



Green Line Board November 2022 Progress Report



Green Line Board Report

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1 Executive Summary

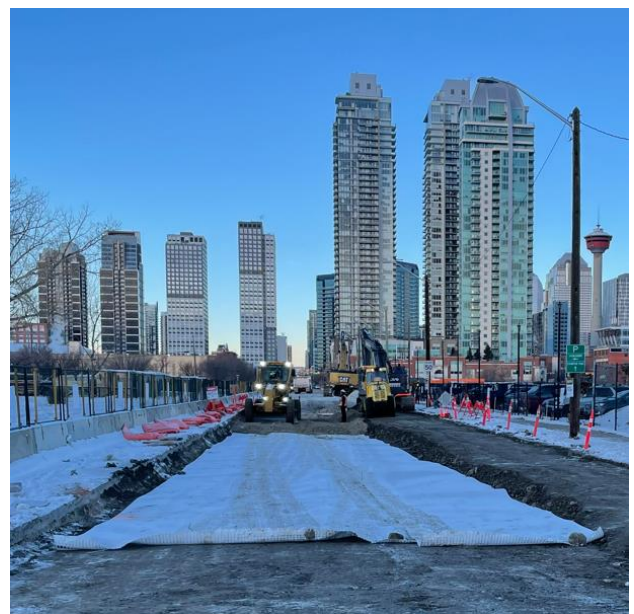
1.1 November Highlights

On November 15, 2022, Green Line hosted a Business Information Session event to provide local suppliers, contractors, and businesses with information on the Phase 1 Design Build Finance with Development Phase (DBF-DP) procurement process while also introducing them to the two pre-qualified proponent teams. More than 225 companies attended the event with 40 taking part in individual meetings with the proponent teams, following their presentations.

As part of the LRV contract, Construcciones y Auxiliar de Ferrocarriles (CAF) provided an LRV mock-up, which was received in November 2022. Green Line undertook an initial review of the mock-up with City of Calgary operations and maintenance stakeholders, including those representing accessible design groups. CAF participated in these reviews with the aid of specialized human factors consultants to optimize the design of the LRV.

The deep and shallow utility relocation work scheduled to complete this year in the intersection of Olympic Way and 12 Avenue SE has been completed on schedule and the intersection was opened to uninterrupted flow of traffic on November 10, 2022. The deep and shallow utility installation work is ongoing along north side of 12 Ave SE between 6 Street SE and 5 Street SE. A traffic detour is implemented at the intersection of 12 Ave SE and 6 Street SE to facilitate construction of a manhole. Coordination between area partners in the Beltline East and Downtown continues for ongoing detours to minimize traffic and pedestrian impacts in preparation for the upcoming works.

The pictures below provide a snapshot of the utility installation (water, sanitary, and sewer) and roadway works in 12 Ave SE, West of 6 Street SE.



Next Month Look Ahead

As part of the procurement process, Green Line will continue to review requests for information and participate in meetings with the two pre-qualified proponent teams.

Shallow utility work in Beltline will continue through December. Deep utility work on the north pass of 12 Avenue SE between 5 Street and 6 Street in Beltline East will be on hold through December due to winter weather conditions. Work at 12 Avenue SE and 6 Street will resume in early January.



The following construction activities for Beltline Downtown Utility Relocation Project (BDURP) are planned for December 2022:

Beltline

- Continue manhole and duct bank installation work on 5 Street SE between 11 Avenue and 12 Avenue SE.
- Complete duct bank work on Centre Street north, through and south of 11 Avenue SE.

Downtown

- Complete gas line relocation work on 5 Avenue SW between 4 Street and 2 Street SW.
- Continue duct bank relocation installation work on 4 Avenue SW between 1 Street and 2 Street SW.
- Continue duct bank relocations work at the following locations:
 - 7 Avenue SW between 2 Street and 1 Street SW
 - 1 Street SW between 7 Avenue and 2 Avenue SW
- Complete duct bank work on 3 Avenue just West of 2 Street SW

1.2 Program Status Dashboard

The table below provides the program status dashboard update for November 2022 including the overall program status and a comparison to the previous month.

