

**Transportation Report to  
SPC on Transportation and Transit  
2019 September 18**

**ISC: UNRESTRICTED  
TT2019-1073**

**Green Line Q3 2019 Update**

---

**EXECUTIVE SUMMARY**

This report updates Council on the status of the Green Line LRT project for the period of 2019 Q3. The two focus areas that Administration committed to report back on include a technical update on Value Engineering/Constructability Review outcomes and an overview on the Green Line Stakeholder Relations Program.

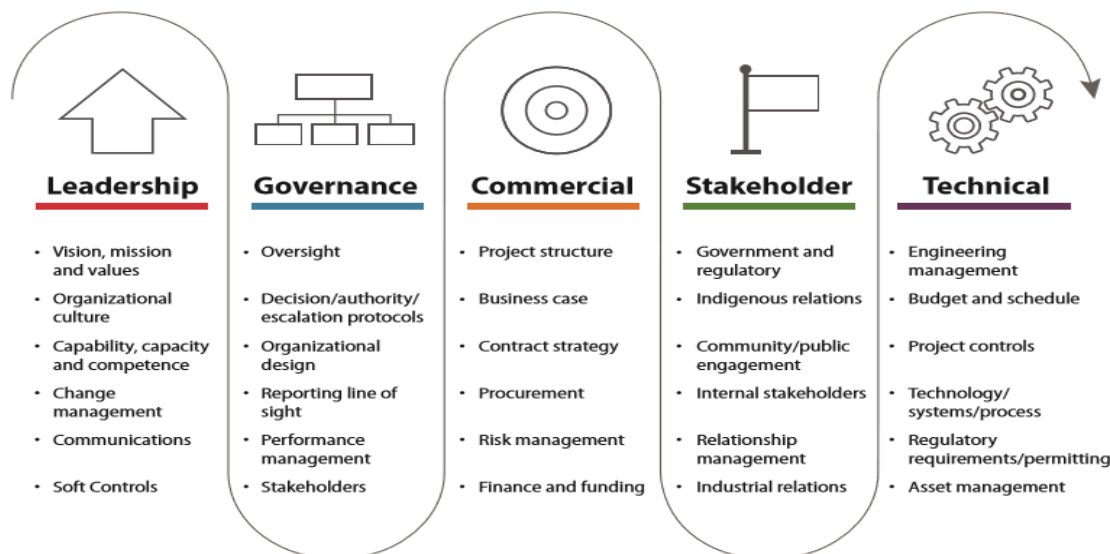
Green Line is vital to the future of Calgary and benefits all Calgarians. The project will enable The City to achieve significant economic, social and environmental benefits. This opportunity comes at a critical time when Calgary is facing challenging economic conditions. To ensure that The City can maximize the benefits of joint funding with the provincial and federal governments, Administration is continuing to evaluate the projects readiness for procurement, the acceptable risk tolerance and the need to responsibly manage the project delivery in order to deliver Stage 1 within budget and on schedule.

The Q3 quarterly report addresses how Administration has been responding to the identified project risks with the objective of fulfilling the project vision and delivering a transit service that improves mobility choices for Calgarians, connecting people and places and enhancing the quality of life in the city.

Successful delivery of Green Line Stage 1 requires the integration of the five focus areas: Leadership, Governance, Commercial, Stakeholder and Technical. The Q3 quarterly report summarizes the progress that the project has made in each of these areas.

This report also presents new and emerging items which are summarized in the “Q4 Look Ahead- Upcoming Key Deliverables”. In addition, an update on the progress Administration has been making on the Notice of Motion that Council approved at the 2019 July 29 Combined Meeting of Council (TT2091-0811) is provided in Attachment 4. In addition, the Technical and Risk Committee has been established and will provide an update on aspects of their work.

**Green Line Project Focus Areas:**



**Transportation Report to  
SPC on Transportation and Transit  
2019 September 18**

**ISC: UNRESTRICTED  
TT2019-1073**

**Green Line Q3 2019 Update**

---

**ADMINISTRATION RECOMMENDATION:**

That the Standing Policy Committee on Transportation & Transit recommend that Council: Direct Administration to return with a status report no later than Q4 2019.

