

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON OCTOBER 30, 2018
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	REHABILITATION OF WENIGE EXPRESSWAY BRIDGE AND Highbury AVENUE SOUTH PRELIMINARY, DETAILED DESIGN AND TENDERING APPOINTMENT OF CONSULTING ENGINEER

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the appointment of a Consulting Engineer for the Rehabilitation of the Wenige Expressway Bridge and Highbury Avenue from Hamilton Road to Highway 401 (4-BR-14):

- (a) Parsons Inc. **BE APPOINTED** Consulting Engineers to complete the Preliminary Design, Detailed Design, and Tendering Services in the amount of \$537,028.50 (excluding HST), in accordance with Section 15.2 (e) of the Procurement of Goods and Services Policy;
- (b) The financing for this appointment **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 appointment;
- (d) The approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract with the Consultant for the work; and,
- (e) The Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, including rail agreements, if required, to give effect to these recommendations.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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- Civic Works Committee – August 29, 2017 – Wenige Expressway Bridge Drainage, Highbury Avenue South Over Thames River South Branch
- Board of Control – June 23, 2010 – Contract Award: Tender No. 10-93 Highbury Avenue South Concrete Pavement Rehabilitation
- Board of Control – November 26, 2008 – Highbury Avenue Rehabilitation
- Environment and Transportation Committee – April 21, 2008 – Highbury Avenue Rehabilitation
- Environment and Transportation Committee – August 7, 2007 – Appointment of Consulting Engineer, Highbury Avenue Rehabilitation

COUNCIL'S 2015-19 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus areas of “Strengthening our Community” by ensuring that we have a healthy, safe and accessible city, and “Building a Sustainable City” by maintaining robust infrastructure and managing the transportation infrastructure gap.

DISCUSSION

Purpose

This report seeks the approval of the Municipal Council to retain an engineering consultant to undertake the pre-engineering services for coordinated infrastructure asset management work on Highbury Avenue from Hamilton Road to Highway 401. The assignment will focus on the following needs identified in the bridge and pavement management systems in a coordinated manner:

- preliminary design, detailed design, and tendering services for the rehabilitation of Wenige Expressway Bridge; and,
- detailed design for the rehabilitation of Highbury Avenue pavement and related corridor infrastructure.

Background

For the purposes of this report, the Highbury Avenue project limits refers to the right-of-way within the following limits: Highbury Ave. North (between Hamilton Road and the South Branch of the Thames River) and Highbury Avenue South (between the South Branch of the Thames River and the north limit of the Highway 401 Interchange).

Wenige Expressway Bridge is located on Highbury Avenue, approximately 550 m south of Hamilton Road and spans the South Branch of the Thames River. The bridge was constructed in 1965 and has had one major rehabilitation completed in about 1989. The structure is a continuous two-span reinforced concrete deck supported on six tapered welded steel plate girders which are supported on concrete abutments and a centre pier. The structure has a total span length of 76.2 m and an overall width of 18.39 m. The bridge accommodates four lanes of traffic on Highbury Avenue over the South Branch of the Thames River (two northbound and two southbound) and is oriented on an approximate 20 degree skew to the river. Temporary concrete barriers were installed adjacent to the existing metal railings on the east side in 2009 and west side in 2011, after the metal railings were damaged by vehicle strikes. Recent temporary maintenance works have been done to maintain the expansion joints. At roughly 53 years of age, with heavy traffic loading, this bridge is due for a major rehabilitation.