Functional Area	Overall Program Status	Last Month's Status	Comments
Health & Safety	●	●	<ul style="list-style-type: none"> • There was one safety incident in November 2022. This incident was equipment related with no injuries or time lost. • Green Line has had no Lost Time Incidents (LTI), Medical Aid (MA) or First Aid (FA) incidents in the past year.
Environmental	●	●	<ul style="list-style-type: none"> • Site specific limited Environmental Site Assessment (ESA) work is ongoing.
Stakeholder Relations	●	●	<ul style="list-style-type: none"> • Connected with more than 45 businesses and key stakeholders in November 2022.
Schedule	●	●	<ul style="list-style-type: none"> • Phase 1 DBF-DP RFP activities are on schedule. • BDURP construction is on schedule.
Cost	●	●	<ul style="list-style-type: none"> • Green Line continues to proactively monitor program costs. • Appropriate mitigation measures for key risks continue to be established, reviewed, and implemented.
Quality	●	●	<ul style="list-style-type: none"> • Program Quality Management Plan implementation continued with ongoing oversight of BDURP construction works, and LRV Supply project quality compliance.

*Definition of legend for the dashboard in Appendix 1



1.3 Financial Summary as of November 30, 2022

Category	Committed Cost	Cost to Date	Cost Year to Date
Owner's Cost	\$78,722,152	\$78,242,525	\$12,966,439
Design & Engineering	\$283,610,488	\$265,415,778	\$28,964,511
Construction, Land & Other Assets	\$540,335,957	\$440,063,958	\$37,543,828
Bus Rapid Transit	\$4,551,457	\$4,551,457	\$1,257,550
Grand Total	\$907,220,054	\$788,273,717	\$80,732,328

*Details on specific inclusions in Appendix 1.

1.4 Milestone Schedule

As work progresses for Green Line, near term milestones and achievements for the program include:

- November 2022 – Delivery of LRV mock-up to Calgary (complete)
- Q1 2023 – Completion of LRV Preliminary Design Review (PDR) Submissions (on-going)
- Q1 2023 – Phase 1 DBF-DP Development Phase to begin

1.5 Risk Management

Risk is continually monitored by Green Line. Below are some of the key risk items for November 2022 that continue to be addressed by the team:

- Green Line continues to monitor financial market changes due to the current economic climate.
 - Regular external due diligence is ongoing as required to support Green Line.
- The market is unwilling to accept certain risks that have been transferred to the private sector in similar projects.
 - Green Line is proceeding with a strategy to utilize a DBF with Development Phase to best allocate, mitigate, and manage risks. This strategy takes into consideration successful market precedents.
 - Utility relocation works that are currently underway provide higher confidence to the prospective applicants in minimizing risks and encourage active participation through the procurement process.
- Utility relocation works in Beltline and Downtown are ongoing in tight working areas, which can potentially impact travelling public and pedestrians.
 - Green Line continues to proactively engage and notify stakeholders of potential construction related impacts (e.g., road closures).

1.6 Stakeholder Relations

The Business Information Session, held on November 15, 2022, provided local suppliers, contractors, and businesses with information on the procurement process while also introducing them to the two pre-qualified proponent teams. Feedback from the event was positive and additional opportunities to connect local contractors, trades and suppliers to the Development Partner will be pursued in 2023.

The arrival of the LRV mock-up provided an opportunity for the media and key stakeholders to preview the future vehicle, prior to the formal review process. Supported by daily social media posts before and after the reveal, the arrival of the mock-up generated considerable excitement about the new low-floor vehicles. Following the formal review, the mock-up will be shared with Calgarians at events in Summer 2023.



In addition to the construction notices sent to more than 80 stakeholders in Beltline and Downtown, the direct stakeholder outreach for November 2022 is summarized below.

