



# Relief Line South – Tunnel Design

**Date:** March 20, 2018  
**To:** TTC Board  
**From:** Chief Capital Officer

## Summary

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The purpose of this report is to obtain authorization for the award of Contract G85-356 for tunnel design consulting services for the Relief Line South (RLS) project. This work is required to prepare the preliminary design of the tunnel and associated structures, including the design and construction of the three existing subway crossings, substations, emergency exit buildings and tunnel underground cross-passages.

The work of this contract will advance the preliminary design of the RLS, based on the approved alignment, to a Class 3 cost estimate and schedule. At completion of this stage gate, a report will be presented to the TTC Board and City Council in late 2019.

## Recommendations

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It is recommended that:

1. The Board authorize the award of Contract G85-356 for tunnel design for the Relief Line South to Arup Canada Inc. in the upset limit amount of \$16,000,000.00 for a two year duration from the notification of award on the basis of the highest total weighted score.

## Financial Summary

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Sufficient funds are included in the Relief Line Capital Project for this requirement as approved in the 2018-2027 Capital Budget and Plan by Council on February 12, 2018.

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

## **Equity/Accessibility Matters**

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The RLS will be designed and constructed to be accessible.

## **Decision History**

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The TTC's 2017-2026 Capital Budget includes \$55.52M for preliminary RLS design, as approved by City Council on February 15, 2017. The Province committed \$150 M to Metrolinx to work with the City and TTC to advance planning and design of the RLS. A Memorandum of Understanding is being prepared with Metrolinx and the TTC to define roles and responsibilities and to share the total costs of work required to develop a Class 3 cost estimate for the project. Metrolinx will provide \$45M in funding to undertake this work.

At its meeting of July 12 to 16, 2016, City Council approved the Pape-Eastern-Queen alignment for the RLS, subject to assessment of an additional alignment segment, west of Pape Avenue, starting immediately north of the GO tracks on Pape Avenue to south of Queen Street, with a station box at Queen Street and Carlaw Avenue.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.EX16.1>

In May 2017, City Council approved the following:

- The segment of the Relief Line South from immediately north of the GO tracks at Gerrard Avenue East south to Queen Street East;
- Commencement of the Transit Project Assessment Process;
- Advance the planning and design of the RLS based on the recommended alignment and report to City Council when a Class 3 cost estimate and schedule have been developed for the project, which is anticipated to be in the fourth quarter of 2019; and
- The City Manager to negotiate and enter into a Memorandum of Understanding with Metrolinx and Toronto Transit Commission to define roles and responsibilities and the cost-sharing agreement between Metrolinx, the City of Toronto and Toronto Transit Commission to complete the planning and design work required to develop a Class 3 cost estimate and schedule for the RLS.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.EX25.1>

At its meeting of February 18, 2018, the Board approved the award of Contract G85-355 for Geotechnical Consulting Services for the RLS project.;

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2018/February 15/Reports/14 Relief Line South Geotechnical Consulting Services.pdf](http://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2018/February%2015/Reports/14%20Relief%20Line%20South%20Geotechnical%20Consulting%20Services.pdf)

## **Issue Background**

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City, Metrolinx and TTC staff are collaborating to advance the preliminary design for the RLS project.

The RLS project is approximately 6 km in length, and is expected to be underground for its entire length. Tunnel configuration and construction methods will need to be confirmed through the downtown core and a decision to use a single versus a twin tunnel solution for this project will need to be made.

In addition to the machine-driven tunnels, sections of cut and cover constructed tunnels will be required at the tunnel boring machine (TBM) launch/extraction sites. These sections of cut and cover tunnels will not be known until the most efficient contracting strategy is determined, taking the alignment, suitable construction sites and schedule into consideration.

The tunnel structures will likely pass directly underneath a number of existing structures, including the Don River, Don Valley Parkway, the Line 2 running tunnel and existing TTC Pape, Queen and Osgoode subway stations.

In addition to the subway running structures, this project also requires the design and construction of emergency exit buildings and tunnel underground cross-passages, located as required by applicable standards and/or codes. The work of this contract is required regardless of the project delivery strategy.

Contract work will be administered on a work plan release basis. As each required task is identified, a work plan is prepared with an estimate. Work will only begin as authorized by TTC staff in the form of a work plan release, and payment for services will be based on the actual work performed at the approved billing rates.

The work of this contract will advance the preliminary design of the RLS, based on the approved alignment, to a Class 3 cost estimate and schedule. At completion of this stage gate, a report will be presented to the Board and City Council in late 2019.

## **Comments**

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A Request for Proposals was publicly advertised on the Merx website as well as the TTC's website as of November 10, 2017. Copies of the proposal documents were downloaded by 45 companies, of which five submitted a proposal by the closing date of January 4, 2018.

The evaluation of proposals was based on a two envelope process that consisted of both qualitative and pricing components. The compliant proposals were first reviewed and rated by the TTC evaluation team on the qualitative aspects of the proposal using the associated weightings described in the proposal document. The proposals that scored a total qualitative rating of 80 or better were considered qualified, and the pricing components for these submissions were opened for inclusion in the evaluation. The evaluation criteria are described in Attachment 1.

The following three firms achieved a score of 80% or more, based on the qualitative evaluation and had their pricing components evaluated:

- Arup Canada Inc.;
- CH2M Hill Canada Limited; and
- Hatch Corporation;

Of these, the following company had the highest total weighted score and is recommended for award:

- Arup Canada Inc.

While Arup Canada Inc. has previously performed work for the TTC in the past, they have not provided tunnelling design services. Consequently, reference checks were completed that indicate that they have recently satisfactorily performed work of a similar size and nature.

By awarding Contract G85-356, the tunnel design will proceed in order to support the RLS preliminary design.

## **Contact**

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## **Signature**

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Susan Reed Tanaka  
Chief Capital Officer

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**ATTACHMENT 1**  
**RELIEF LINE SOUTH – TUNNEL DESIGN**  
**EVALUATION CRITERIA**

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A. Corporate Qualifications

- Background and capabilities
- Number of years in business
- Depth of available resources
- CADD facilities and compliance to TTC CADD standards
- Relevant corporate experience

B. Key Staff Qualifications/Experience

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

C. Pricing Evaluation