Highbury Avenue within the project limits is a major 4-lane north-south corridor for commuters arriving in London via Highway 401 and neighbouring communities. Highbury Avenue South is classified as a freeway carrying approximately 45,000 vehicles per day, with 15% trucks. This corridor (from south of Power Street to Highway 401) is the only City of London road with a posted speed limit of 100 km/h. Built in the early 1960's under the ownership of the MTO, the roadway is comprised of pavement sections constructed with concrete; some of which have been replaced with asphalt. Stormwater is conveyed through open ditches on either side of the roadway, as well as within the ditched median that separates the north and southbound lanes. A concrete median wall divides the north and southbound lanes from Hamilton Road to south of the River. In 2008 and 2010 the north and southbound lanes, respectively, were rehabilitated using a diamond grinding technique that restored rideability, surface

texture and friction for a safer roadway. Diamond grinding is a pavement holding strategy with a limited life expectancy. Heaving, buckling and pop-outs have been reported by the City's Roadside Operations Staff. In the past ten years records show that there have been 501 collisions with 3 collisions involving fatalities on Highbury Avenue South between Power Street (south of Hamilton Road) and Highway 401. At roughly 53 years old, with the volume of heavy vehicle traffic that uses this roadway daily, this roadway is nearing the end of its service life.

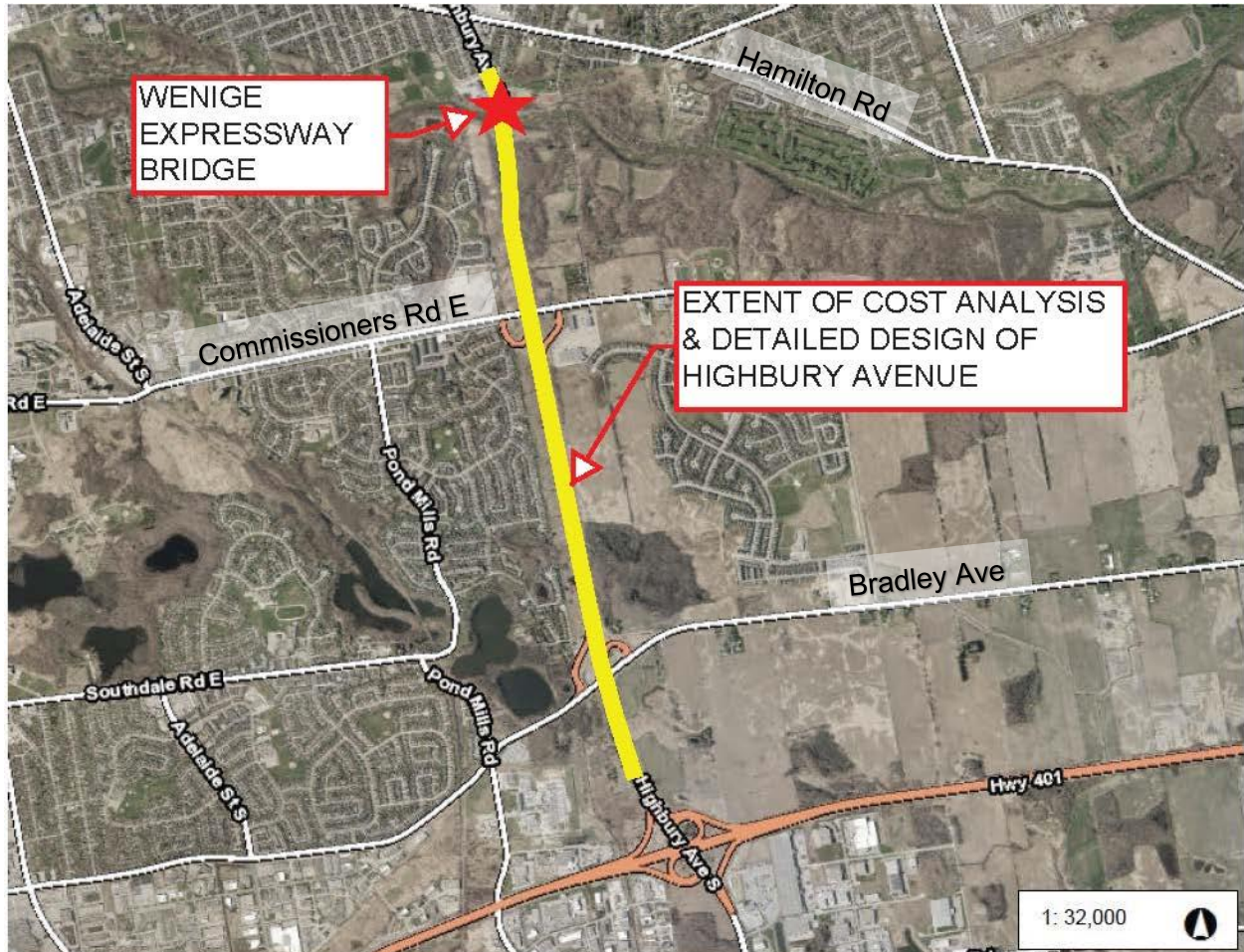


Figure 1: Location Map

Project Description

Wenige Expressway Bridge Rehabilitation

Earlier in 2018, a preliminary structural design report was completed for the Wenige Expressway Bridge (4-BR-14). This investigation recommended the following repairs:

- Complete deck replacement and widening of the structure to accommodate 3.6m lanes, 1.5 m shoulders and 1.0 m clearances to the median;
- Modify bridge structure to semi-integral abutments and eliminate deck joints;
- Remove and reconstruct ballast walls;
- Locally recoat structural steel at girder ends including environmental protection;
- Jack bridge and replace bearings at abutments;
- Remove and reconstruct barrier systems (both sides and centre median);
- Reface concrete abutments, concrete patch and repair pier and wingwalls;
- Review and recommend improvements to deck drainage; and