Stakeholder Activity	Quantity
Business outreach*	35
Residential/property outreach*	0
Email/social/311 requests	13
Key stakeholder/partner meetings	11
Information sessions/events	2

* Outreach includes calls, meetings, and on-site visits.

The launch of a Green Line LinkedIn account in late October has delivered strong results with almost 1,100 followers by the end of November 2022. Engagement across all social channels remains high which continues to drive traffic to our website. As of November 30, 2022, there have been 98,838 visits and 236,313 page views on [Calgary.ca/greenline](https://calgary.ca/greenline).

2 Health and Safety

2.1 Overall Program

Green Line continues to provide oversight to ensure safety compliance by Green Line staff, consultants, and contractors at construction sites.

There were two safety incidents on Green Line in November 2022. The first incident resulted in minor property damage and no injuries occurred. On November 17, 2022, a side dump trailer made contact with a temporary construction fence panel while backing into the stockpile site located on south side of 11 Avenue SE, just West of 6 Street SE. A flag person was controlling traffic on 11 Avenue SE ensuring no traffic or pedestrian movement while the truck was reversing, however, there was no spotter to assist the truck driver safely enter the stockpile site. Green Line's management team immediately stopped the work due to safety concerns associated with repeat safety incidents. The contractor was requested to submit an update to their safety work plan to improve planning and execution to address safety concerns. The work resumed on November 22, 2022 after receiving a revised plan and assurances from the contractor to avoid similar incidents in future. The effectiveness and compliance of the plan is being reviewed on an ongoing basis.

The second incident occurred on November 24th to a GL City employee walking down the stairs between the 5th and 2nd floors as the elevators had been out of service for many days and the person's knee "locked". The worker initially reported it as a non-treated incident but a follow-up with the doctor resulted in recommendation for physiotherapy which makes the incident a Medial Aid.

Overall Program Metrics

The following tables contain the recorded incidents and non-compliance for the Program:

