



STAFF REPORT ACTION REQUIRED

Procurement Authorization Scarborough Subway Extension Supplemental Geotechnical, Geo-Environmental & Hydrogeological Services - Contract FE85-10

Date:	March 22, 2017
To:	TTC Board
From:	Chief Executive Officer

Summary

The purpose of this report is to obtain authorization for the award of Contract FE85-10 for Supplemental Geotechnical, Geo-Environmental and Hydrogeological Services for the Scarborough Subway Extension (SSE). This work is required to determine the soil and groundwater conditions along the alignment, which is then used to develop designs for the station and tunnel. Geo-Environmental investigations also provide information to support property acquisitions.

Recommendations

It is recommended that the Board authorize the award of Contract FE85-10 for Supplemental Geotechnical, Geo-Environmental and Hydrogeological Services for the Scarborough Subway Extension to the following firms, each in the noted upset limit amounts, in Canadian funds, each for a five (5) year duration from the Notification of Award, on the basis of lowest total evaluated price of the qualified proponents.

<u>Firm</u>	<u>Upset Limit</u>
• Golder Associates Ltd	\$5 million
• Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited	\$5 million
• WSP Canada Inc.	\$5 million

Financial Summary

The TTC's 2017-2026 Capital Budget includes an estimated cost of \$3.56 B for the SSE, including the SRT Life Extension and Demolition, as approved by the City of Toronto Council on February 15, 2017. Of the \$3.56 B, City Council has approved \$194.629 million to date and no work beyond what can be accommodated within the approved funding will be initiated, unless additional project approval funds are made available.

Contract work will be administered on a Work Assignment Release basis. Work will only commence as authorized by TTC staff in the form of a Work Assignment Release and payment for services will be based on the terms included in the Contract Documents.

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

Accessibility/Equity Matters

The Scarborough Subway Extension will be designed and constructed to be accessible.

Decision History

At its meeting of October 8, 2013, City Council confirmed support for a Scarborough Subway extending Line 2 (Bloor-Danforth) along the McCowan Corridor to Sheppard Avenue East, subject to approval through an Environmental Assessment.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.CC39.5>

At its meeting of June 24, 2014, the Board received a status report on the Scarborough Subway Extension and approved forwarding the report to the City Planning and Growth Management Committee for its information.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2014/June_24/Reports/Scarborough_Subway_Extension_Update.pdf

At its meeting of December 9, 2014, the Board approved the award of Contract FE85-2 for Tunnel Design Services.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2014/December_9/Reports/BR_17122_Procurement_Authorization_Tunnel_Design_Contract_FE.pdf

At its meeting of February 25, 2015, the Board approved the award of Contract FE85-3 for Project Management Services.

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2015/February_25/Supplementary_Reports/Procurement_Authorization_Project_Management_Services_Contra.pdf](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/February_25/Supplementary_Reports/Procurement_Authorization_Project_Management_Services_Contra.pdf)

At its meeting of March 24, 2015, the Board directed the TTC's CEO to provide a report outlining the specific, substantive changes that will be made in the planning and project management for the Scarborough Subway, as compared to the Toronto York Spadina Subway Extension (TYSSE).

This report will be submitted in mid 2017. The report will also incorporate the findings of the KPMG's review of TTCs Capital Program Delivery.

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2015/April_29/Minutes_other/March_26_2015_minutes.pdf](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/April_29/Minutes_other/March_26_2015_minutes.pdf)

On May 5, 2015, City Council directed the City Manager, in consultation with CEO of the TTC and the Deputy City Manager and Chief Financial Officer, to report to Council by the first quarter of 2016 with a recommendation on whether to proceed with a Design-Bid-Build or Design-Build-Finance option for the Scarborough Subway Extension, and also requested the TTC Board to continue to structure contracts in a way that preserves the ability to proceed with whichever procurement and delivery model is recommended.

This report is to be submitted in Q1 2017.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.EX5.6>

At its meeting of May 27, 2015, the Board approved the award of Contract FE85-4 for Systems Design and Management Services, as well as Contract FE85-5 for Station Design Services.