- Minor other works associated with the existing utilities on the bridge and the Thames Valley Parkway located under the bridge.

Highbury Avenue Pavement Rehabilitation

The Highbury Avenue pavement rehabilitation strategy within the project limits requires detailed analysis to determine the most cost-effective approach to deal with the aging concrete pavement. Concrete pavements can provide an extended initial service life but incur higher rehabilitation costs later in the life cycle. Determination of the pavement rehabilitation strategy will be determined with analysis of technical and financial considerations to help budget for this significant near-term life cycle renewal need.

Within the road corridor the following needs will be reviewed, evaluated and updated for current standards:

- Roadway condition;
- Street lighting;
- Drainage;
- Concrete Median condition; and
- Roadside safety.

Given the integral nature of the roadway and bridge works required, evaluating and designing this work as one assignment provides the best value for the City. The implementation timing of the bridge and pavement renewal works will be governed by priority and available funding. It is anticipated that the bridge rehabilitation and adjacent local pavement rehabilitation will be implemented in 2020.

Consultant Assignment

The proposed consultant engineering assignment includes the Preliminary Design, Detailed Design, and Tendering Services for the anticipated improvements to this corridor, including completing:

- i) a lifecycle cost analysis for replacement of Highbury Avenue between Power Street and Highway 401, comparing different surface treatments (i.e. concrete/asphalt/reinforced asphalt), the lifecycle maintenance requirements for each, and a recommendation for the rehabilitation/replacement of this roadway;
- ii) the detailed design for the rehabilitation/replacement of the north and southbound lanes of Highbury Avenue from Power Street to Highway 401;
- iii) the detailed design of the rehabilitation work required for the Wenige Expressway Bridge; and,
- iv) Tender package preparation for Phase 1 works, (with construction anticipated to be in 2020) which will include the Wenige Expressway Bridge works along with the first phase of the roadworks from Power Street to approximately 300m south of the bridge. (The actual southern limit of Phase 1 will be dictated by available budget and the proposed staging and temporary cross over works required to route traffic across the median for construction staging.)