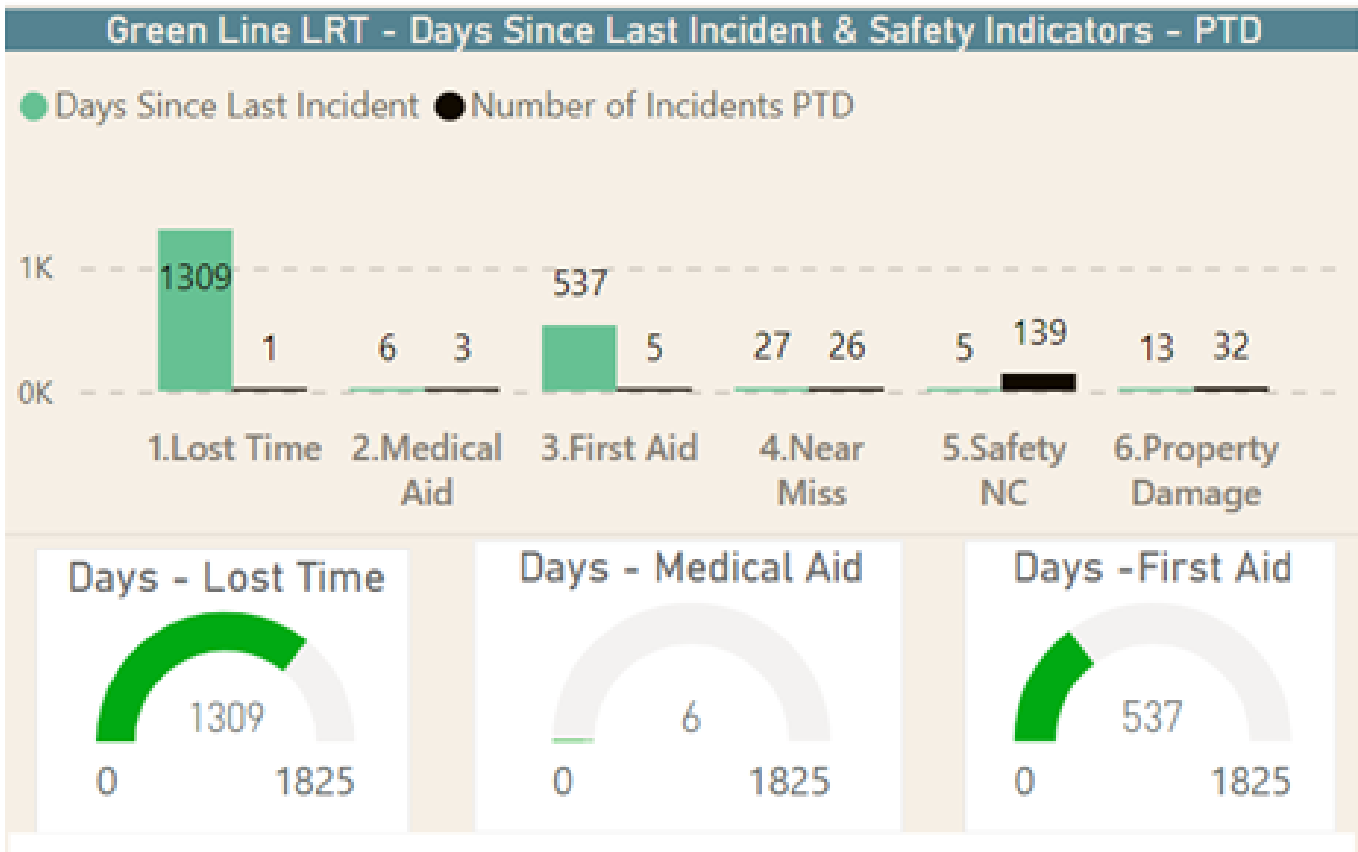


Table 1: Green Line Safety Incident Frequency Statistics

Performance Indicator		Green Line & City Staff	Contractors	Green Line, City Staff & Contractors
TRIFR: Total Recordable Injury Frequency Rate	per 200,000 hrs	●	●	●
*Statistics based on a rolling 12-month period from November 30, 2021, to November 30, 2022				

Overview of Safety Metrics as of November 30, 2022

The safety metrics are highlighted in the chart below and represent the Program to Date (PTD).



*NC = Non-Compliance
1825 days = 5 Years

Safety remains a focus for Green Line as BDURP construction activity continues in Beltline and Downtown. Safety Targets include zero Lost Time Incidents (LTI's) for all Green Line related work, compliance with monthly inspections on enabling works, requirement to input all safety records into the Green Line database, maintaining joint Occupational Health & Safety committee representation and performing safety audits.



Certificate of Recognitions Audit

Green Line completed the 2022 Certificate of Recognitions (COR) external audit interviews in October 2022. The audit ensures Green Line compliance with The City's Safety Management System. A debrief was held with the COR External Auditor who indicated positive results for Green Line. The final report is anticipated to be delivered to Green Line in late December 2022 or early January 2023. A subsequent safety audit action plan will be developed if any findings or opportunities for improvement are identified.