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2015/May_27/Reports/Procurement_Authorization_Systems_Design_and_Management_Serv.pdf](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/May_27/Reports/Procurement_Authorization_Systems_Design_and_Management_Serv.pdf)

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2015/May_27/Reports/Procurement_Authorization_Station_Design_Services_Contract_F.pdf](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/May_27/Reports/Procurement_Authorization_Station_Design_Services_Contract_F.pdf)

At its meeting of June 22, 2015, the Board approved the award of Contract FE85-6 for Geotechnical, Geoenvironmental and Hydrogeological Consulting Services.

[https://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2015/July_29/Minutes/Minutes-June_22_2015.pdf](https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/July_29/Minutes/Minutes-June_22_2015.pdf)

At its meeting of March 23, 2016 and in response to the request from the February 25, 2016 Board Meeting, the Board received a Report noting that staff will include a revised project cost and schedule when the Environmental Assessment Report is submitted for Board approval.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2016/March_23/Reports/Scarborough_Subway_Extension_Update_March_23_2016.pdf

At its meeting of July 11, 2016, the Board received a presentation on Developing Toronto's Transit Network Plan to 2031, from City staff. The change in scope for the SSE from a three stop extension to Sheppard, to a one stop extension to Scarborough Centre, was included in the presentation.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2016/July_11/Reports/8_City_of_Toronto_Report_Developing_Toronto%27s_Transit_Networ.pdf

Issue Background

This report addresses the retention of firms that will carry out supplemental geotechnical, geo-environmental and hydrogeological investigations, in support of the Scarborough Subway Extension. This work is required to determine and assess the soil and groundwater conditions along the length of the proposed alignment. The information obtained through these investigations is interpreted by the geotechnical engineers, which is then provided to the tunnel and station design teams to permit the structural design of the station and tunnel liners. This information is also used to establish design parameters for the tunnel boring machine.

In addition, information obtained through the geo-environmental investigations is used to assess the environmental condition and potential impacts of both the soil and groundwater along the length of the subway extension. This information is used, along with Ministry of the Environment and Climate Change criteria and City By-laws, to determine the disposal requirements for both soil and groundwater.

The geo-environmental investigations (Phase I and II Environmental Site Assessments) are also part of the due diligence when acquiring (purchasing) and/or leasing land for construction laydown and staging areas, or for buildings such as, but not limited to, the station, emergency exit buildings and vent shafts.

As noted above, the Board approved Contract FE85-6 in the amount of \$10.5 million at its meeting of June 22, 2015, for geotechnical, geoenvironmental and hydrogeological investigation services for the SSE. The contract was awarded at that time to enable the collection of early data, for conceptual design and environmental assessment. At this

time, expenditures for 92% of Contract FE85-6 have been authorized, with work approximately 50% completed.

Based on the updated project scope, additional geotechnical, geo-environmental and hydrogeological investigations will be required to address the following:

- Historically, TTC subways have been constructed with twin tunnels, approximately 6m in diameter. The scope for SSE is based on a single bore tunnel, which is approximately 12m in diameter. Due to the larger tunnel diameter, the alignment will be approximately 6m deeper, adding to the depth of the boreholes;
- The topography of the preferred alignment is also much deeper than typical. The depth is driven by three crossings of the West Highland Creek and the topography in the vicinity of Lawrence and Scarborough Centre;
- Based on results from preliminary bore holes, artesian groundwater conditions have been identified, which requires some bore holes to be up to 100% deeper;
- Based on results from preliminary bore holes, impacted areas were identified, which require additional testing;
- Location and quantity of facilities have been defined for emergency exit buildings, ventilation shafts, substations and station/bus terminal;
- Contract FE85-6 included environmental assessment for 15 properties. Based on the required facilities, approximately 40-50 properties will require environmental assessment; and
- TBM launch, extraction and work shafts.

It is noted that this work is required regardless of the project delivery strategy.