**PREVIOUS COUNCIL DIRECTION / POLICY**

At the 2019 April 08 Combined Meeting of Council, Report TT2019-0245 (Green Line Q1 Update) was received for information.

At the 2019 April 08 Combined Meeting of Council, Report AC2019-0353 (Green Line Project Governance Audit) was received for information.

At the 2019 July 29 Combined Meeting of Council, Report TT2019-0811 (Green Line Q2 Update) was received for information, and that the Document Outlining Alternate Recommendations 1 to 11 (Attachment 4), that Council, by general consent, requested that they be voted on separately.

That with respect to Recommendations 2 and 4 through 11 of Report TT2019-0811, the following be adopted:

That Council:

2. Direct Administration not to proceed with construction of the Green Line Light Rail Transit Project – Contract #1 (4th Street SE to Shepard SE) until the alignment review from 16th Ave North to 4<sup>th</sup> Street SE has been completed and any potential changes have been approved by Council;

4. Direct Administration to have the Green Line Technical Risk Committee carry out an independent peer review of the following

- Overall project budget and scope;
- Sufficiency of funding for the Project;
- Suitability of the proposed technical solution with respect to Contract 2;
- Deliverability of the Project;
- Risk identification, quantification and mitigation process; and
- Suitability and adequacy of the governance and resourcing of the Project;

5. Direct Administration not to release the Request for Qualifications (RFQ) to the market for Contract #1 (4th Street SE to Shepard SE) until the RFQ has been reviewed by the Green Line Technical and Risk Committee;

6. Direct Administration to have the Green Line Technical and Risk Committee report to the SPC on Transportation & Transit Committee as part of the Green Line quarterly updates with respect to their independent peer review over the previous quarter;

7. Direct Administration to work with our funding partners to obtain agreement that any capital cost savings from the Green Line Stage 1 (16 Ave N to 126 Ave SE) project will be applied to the required land assembly, corridor preparation, and design and construction of extensions north and south (outside the Stage 1 project), with sequencing of the extensions to be determined utilizing the RouteAhead Project Prioritization Framework;

**Transportation Report to  
SPC on Transportation and Transit  
2019 September 18**

**ISC: UNRESTRICTED  
TT2019-1073**

**Green Line Q3 2019 Update**

---

8. Direct Administration to initiate land assembly on an opportunity basis north of 16 Ave North, for Green Line future stages utilizing the Transportation Future Land Fund or the Revolving Fund for General Land Purchases, as a funding source; and

9. Direct Administration to develop a scoping study to examine opportunities for improvements to interim rapid transit services from North Pointe south along the Centre Street corridor and report back to the SPC on Transportation and Transit by Q1 2020. The scoping study will identify the next steps required to deliver functional planning, preliminary and detailed designs;

10. Continue advocacy efforts with our funding partners to secure funding to complete the full Green Line LRT; and

11. Direct Administration to undertake a review of risks associated with any potential alignment decisions that affect downtown real estate development values, and City Assessment values.

That with respect to Recommendation 1 of Report TT2019-0811, the following be adopted:

That Council:

1. Direct Administration to split the procurement of the Green Line Stage 1 Project into multiple contracts from 16 Avenue North to 126 Avenue Southeast.

That with respect to Recommendation 3 of Report TT2019-0811, the following be adopted:

That Council:

3. Direct Administration to conduct a feasibility review of potentially including the North Pointe to 16<sup>th</sup> Ave corridor along Centre Street in Stage 1 if the 16<sup>th</sup> Ave to 4<sup>th</sup> Street corridor is not resolved by January 2020, to be included only once confirmed with our funding partners;

**BACKGROUND**

On 2017 June 26, Council approved the vision for the Green Line LRT, which is to deliver:

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

Administration was subsequently directed to deliver the first stage of the Green Line project.

**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.*

Green Line quarterly update reports present status and progress on key activities, deliverables and major milestones as part of the execution phase, and are based on five key focus areas: leadership, governance, commercial, stakeholder and technical.

