

## Attachment 5 – Centre City Route Evaluation

### Overview

The City is committed to building Stage 1 of the Green Line within the approved funding of \$4.9 billion. Administration is currently re-evaluating the route from 16 Avenue N to Ramsay in order to develop a recommendation for a revised route that can be constructed within budget, reduces construction risks, delivers benefits to Calgarians, and achieves the vision of the Green Line LRT project.

### Background

In spring 2019, Administration completed a constructability review of the most complex segment of Green Line Stage 1, from 16 Avenue N to Ramsay. The objective of the constructability review was to reduce potential construction risks and refine cost estimates of the four kilometer tunnel and four underground stations planned along this segment.

Through the constructability review, the design of the tunnel and underground stations became more advanced and risks were investigated to a higher certainty. Administration identified that cost estimates were exceeding Green Line's funding of \$4.9 billion by approximately 10%. In addition, the technical risks were pushing the underground stations deeper than originally anticipated, impacting the overall transit rider experience and project vision. Re-evaluating the design of this section of Green Line will ensure that the project remains on budget, manages risks, delivers benefits to Calgarians, and achieves the vision of the Green Line LRT project.

### Evaluation Scope

Three zones are currently being evaluated against the existing 2017 Council approved route. Within these zones, Administration is evaluating options for managing costs and construction risks, such as:

- Shortening the length of tunnel and reducing the number of underground stations by changing to a street-level LRT
- Changing construction methods for reducing the depth and minimizing construction risk associated with a tunnel and underground station(s)
- Options for crossing the Bow River, including a bridge
- Shifting the alignment to adjacent streets or avenues

### Evaluation Process

While the primary objective of this evaluation is to develop a design solution that can be built within the Green Line budget of \$4.9B, Administration is working to develop an affordable route that considers additional variables such as LRT operations and stakeholder interests.

The route evaluation includes a review of the technical and financial implications of the routes under consideration. The criteria used in this evaluation are:

- Construction cost
- Utility impacts
- Land impacts

- LRT operations
- Additional considerations (stakeholder sentiment, traffic, site access and circulation, urban realm, etc.)

Stakeholder working groups will be established to allow key stakeholders and project team members to gain an understanding of each other’s interests, aspirations and constraints, and to factor stakeholder interests into the design, where possible. The intent is to inform an affordable and well-designed solution that strives to reflect the interests of key stakeholders and communities.

The table below outlines the key activities and timelines for the Centre City route evaluation process.

Activity	Timeline	Technical Design	Stakeholder Outreach & Engagement
Phase 1: Evaluate route options for cost and technical feasibility	Spring – October 2019	<ul style="list-style-type: none"> <li>-Technical design to establish high-level cost estimates for construction, utilities relocations, and land acquisition</li> <li>-Constructability review to assess construction risks and feasibility</li> <li>- Screening route options against budget and technical feasibility to determine affordable route(s) options</li> </ul>	<ul style="list-style-type: none"> <li>- Outreach and communication with key stakeholders and citizens, to inform about route evaluation</li> <li>-Key stakeholders include community associations, condominium boards, business improvement areas and land developers</li> </ul>
Phase 2: Evaluate affordable route options and identify recommended route	September - October 2019	<ul style="list-style-type: none"> <li>-Evaluate affordable route(s) options against criteria such as mobility, transit operations, property access, etc.</li> <li>-Identify a recommended route that best meets evaluation criteria and delivers benefits to Calgarians and achieves the Green Line vision</li> </ul>	<ul style="list-style-type: none"> <li>-Engage key stakeholders to identify interests on the route options</li> </ul>

		Develop understanding of LRT operations, traffic, circulation and property access	
Phase 3: Advance design of recommended route through key stakeholder engagement	October – January 2020	<ul style="list-style-type: none"> <li>-Preliminary design of recommended route including station locations, portals, underground, and bridge (if applicable)</li> <li>-Planning for urban integration and to consider stakeholder interests</li> <li>-Updating of cost estimate.</li> </ul>	<ul style="list-style-type: none"> <li>-Workshops with key stakeholders to maximize benefits of the recommended route and incorporate stakeholder interests, where possible, in the design (e.g. ways to integrate portal into urban realm, address concerns related to the mobility network and property access)</li> <li>-Citizen outreach to inform on design of recommended route and gather stakeholder sentiment for Council decision</li> </ul>
Present recommended route to Standing Policy Committee on Transportation & Transit	January 2020		
Phase 4: Advance Design of Approved Route and initiate planning of broader community integration	January 2020 – March 2021	<ul style="list-style-type: none"> <li>-Develop reference concept design and technical performance requirements for approved route</li> <li>-Planning &amp; design of broader mobility network (e.g. cycle tracks, roadways)</li> </ul>	<ul style="list-style-type: none"> <li>-Continue engagement with key stakeholders to incorporate interests in the design of urban realm integration</li> <li>-Engagement on planning &amp; design of broader mobility network</li> </ul>