

## Green Line Q1 2019 Update

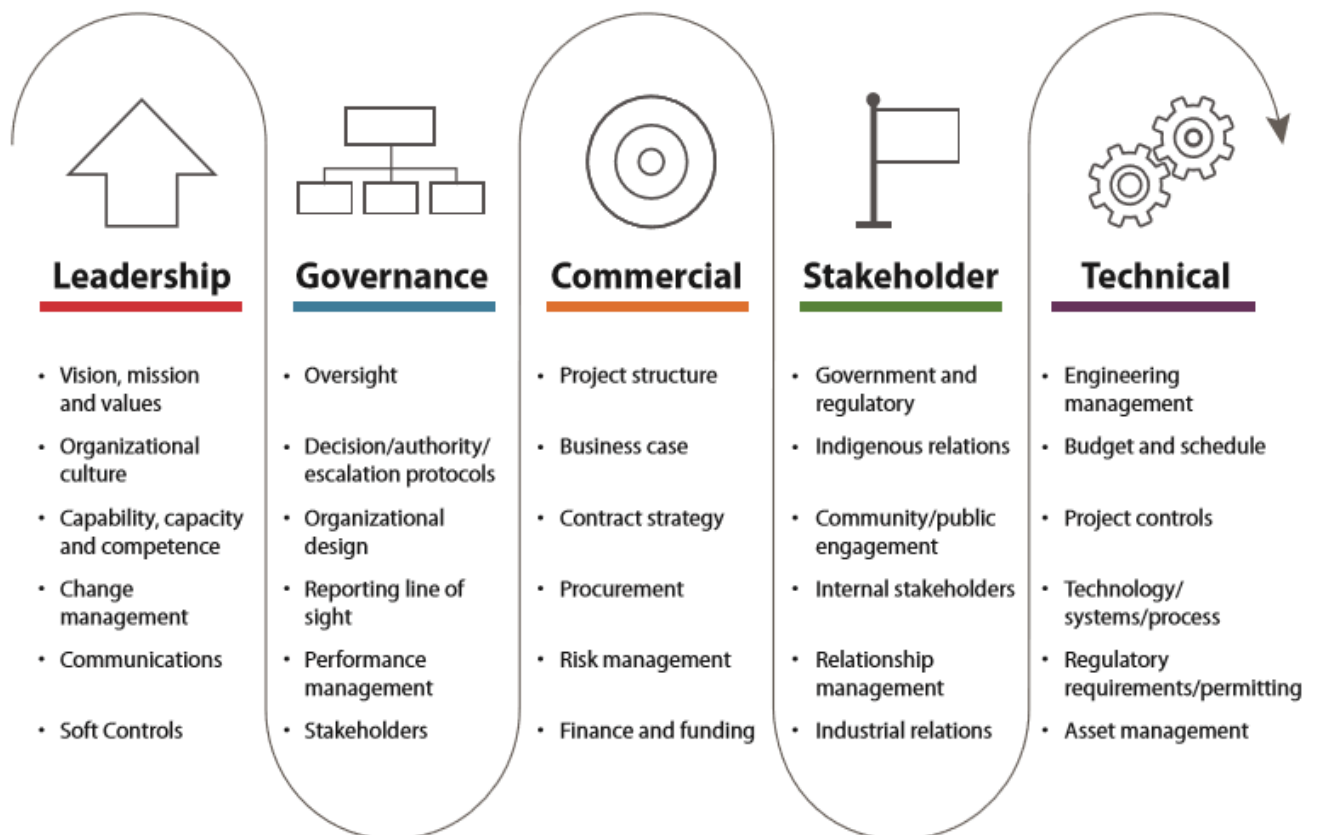
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### EXECUTIVE SUMMARY

The purpose of this report is to update Council on the status of the Green Line LRT project for the period of 2019 Q1. This report is not meant to be a complete description of the work performed by administration during the quarter. This report provides information on present and upcoming key milestones and deliverables for each reporting period (quarterly).

Working with project advisors, Administration has defined five key project focus areas which need to perform at a high level to successfully deliver the Green Line project. The five key project focus areas are: Leadership, Governance, Commercial, Stakeholder and Technical. To successfully deliver the Green Line Project Administration will need to have a team which is not only performing at a high level in each focus area, but which is also integrating across all focus areas. As the project progresses Administration will be updating Council on the progress of each of these key focus areas, in the form of a progress report card.