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 adjusted as required to respond to any new, emerging or urgent items.

**Transportation Report to  
SPC on Transportation and Transit  
2019 September 18**

**ISC: UNRESTRICTED  
TT2019-1073**

**Green Line Q3 2019 Update**

---

At the 2019 March 20 SPC on Transportation and Transit, Administration confirmed that the Green Line quarterly reports will include the following:

**Project Progress Report Card** - 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** - high-level project risk registry with highlighted risks and associated mitigation plans (Attachment 2).

**Project Expenditures** - financial activity for the project

**Project Timeline** - timeline chart presenting the current state and upcoming milestones (Attachment 3).

**Key Project Focus Area Update** - update and activity report on one or more of the five key focus areas.

The 2019 quarterly reports scheduled to be presented to the SPC on Transportation and Transit are as follows:

	Q1 2019 March 20	Q2 2019 June 26	Q3 2019 September 18	Q4 2019 December 18
Status Update	Project Progress Report Card Risk Registry Project Timeline Project Progress Photos	Project Progress Report Card Risk Registry Project Timeline Project Progress Photos	Project Progress Report Card Risk Registry Project Timeline Project Progress Photos	Project Progress Report Card Risk Registry Project Timeline Project Progress Photos
Key Project Focus Area Update	Technical Focus Area Update: Single Bore Design Development Plan Future Stages Analysis	Technical Focus Area Update: Preliminary Outcomes from the Single Bore Design Development Plan Commercial Focus Area: Update: Finance and Funding Strategy and Risk Management Plan	Technical Focus Area Update: VE/CR Outcomes for the Single and Twin Bore Design Stakeholder Pillar Update: Stakeholder Relations Program	Combined 2019 Q4 and Green Line Annual Report

Transportation Report to  
SPC on Transportation and Transit  
2019 September 18

ISC: UNRESTRICTED  
TT2019-1073

## **Green Line Q3 2019 Update**

---

### **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 Q4 progress report.

Some of the notable highlights of deliverables achieved to date are below:

#### **Q3 Notable Highlights- Key Deliverables Achieved:**

- ✓ 2019 August Technical and Risk Committee established and Terms of Reference completed
- ✓ 2019 August Technical and Risk Committee, and Fairness monitor reviewed the RFQ, and incorporated changes in advance of it's release, and achieved the RFQ Procurement Process timeline milestone.
- ✓ 2019 August Request for Qualifications released. The RFQ is seeking qualified parties to bid on Segment 1 of the Green Line Stage 1 LRT project which extends from Ramsay to 126<sup>th</sup> S.E. and includes the Maintenance and Storage Facility (MSF)
- ✓ 2019 August Key Project Documents Completed to Final Draft Status: Project Governance Framework, Project Charter, Project Management Plan, and Risk Management Plan
- ✓ 2019 August Green Line Master Baseline Schedule updated. This schedule captures the most urgent and/or important high-level events and decision points that stand to impact the technical, schedule and/or cost performance of the project.

#### **Q4 Look Ahead- Upcoming Key Deliverables:**

- ✓ Q4 2019 Key Project Documents Implementation
- ✓ Q4 2019 Project Agreement including key commercial terms completed
- ✓ Q4 2019 Request for Qualifications for both Utility Contract Manager and Constructability Advisors released.

For this Q3 2019 report, two key focus area updates are provided:

- Technical Focus Area Update: Value Engineering/Constructability Review Outcomes for the full Green Line Project
- Stakeholder Focus Area Update: Stakeholder Relations Program for the full Green Line Project
- A status update on the 11 recommendations made by Council at its meeting on 2019 July 26 is provided in Attachment 4

Transportation Report to  
SPC on Transportation and Transit  
2019 September 18

ISC: UNRESTRICTED  
TT2019-1073

## **Green Line Q3 2019 Update**

---

- A status update on the evaluation for the Centre City is provided in Attachment 5.

Following presentation of this report, the newly established Green Line Technical and Risk Committee (TRC) will provide a separate and independent update, with a corresponding independent report and presentation at the 2019 September 18 SPC on Transportation and Transit.

