

**Green Line LRT Project
Stage 1**

Terms of Reference

Technical and Risk Committee

September 11, 2019

Purpose

The Technical Risk Committee (“TRC”) was developed to fulfill the Project Sponsor and Executive Steering Committee (“ESC”) desire for an independent committee to support the ESC’s oversight of the Project and provide additional due diligence, as required. At the July 29, 2019 Combined Meeting of Council report TT 2019-0811, Green Line Q2 2019 Update, was approved. Report TT 2019-0811 provides specific directions to engage the TRC to conduct an independent technical and commercial peer review as an additional act of due diligence on the Green Line Project (the “Project”). It is expected that the additional due diligence will bring increased focus to risk management on the Project. Key to risk management on the Project will be intentionally identifying, accepting, mitigating, managing, monitoring, transferring, or avoiding risk.

This Terms of Reference (“ToR”) provides a description of the Project, the TRC and outlines the roles and responsibilities of key parties.

Project Description

The Long Term vision for the Green Line is a 46km low floor Light Rail Transit (“LRT”) which spans the Calgary from Northpoint to Seton, connecting communities in the north and southeast with the downtown core and providing key connections to facilities and services. Stage 1 of the Project stretches 20km in length from 16th Ave N to 126 Ave SE and is estimated to carry 60,000 to 65,000 passengers on opening day. The scope of infrastructure in Stage 1 includes 20km of double track, 14 stations, a new light rail vehicle fleet, and a new maintenance and operations facility. Stage 1 of the project is divided into two Segments, Segment 1 stretches from 4th Street SE to 126 Ave SE and Segment 2 stretches from 16th Ave N to 4th Street SE.

Roles and Responsibilities of the TRC

The TRC consists of four independent specialists (Appendix “A”) who have relevant expert experience. The TRC reports to the General Manager, Transportation (hereinafter referenced as the “Project Sponsor”) and supports the Project oversight by the ESC. The TRC will provide updates to the ESC, and TRC members will be available to meet with the ESC to discuss their findings. The Project Sponsor will nominate a TRC member to Chair the TRC.

Each member of the TRC is required on an ongoing basis to disclose all relevant commercial and personal relationships (as may be applicable) and declare any perceived, potential or actual conflicts of interest as described in more detail in the Green Line Conflict of Interest Protocol. The ongoing relationship review is required to ensure that the work of the TRC maintains the fairness of the competitive selection

process. Each member will be required to ensure they comply with security of information protocols established by the Project Sponsor.

The work of the TRC will be divided into two modules. Module 1 will focus on the independent review of specific work elements as initially defined in Report TT 2019-0811. The initial work elements selected for review have been defined jointly by the ESC and the Project Sponsor and include:

- Suitability and adequacy of the governance structure;
- Deliverability of the Project:
 - Review of key project management documentation;
 - Review of procurement documentation, evaluation and ad-hoc procurement issues;
 - Suitability and adequacy of resourcing and project controls;
 - Stakeholder engagement and communications ;
- Suitability of the proposed technical solution with respect to Segment 1:
 - Alignment and structures
- Suitability of the proposed technical solution with respect to Segment 2:
 - Tunnel constructability;
 - Bridge constructability;
 - Traffic Management and community impacts;
- Risk identification, quantification and mitigation process:
 - Review of the key commercial terms and the proposed risk transfer within the key agreements;
 - Overall risk allocation, marketability and bankability of the Project;
- Overall project budget and scope:
 - Segment One review;
 - Segment Two review;
- Sufficiency of funding for the Project.

The foregoing list of review activities may be modified from time to time by the Project Sponsor, in consultation with the ESC.

The TRC, in collaboration with the Project Sponsor will prioritize the timing of the required reviews and develop specific tasks for conducting each of the required reviews, and may, during the conduct of a review, agree to modify the review methodology. Typically, the TRC will complete sufficient review to assess if the Project team's work has

been performed to an appropriate standard of detail, and identify potential issues, inconsistencies, errors and discrepancies and offer constructive observations and recommendations intended to assist the Project team. The standard of each review may vary; specifically, the reviews will not be fully comprehensive and will not entail in-depth analysis of all assumptions, calculations, extrapolations, and alternative interpretations; rather, reviews may verify or test compliance with common practice and methodologies and confirm the appropriateness of the methodologies and application of the methodologies by the Project team and may include limited in-depth analysis only when necessary to assess the reasonableness of the various conclusions and of the Project team.

TRC observations and recommendations are not binding and discretion can be applied in considering the TRC recommendations.

Module 2 of the TRC work will focus on preventative risk management. The TRC will be available to assist the Project team with the early identification of issues and project risks and work with the Project team to develop risk mitigation strategies.

For work on both Modules 1 and 2, the members of the TRC must conduct themselves thoughtfully and respect the accountability and authority of the Project team to undertake the work required to deliver the Project.

The TRC may attend briefings with the Project team and conduct review activities in person with Project team members and Project Subject Matter Experts. It is expected, in order to manage cost and to ensure timely and effective due diligence, that the TRC will not have all of its members present at all meetings and that not all TRC members will participate in each and every review. All TRC meetings will be minuted.

The TRC will be provided with all documentation and reports considered by them to be necessary to conduct their reviews.

If requested by the TRC, the Project Sponsor may agree to engage additional independent specialists to support the work of the TRC. Each request will be accompanied with a description of the required work, a supporting rationale and expected time and cost associated with the work.

TRC Reporting Requirements

The TRC will report its findings either verbally or in writing to the Project Sponsor. The Project Sponsor will ensure that the Project team responds to the observations and recommendations of the TRC and confirm if and how the Project team has incorporated into their work the TRC observations and recommendations. The TRC will develop and present quarterly reports to the Transportation & Transit Sub-Committee. The Chair of the TRC will represent the TRC at the Transportation & Transit Sub-Committee meetings and from time to time, other members of the TRC will attend meetings. The administration of the TRC activities and production of reports and presentation will be supported administratively by the Project Sponsor's office.

Appendix A

Members of the Technical and Risk Committee:

Name
Albert Sweetham
Don Fairbairn - Chair
Eric Tromposch
Erich Neugebauer