Appendix 1 – Dashboards & Financial Summary Legends

Dashboards Legends

Health and Safety	<p>Zero LTIs or</p> <p>Scheduled monthly site inspections completed with < 2 missed or Joint OH&S committee meetings and inspections on track or</p> <p>Green Line COR Internal Maintenance Audit completed with minor findings or all mandatory training complete</p>	<p>One LTI or</p> <p>≤5 scheduled site inspection not completed or missed a Joint OH&S committee meeting or inspection or</p> <p>Green Line COR Internal Maintenance Audit completed with major findings or <90% mandatory training completed</p>	<p>More than one LTI or</p> <p>>5 scheduled site inspections not completed or multiple Joint OH&S committee meetings or inspection not completed or</p> <p>Green Line COR Internal Maintenance Audit failed or less than 75% mandatory training complete</p>
TRIFR: Total Recordable Injury Frequency Rate	<p>Per 200,000 hrs</p> <p>≤1.33</p>	<p>Per 200,000 hrs</p> <p>>1.33 and ≤2.66</p>	<p>Per 200,000 hrs</p> <p>>2.66</p>
Environmental	<p>Greenline environmental requirements and permits are progressing and adhere to Municipal/Provincial/Federal Obligations.</p> <p>Quality of life impacts (noise, vibration, dust, light) resulting in minimal complaints from stakeholders or elected officials.</p>	<p>Specific Environmental permits or requirements are in progress; reliance on approving authorities timelines may cause temporary delays. Delays not expected to impact critical path.</p> <p>Quality of life impacts (noise, vibration, dust, light) resulting in moderate complaints from stakeholders or elected officials.</p>	<p>Contract requirements conflict or falling to meet the Municipal/Provincial/Federal obligations. Risk to schedule critical path or budgets.</p> <p>Quality of life impacts (noise, vibration, dust, light) resulting in significant public complaints from stakeholders or elected officials.</p>
Stakeholder Relations	<p>Minimal risk of reputational damage or localized stakeholder issues</p>	<p>Moderate risk of reputational damage or Multiple stakeholder issues that require urgent action</p>	<p>Severe risk of reputational damage or Major risk with funding partners</p>
Schedule	<p>No delay to critical activities or critical milestones</p>	<p>Delay to intermediate milestones by less than two weeks</p>	<p>Delay to critical activities or critical milestones</p>



Cost	Costs forecast within the budget	Costs forecast to be over budget by less than 35% of retained contingency	Cost forecast to be over budget by more than 35 % retained contingency
Quality	Quality requirements adequate/defined or in progress or Audits performed per plan with no/minor findings or NCR identification and resolution are within expectations	Quality requirements not adequate/defined in at least one area or Audits performed per plan with one or more major findings or NCR identification and resolution are not trending downward	Quality requirements not adequate/defined in multiple areas or Audits not performed or performed with many major findings or NCR(s) remain open that impact the safety/security and quality of new infrastructure or would adversely affect the ability to achieve Substantial Completion or MSF Completion

Financial Summary Legend

Owner’s Costs: Include City of Calgary Staff Time, Communications, Software, and General Corporate Overheads and Inter- Business Unit costs.

Design & Engineering: Includes all OE costs as well as general Project Consultants costs.

Construction, Land & Other Assets: Includes Land, Enabling Works, and Quick Win build costs.

Bus Rapid Transit: Includes all costs related to the Bus Rapid Transit work for Green Line.

Committed Costs represent issued PO values only for Design & Engineering and Construction, Land & Other Assets. For Owner’s Costs and Bus Rapid Transit these are primarily costs incurred to date.



Appendix 2 – Report Acronyms

The following acronyms apply to this Board Report:

Acronym	Term
ACO	Aboriginal Consultation Office
ARP	Area Redevelopment Plan
BDURP	Beltline Downtown Utility Relocation Project
BIA	Business Improvement Area
CA	Community Association
CAF	Construcciones y Auxiliar de Ferrocarriles
CDR	Conceptual Design Review
CEO	Chief Executive Officer
CM	Construction Manager
DBF	Design-Build-Finance
DBF-DP	Phase 1 DBF with Development Phase
DLO	Department of License of Occupation
GhG	Greenhouse Gas
GMP	Guaranteed Maximum Price
ICIP	Canada Infrastructure Program
IIP	Infrastructure Interface Package
LPRT	Land and Property Rights Tribunal (LPRT)
LRV	Light Rail Vehicle
MTA	Master Transaction Agreement
NCR	Construction Nonconformance Report
OE	Owner's Engineer
QMS	Quality Management System
RFI	Request for Information
RFP	Request for Proposals
RFQ	Request for Qualifications
TBM	Tunnel Boring Machine
TPR	Technical Performance Requirements