### **Q3 Key Project Focus Areas Update:**

#### **Technical Update - Green Line Value Engineering and Constructability Review Outcomes**

##### **Segment 1 (Ramsay to 126 Avenue S.E.)**

Under the new Managing Director, Value Engineering sessions for all disciplines have commenced and are scheduled to be completed by the end of September 2019. Value Engineering sessions are focused on optimizing construction costs and schedule, while also ensuring the overall public benefits and urban design features are not impacted. To date, value engineering has been completed for major structures, including bridges, retaining walls, underpasses and elevated guideways. This will also include a value engineering session for the MSF at Shepard. Results of the value engineering exercise will be captured and reflected in the updated overall cost estimate in November 2019 to update the overall project estimate to report back to the Transit and Transportation Committee at the beginning of Q1 2020.

##### **Centre City Route Evaluation (16 Avenue N to Ramsay)**

As per council direction from Report TT2019-0811, the Green Line Team is evaluating the route from 16 Avenue North to in order to develop a recommendation for a revised route that can be constructed within budget, and which reduces construction risks, delivers benefits to Calgarians, and achieves the vision of the Green Line LRT project. An update on this work is summarized in Attachment 5, and Administration will be reporting back to Transportation and Transit Committee on the outcome and recommendations of this evaluation in January 2020.

#### **Stakeholder Update - Green Line Stakeholder Relations Program**

Green Line is currently developing and implementing a Stakeholder Relations Program to support the overall execution of the project. The mandate of this program is to establish and maintain relationships with stakeholders and help them prepare for and manage the potential impacts of construction and opening day operations of the Green Line LRT.

The Stakeholder Relations Program has been developed with three focus areas: (1) stakeholder relations management, (2) access management and (3) business support management.

Stakeholder Relations Management is focused on fostering and nurturing relationships with stakeholders who may be affected by Green Line construction and opening day operations. This section is responsible for facilitating project outreach and communications with stakeholders, working to help resolve stakeholder issues and concerns, and managing the Green Line's public inquiries process, including responses to 311 service requests.

Access Management is focused on developing and implementing tactics to help manage the potential impact of Green Line construction and opening day operations on individual properties,

## **Green Line Q3 2019 Update**

---

the mobility network and broader communities. This section facilitates planning efforts between private land developers and the Green Line technical team to help coordinate plans and minimize potential conflicts with concurrent construction activities.

Business Support Management is responsible for managing the potential impact of LRT construction on individual businesses and broader business zones. This work includes investigating the feasibility of a financial support program to help offset losses that businesses might incur as a result of Green Line construction, and exploration of opportunities to partner with business organizations to jointly help businesses prepare for and manage the potential impacts of construction.

Over the past year, the Green Line Stakeholder Relations team has been implementing its' mandate to help stakeholders prepare for and manage the potential impact of Green Line LRT construction, with a focus on the current enabling works and utility projects in the communities of Ramsay, Highfield, Ogden, and Beltline. The team has been focused on outreach activities with stakeholders most impacted by construction (e.g. through one-on-one interactions, small group meetings, community public information sessions), implementing construction access management plans, and coordinating construction efforts between the various third-party utility providers who are performing work on behalf of Green Line.

### **Strategic Alignment**

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

The Green Line project aligns with social, environmental and economic priorities of The City of Calgary. Green Line is vital to the future of Calgary and benefits all Calgarians. Once built, Green Line will provide Calgarians more mobility choices in how they travel around the city and will help the city reduce its greenhouse gas emissions by reducing car traffic on major commuter routes. The 20 km route will connect Calgarians to social and cultural destinations across the city, the urban design and infrastructure planning at key stations will be a catalyst for future transit oriented developments.

The Green Line Project is tasked with achieving The City of Calgary, 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. To meet funding partner requirements Green Line will be intentionally procuring goods and services to achieve overarching social, environmental, and economic goals while maximizing value in the purchases.