Comments

A Request for Proposals was publicly advertised on the Merx website as well as the TTC's website as of September 19, 2016. Thirty (30) companies downloaded copies of the proposal documents, out of which eight (8) submitted a proposal by the closing date of October 13, 2016. During the bid period, no addenda were issued.

Evaluation of the Proposal Submissions

Submissions from the following companies were received for Geotechnical, Geo-Environmental and Hydrogeological Services:

1. Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited;
2. Englobe Corp.;
3. Exp Services Inc.;
4. GeoPro Consulting Limited;
5. GHD Limited;

6. Golder Associates Ltd.;
7. Sola Engineering Inc.; and
8. WSP Canada Inc.

An evaluation team consisting of three (3) members; two (2) representing the Geotechnical & Geoenvironmental Design Section of the Engineering, Construction and Expansion Group and one (1) from Materials and Procurement (M&P) Department evaluated the qualitative portion of the proposal in accordance with the requirements outlined in the RFP.

Before commencing the evaluation, all proposals were reviewed for commercial compliancy and all proposals that appeared to be compliant were rated by the evaluation team.

The recommendation for award is based on the three lowest total evaluated prices of the qualified proponents. The evaluation of proposals was based on a two envelope process and consisted of qualitative and pricing components. All proposals were first reviewed and rated by the evaluation team on the qualitative aspects of the proposal, using the associated weightings as set out in the proposal documents. Those proposals that scored a total qualitative rating of 80 or better were considered qualified, and the pricing components for those qualified were opened by M&P for evaluation.

The following four companies passed the qualitative evaluation and had their pricing components evaluated:

- Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited;
- GHD Limited;
- Golder Associates Ltd.; and
- WSP Canada Inc.

Based on the evaluation process outlined above, the following three companies had the lowest evaluated prices and are recommended for award of contracts:

- Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited;
- Golder Associates Ltd.; and
- WSP Canada Inc.

The three companies recommended for award have satisfactorily performed previous work for the TTC.

By awarding Contract FE85-10, the additional geotechnical, geo-environmental and Hydrogeological work will proceed in order to further define the station and tunnel design requirements.

Contact

M. Piemontese
Head of Materials & Procurement (Acting)
Phone: 416-393-3113
Email: mike.piemontese@ttc.ca

R. Thompson
Chief Project Manager - Scarborough
Subway Extension
Phone: 416-590-6870
Email: rick.thompson@ttc.ca

P. Laurin
Head of Engineering
Phone: 416-590-6973
Email: pierre.laurin@ttc.ca

Attachment: Appendix A

80-125-125
03082-103-2

APPENDIX A

PROCUREMENT AUTHORIZATION
SCARBOROUGH SUBWAY EXTENSION
SUPPLEMENTAL GEOTECHNICAL, GEO-ENVIRONMENTAL AND
HYDROGEOLOGICAL SERVICES
CONTRACT FE85-10

EVALUATION CRITERIA

A. Corporate Qualifications

- Number of years in business
- Depth of available resources
- CADD facilities and compliance to TTC CADD standards
- Local in-house laboratory facilities
- Relevant corporate experience

B. Staff Qualifications/Experience

- Number of years of direct experience
- Technical qualifications
- Relevant experience

C. Pricing Evaluation

COMPANY NAME	TOTAL EVALUATED PRICE*
Golder Associates Ltd. **	\$4,710,698.80
Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited**	\$5,060,743.82
WSP Canada Inc.**	\$5,154,977.00
GHD Limited	\$5,633,447.70

(*) – the 5-year Contract Total Evaluated Pricing is derived as a sum of estimated hours multiplied by the hourly billing rate of each key staff member, plus unit rates by position for additional staff, multiplied by the estimated hours, plus the sum of the estimated quantities for various services multiplied by the unit prices. There were 131 unit price items identified on the Price Schedule for the various services. The RFP Document indicated that TTC intended to award up to 3 contracts with an upset limit of \$5.0M each. The estimated quantities were used for evaluation purposes only.

(**) - Recommended for award.