The design work will include, but not be limited to:

- All necessary bridge rehabilitation works, including deck replacement, conversion to semi-integral abutments, parapet wall installation, and drainage improvements;
- Evaluation and design of the replacement roadworks, including traffic control, temporary measures, roadside safety upgrades, etc.;
- Evaluation and design of upgrades to the existing street lighting from Hamilton Road to south of the Thames River, as well as review and installation of new streetlights, if required, along the entire corridor;
- Evaluation and design of necessary repairs to the existing concrete median between the north and southbound lanes, and any other locations that require roadside safety improvements;
- Minor works to service/maintain watermain crossings and adjacent storm sewers within the right-of-way; and,

- Stakeholder (servicing and utility) coordination with UTRCA, MTO, Water Division, Parks Planning, Bell Canada, London Hydro, Hydro One, and others.

Tendering and construction of the roadworks south of the Phase 1 tender package (approximately 300m south of the river to Hwy 401) will follow as separate engineering assignments in subsequent years, dependant on budget allowances and council approval.

Consultant Selection

The consultant procurement process for this assignment began in accordance with Section 15.2 (e) of the Procurement of Goods and Services Policy for a two-stage process. On July 7, 2016, a fully open Request for Expression of Interest / Request for Qualifications advertisement was posted to Biddingo. Eleven consultants submitted packages for the City's review. The selection committee short listed the selection to four consulting firms for this proposal submission.

Proposals were received from the shortlisted consultants on September 7, 2018. The committee evaluation of the proposals identified that the Parsons Inc. submission provides the best value to the City. Parsons Inc. has an experienced project team that have a clear understanding of the project scope and requirements. Their past proven experience on similar projects of this nature combined with a project proposal that demonstrated a thorough understanding of the goals and objectives demonstrated their suitability for this undertaking. Parsons Inc. is familiar with City staff and procedures through recent work on other multi-disciplinary City assignments.

In accordance with Section 15.2 (e) of the Procurement of Goods and Services Policy, Civic Administration is recommending Parsons Inc. be appointed as Consulting Engineers for this preliminary design, detailed design, and tendering assignment.

Subject to successful completion of the design phase of this project, Parsons Inc. will be considered for the Construction Administration stage. Future approval to proceed with subsequent phases of engineering services for this project will be subject to satisfying all financial, reporting and other conditions contained within the Procurement of Goods and Services Policy.

There are no anticipated additional operation costs in the Environmental and Engineering Services budget with approval of this engineering assignment.

CONCLUSION

The ongoing management of City's transportation infrastructure is conducted through the bridge management system and pavement management system as components of coordinated corporate asset management processes. Highbury Avenue South and the Wenige Expressway Bridge were identified as requiring rehabilitation of several items. Initiation of detailed design, and tendering is required to maintain the infrastructure and best coordinate with other needs. The first phase of the construction for this project (including the Wenige Bridge Rehabilitation and the northern reaches of the north and southbound lanes) is tentatively planned for 2020, subject to budget allowances.

Parsons Inc. has demonstrated an understanding of the City requirements for this project. They have an experienced project team with a clear understanding of the project scope and requirements. Based on the thorough consultant procurement process, it is recommended that Parsons Inc. be awarded the consulting assignment for the preliminary design, detailed design, and tendering services for the Rehabilitation of

Highbury Ave South and the Wenige Expressway Bridge (4-BR-14) at an upset amount of \$537,028.50 (excluding HST).

Acknowledgements

This report was prepared with assistance from Trevor Hitchon, C.Tech., Technologist II, Jane Fullick C.E.T., Senior Technologist and Karl Grabowski, P. Eng., all of the Transportation Planning and Design Division.

PREPARED BY:	RECOMMENDED BY:
DOUG MACRAE, P. ENG., MPA DIRECTOR ROADS AND TRANSPORTATION	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER

Attach: Appendix A – Source of Financing

cc: Geoff Smith, CSCMP, Purchasing and Supply
Marta Semeniuk, Financial Planning and Policy
Gary McDonald, Tangible Capital Assets
Henry Huotari, Parsons Inc.