The City's contribution of the total \$4.9B project cost presents a significant value proposition to achieve economic, social and environmental benefits vital to the future of Calgary. The total investment of \$4.9B will create an estimated 12,000 direct and 8,000 indirect jobs, adding significant value to Calgary's economy. These benefits are already starting to occur with the \$469.3 million already invested to July 31 on the Green Line project.

Calgary is experiencing challenging economic times and Administration is addressing potential projects risks to ensure we are building a project that delivers on the vision within the approved budget and schedule. This will ensure that the project meets the needs of Calgarians, that the procurement process is competitive, and that the projects maximizes the economic and employment opportunities to the city.

**Transportation Report to  
SPC on Transportation and Transit  
2019 September 18**

**ISC: UNRESTRICTED  
TT2019-1073**

**Green Line Q3 2019 Update**

---

**Financial Capacity**

***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 of \$40 million per year was provided to Council on the estimated annual incremental operating and maintenance costs for the Stage 1 project. This estimate will be further refined once the major construction contracts have been awarded and the final project details are known. 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:***

Twenty-five million in funding was originally allocated to the Green Line SetWay project in 2014. As the project evolved, \$520 million of capital funding was approved for the Stage 1 project as part of the Action Plan business plan and budget cycle. This represented 10 years of City funding at \$52 million per year from 2015 to 2025. Extension of this funding for 30 years was approved in principle in December 2015 (NM2015-33).

The Project also received funding from the Federal government and the Provincial government for its enabling works projects that are related to preparing the right-of-way for the Stage 1 major construction. Final Stage 1 funding from the Federal and Provincial governments was then secured through the signing of the Ultimate Recipient Agreement in January 2019.

Total funding for the Project's Stage 1 is \$4.903Bln, comprised of;

Federal funding = \$1.642Bln

Provincial funding = \$1.701Bln

Municipal funding = \$1.560 Bln

In addition to the above, In November 2017 (C2017-1123) Council approved \$640 mln for Project financing costs (\$23.7Mln/year of tax room starting in 2018 through 2044). This was subsequently amended January 2019 (PFC2019-0040) to be used for both financing costs and capital costs, in order to have maximum flexibility to manage cash flows most efficiently.

As of July 31, the actual Project spend year-to-date is \$469.3 million.

**Risk Assessment**

All projects experience risk and to assist in mitigating this risk, Green Line has selected an independent Technical and Risk Committee composed of external industry project advisors in the areas of procurement, commercial strategies, stakeholder management, design, and construction, to support project oversight. This Committee will provide insights from leading practices and advise on key technical considerations and risks helping to ensure the successful delivery of Stage 1.

Administration continue to place high priority on the planning and monitoring of risks within all areas of the project. The Green Line Risk Management Plan is a key document that is currently



Transportation Report to  
SPC on Transportation and Transit  
2019 September 18

ISC: UNRESTRICTED  
TT2019-1073

### **Green Line Q3 2019 Update**

---

in its final stages of completion. The purpose of this Risk Management Plan is to describe the risk management process that will apply during the implementation of the Green Line LRT. This plan will serve as a guide to all Green Line Team members including the Green Line Executive Steering Committee, the Owner's Engineer and their sub-consultants.

The key objectives of this Risk Management Plan are to encourage the project team to take appropriate measures to:

- Minimize adverse impacts to reputation, project scope, quality, cost, and schedule
- Maximize opportunities to lower cost, shorten schedule and enhance quality
- Minimize management of crisis by proactively identifying, analyzing and mitigating Project risks
- Embed and instill a risk management culture into the Project by making risk management part of the day-to-day Project operations including co-ordination meetings and reporting

Tracking of risks and corresponding mitigation plans are highlighted in the Risk Registry (Attachment 2.)

<b>REASON(S) FOR RECOMMENDATION(S):</b>
---

### **ATTACHMENT(S)**

1. Attachment 1 – 2019 Q3 Green Line LRT Progress Report Card
2. Attachment 2 – 2019 Q3 Green Line Risk Registry
3. Attachment 3 – 2019 Q3 Green Line LRT Project Timeline
4. Attachment 4 – Status Update on the Document Outlining 11 Alternate Recommendations
5. Attachment 5 – Centre City Route Evaluation