### Green Line Project Focus Areas:



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### **ADMINISTRATION RECOMMENDATION:**

1. That the SPC on Transportation and Transit receive this quarterly report for information.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

At the 2019 January 28 Strategic Council Meeting, Green Line Financing and Funding Update, PFC2019-0040, the following be adopted:

That Council:

1. To optimize the Green Line cash flow commitments over the term of the project, reconsider, in part, its decision as contained in the minutes of the Regular Meeting of 2017 November 27 with respect to Recommendation 1 of Report C2017-1123 as follows:  
by deleting the words “the financing” after “fund” and before “costs” to result in the following motion:  
“Direct that the 2017 tax room (\$23.7 million) be retained in 2018 and future years and used to fund costs for Green Line for 27 years until 2044.”; and
2. Direct that Attachment 1 and the Closed Meeting discussions remain confidential upon review by 2026 December 31 pursuant to Sections 23, 24, 25 and 27 of the *Freedom of Information and Protection of Privacy Act*.

At the 2018 December 17 Regular Meeting of Council, Council approved item 10.1.5 Green Line Station Public Gardens, C2018-1445: ‘That Administration, through Green Line City Shaping, report back to Council through the Standing Policy Committee on Transportation and Transit no later than April 24, 2019.’

At the 2018 December 14 Regular Meeting of Council, Report TT2018-1335 (Green Line Q4 2018 Update) was received for information and adopted.

At the 2018 October 15 Regular Meeting of Council, Report TT2018-1089 (Green Line Update) was approved on Consent Agenda, as one of a series of quarterly updates that will be provided to the Transportation and Transit Committee to update Committee and Council as to the progress of the Green Line project.

### **BACKGROUND**

#### **Green Line Project Vision:**

*A transit service that improves mobility choices for Calgarians, connecting people and places and enhancing the quality of life in the city.*

#### **Green Line Project Goal Statement:**

*The project team will deliver Stage 1 of Green Line, from 16 Avenue N to 126 Avenue S.E., within a \$4.9 billion capital budget, by 2026, prioritizing safety, quality and cost.*

Following the approval of the Green Line long-term vision and Council direction to proceed with the Stage 1: 16 Avenue N to 126 Avenue SE (Stage 1) project at the 2017 June 26 Regular Meeting of Council, Administration has transitioned from the planning to project execution.

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Green Line quarterly update reports will present status and progress on key activities, deliverables and major milestones as part of the execution phase and based on the five key focus areas.

Recognising that issues may come up at unpredicted times, coupled with the desire to be responsive and provide timely information, the quarterly report will be added to as required to respond to any new, emerging or urgent items.

#### **Quarterly Report Format:**

This report is the first quarterly update for 2019 and will establish a regular format and cadence of quarterly reporting to the Transportation and Transit (T&T) Committee.

Quarterly reports will consistently provide the following updates:

- **Project Progress Report Card** is a summary on the status of the five key project focus areas: leadership, governance, commercial, stakeholder and technical areas of the project (Attachment 1).
- **Project Risk Assessment** is a project risk registry with highlighted risks and associated mitigation plans (Attachment 2).
- **Project Expenditures** is the financial activity for the project
- **Project Timeline** is a timeline chart presenting our current state and upcoming milestones for 2019 (Attachment 3).
- **Key Project Focus Area Update** is an update and activity report on one or more of the five key focus areas: leadership, governance, commercial, stakeholder and technical.

The quarterly reports will likely contain both public and confidential information. The quarterly reports and associated presentations will be structured accordingly. The flow and cadence of the quarterly reports provided to SPC on T&T will be as follows:

	2019 Q1 March 20	2019 Q2 June 26	2019 Q3 September 18	2019 Q4 December 18
Status Update	<ul style="list-style-type: none"> <li>• Project Progress Report Card</li> <li>• Risk Registry</li> <li>• Project Timeline</li> </ul>	<ul style="list-style-type: none"> <li>• Project Progress Report Card</li> <li>• Risk Registry</li> <li>• Project Timeline</li> </ul>	<ul style="list-style-type: none"> <li>• Project Progress Report Card</li> <li>• Risk Registry</li> <li>• Project Timeline</li> </ul>	<ul style="list-style-type: none"> <li>• Project Progress Report Card</li> <li>• Risk Registry</li> <li>• Project Timeline</li> </ul>
Key Project Focus Area Update	<ul style="list-style-type: none"> <li>• Technical Focus Area Update: Single Bore Design Development Plan</li> <li>• Future Stages Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Technical Focus Area Update: Preliminary Outcomes from the Single Bore Design Development Plan</li> <li>• Commercial Focus Area Update: Finance and Funding Strategy and Risk Management Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Technical Focus Area Update: VE/CR Outcomes</li> <li>• Stakeholder Focus Area Update: Taking Care of our Communities and Businesses</li> </ul>	<ul style="list-style-type: none"> <li>• Combined 2019 Q4 and Green Line Annual Report</li> </ul>

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### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

The Green Line Project Progress Report Card (Attachment 1) provides an overview of the key deliverables that have been achieved and those upcoming to be presented in the next progress report.

Some of the notable highlights of deliverables achieved to date, and of upcoming deliverables are identified below.

#### **Notable highlights of key deliverables achieved:**

- ✓ 2019 January 1 The Green Line adopted the Envision sustainability management system. Envision is a framework that provides decision support in the planning, design and delivery of sustainable and resilient infrastructure projects. Envision measures a project's contributions to conditions of sustainability across social, economic, and environmental indicators
- ✓ 2019 January 22 Priorities and Finance Committee of Council endorsed the optimization of the cash flow commitments for Green Line.
- ✓ 2019 January 25 Executive agreements received for the right-of-way required for the LRT between The City of Calgary Green Line and Canadian Pacific (CP) Railway
- ✓ 2019 January 30 Funding Agreement (Ultimate Recipient Agreement) was signed with the Provincial government, finalizing the combined \$3.06 billion in funding from the Provincial and Federal governments for Stage 1
- ✓ 2019 February 1 Request for Qualifications (RFQ) for Light Rail Vehicles (LRV) released to market and closing on 2019 March 28. The Green Line will use low-floor LRV technology that has not been used before in Calgary.

#### **Look ahead - upcoming key deliverables:**

- ✓ 2019 Q2 The hiring of the Green Line Managing Director to provide leadership and oversight
- ✓ 2019 Q2 Organizing the project team (structure, roles and responsibilities) for execution success
- ✓ 2019 Q2 Finalize the Project Execution Plan that will set the targets and performance monitoring for implementation
- ✓ 2019 Q2 Development of performance metrics and project dashboard metrics for real time updates on budget, schedule, safety, and quality
- ✓ 2019 Q2 Finalize the supplemental contracts strategy and inform the market
- ✓ 2019 Q2 Release the main project RFQ to the market

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For this 2019 Q1 report, there are three technical updates provided:

- Single bore development
- Future stages development
- Public gardens

### **Key Project Focus Area Update: Technical Update on the Single Bore Tunnel Design Development Plan**

Administration is currently working to sufficiently advance the Single Bore Tunnel design and to normalize the scope with the Twin Bore Tunnel Design. This work is necessary to provide a consistent scope between the two options to provide an operable, reliable and maintainable light rail system that meets ridership, runtime and reliability objectives.

The goal of this exercise is to sufficiently advance the Single Bore Tunnel design for Green Line Stage 1 to allow for a reasonable comparison to a Twin Bore solution. This exercise will inform on whether a particular solution provides an advantage in terms of land impacts, schedule impacts and cost impacts.

Administration continues to evaluate the tunnel through constructability, value engineering, optimization of the design, identification and mitigation of risks to ensure optimum value and long-term operations.

### **Future Stages Analysis:**

Attachment 4 of this report provides an evaluation of the benefits of various potential stage 2 candidate projects. The projects are presented in groupings, established to represent a potential increasing magnitude of capital funding. The groupings were developed based on the announced dedicated funding of approximately \$200 million per year for transit projects outlined in the Province's approved City Charters Fiscal Framework Act. This report does not provide a recommendation on the next stage for the Green Line LRT. The recommended next step is to advance the planning for the candidate projects to validate the constructability and capital cost of the candidate projects.

### **Public Gardens:**

The City Shaping team, in collaboration with the Green Line business unit, Calgary Parks business unit and Public Art team are working on the scoping report for the Public Gardens Notice of Motion (C2018-1445).

