridge structures, which may present a risk to the structural integrity of the temporary bridges which could result in bridge closures on Dufferin Street.

LEA Consulting Limited has provided the City with a cost estimate of \$1,806,762, net of HST, for the engineering services to undertake the scope of work associated with the Dufferin Street Bridges; and a cost estimate of \$1,745,100, net of HST, for the engineering services to undertake the scope of work associated with the Dufferin Gate Loop, for a total of \$3,551,862, net of HST. The quotation includes speciality sub-consultant services for architectural, heritage architecture, landscape architecture, geotechnical, and subsurface utility engineering. The price of \$3,551,862 represents an engineering cost of approximately 10% of the total capital project cost estimated at over \$35 million, which is within the detailed design cost expected with this type of undertaking, and is therefore considered fair and reasonable. The cost is an upset limit price and includes a contingency allowance to accommodate uncertainties given the complexities of this project. The price reflects LEA Consulting Limited's past work on, and existing knowledge of, the Dufferin Street Bridge project.

The Fair Wage Office has reported that LEA Consulting Limited has reviewed and understood the Fair Wage Policy and Labour Trades requirements and has agreed to comply fully.

CONTACT

Simon Hopton, P.Eng. Interim Director, Design and Construction, Bridges and Expressways, Engineering and Construction Services, Telephone: 416-395-6270, Email: Simon.Hopton@toronto.ca

Sabrina Dipietro, Manager, Infrastructure and Development Services, Purchasing and Materials Management, Telephone: 416-397-4809, Email: Sabrina.Dipietro@toronto.ca

SIGNATURE

Michael D'Andrea, M.E.Sc., P.Eng.
Chief Engineer and Executive Director, Engineering and Construction Services

Michael Pacholok, JD
Chief Procurement Officer, Purchasing and Materials Management

ATTACHMENTS

Attachment 1: Location Map

Attachment 2: Temporary Bridges over Metrolinx Lakeshore West Rail Corridor - East Elevation

Attachment 3: Dufferin Street Bridge over F.G. Gardiner Expressway - East Elevation