An informal steering committee was formed with fifteen representatives/subject matter experts who were brought together to meet and discuss the tasks identified within the notice of motion. Two meetings were held with the informal steering committee, one in February and one early in March. The first meeting focused on the potential and possibilities of public gardens, the opportunity to engage with partners and sponsors, and the desire by the private sector to invest. The second meeting was a report back to the team on what we heard, discuss feasibility and risks. Administration is scheduled to report back to Transit and Transportation Committee 019 April 24, with a scoping report and recommended next steps.

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### **Strategic Alignment**

#### **Social, Environmental, Economic (External)**

The project aligns with social, environmental and economic priorities of The City and the priorities of the provincial and federal governments. Green Line is planned to improve quality of life by providing people with options on how to move, work, live, and play, and allows more affordable access to essential community services.

As part of its alignment with environmental priorities, the Environmental Management Program (EMP) focuses on realization of greenhouse gas (GHG) reduction benefits. The Green Line Project is tasked with satisfying City of Calgary, and federal and provincial funding partner requirements that include: climate resilience reporting; environmental assessments; First Nations consultation; application of the Envision management system; and the provision of technical environmental requirements and guidelines to satisfy the procurement process.

#### **Financial Capacity**

##### ***Current and Future Operating Budget:***

There is no impact to the operating budget from this report.

Future operating budget impacts includes the following:

On 2017 May 15, and 2017 November 27, a preliminary estimate was provided to Council on the estimated annual incremental operating and maintenance costs for the Stage 1 project. This \$40 million per year estimate, in 2016 dollars, continues to be supported following the completion of the constructability review and further technical reviews.

This estimate is dependent on several factors and will be further refined once the major construction contract has been awarded and the construction schedule is set. The operating and maintenance costs are currently not funded and an ongoing funding source will need to be in place prior to the start of operations. This will be reviewed during the current One Calgary cycle with refinements and updates to be finalized in the next business and budget cycle (2023 to 2026).

##### ***Current and Future Capital Budget:***

The Project had previously received funding for its enabling works projects that are related to preparing the right-of-way for the Stage 1 major construction. The enabling works budget is \$360.6 million, and is provided by funding programs from the three orders of government that are separate from the main Stage 1 Project funding (Federal Public Transit Infrastructure Fund (PTIF) 1 = \$111 million, provincial 50% PTIF match = \$55.5 million, provincial GreenTRIP = \$92.4 million, City 50% match of PTIF 1 & GreenTRIP = \$101.7 million). Capital expenditures for the Project are anticipated to align with funding from all three levels of government.

In addition, as part of the Action Plan business plan and budget cycle, \$520 million of capital funding was approved for the Stage 1 project, which represents 10 years of City funding at \$52 million per year from 2015 to 2025.

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As a result of the Ultimate Recipient Agreement being signed, Administration will analyze cost estimates in conjunction with approved funding and will return to Council with a capital budget request for the current cycle that aligns to projected spend rate.

### ***Expenditures to date:***

As at 2018 December 31, the estimated expenditures incurred total \$158 million for 2018. The total expenditures since inception are estimated at \$370 million as at December 31, 2018.

### ***Committed costs:***

As at 2018 December 31, total commitments for the project is estimated at 515 million consisting of \$129 million in enabling works commitments and \$155 million in commitments.

## **Risk Assessment**

The Green Line LRT project risks are being tracked and actioned every month. There are a number of major risks which are being tracked as identified in the attached Risk Registry (Attachment 2). The largest risk continues to be associated with the complexity of the construction of the tunnel.

This report also introduces the Project Progress Report Card (Attachment 1) which provides an evaluation of the project with respect to the five key focus areas. As can be seen from the Progress Report Card, work is required in all focus areas prior. Mitigation plans have been developed and are being executed and the 2019 Q2 Project Progress Report Card will be used to communicate the status.

## **REASON FOR RECOMMENDATION:**

This report is the first quarterly report for 2019 provided to the Transportation and Transit Committee to update Committee and Council as to the progress of the Green Line project. This report establishes the format of the future reports and outlines the activities of the project for the first three months of 2019.

## **ATTACHMENTS**

1. Attachment 1 – 2019 Q1 Green Line LRT Quarterly Progress Report Card
2. Attachment 2 – Green Line Risk Registry
3. Attachment 3 – Green Line LRT Project Timeline
4. Attachment 4 – Future Stages Analysis