



Green Line Board February 2023 Progress Report

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1.0 Executive Summary

In February, Green Line received the 2022 Certificate of Recognition (COR) for its external safety audit (completed in October 2022) and attained a COR Audit Score of 98%. The month of February also saw no safety or environmental incidents.

February saw an extra push by Green Line to connect with businesses and work toward completing the [business registry](#) for the Beltline and Downtown. The website was updated with an overview of construction occurring in 2023, new maps showing construction impact zones, and improved navigation making the Construction Impacts and Notices page easier to find.

On February 8, 2023, the City of Calgary’s Accessibility / Access Design Committee visited the LRV mock-up at the Anderson Garage and reviewed the LRV design in an interactive session.

Delivery Partner onboarding activities, including resourcing and mobilization, continued throughout February and are on target to have the full Technical Advisory Services Team onboarded for the Development Phase.

Beltline Downtown Utility Relocation Program (BDURP) continued throughout February. This work includes the relocation of underground utilities to make way for construction of the Green Line tunnel and stations in the Downtown and Beltline.

1.1 February Construction Highlights

[Construction activities](#) in Beltline and Downtown continued during the month of February despite high snow volumes. All efforts were made to minimize construction impacts to the travelling public which included adding wayfinding for pedestrians, cyclists, and transit users. We continue to coordinate construction activities among third-party utilities, PCL, and The City’s Mobility business unit to minimize traffic disruptions through the construction zones.

Shallow utility relocations (such as third-party telecom, electricity, and gas utilities) will continue to ramp up throughout 2023 within Beltline and Downtown, in addition to engineering design works for the remaining shallow utility work. Deep utility relocation works in Beltline include City sanitary, water and stormwater utilities. The following utility relocation work in the Beltline and Downtown continued during February with a look ahead at planned construction activity for the month of March:

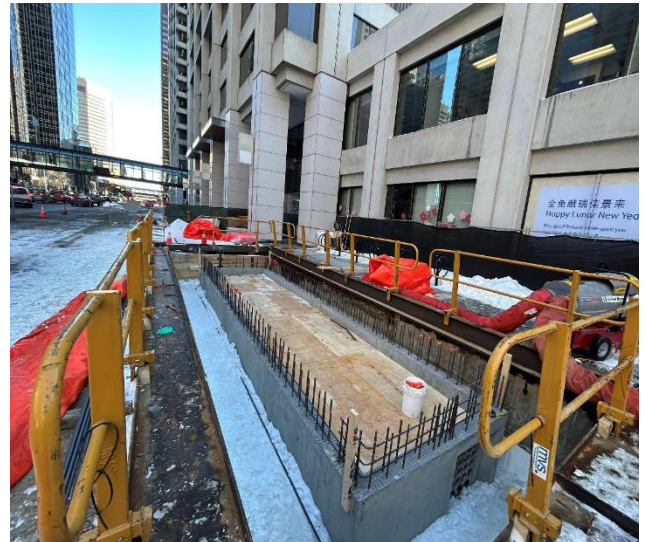
Beltline		
Construction activity	February	March
Installation of deep utilities on 12 Avenue, east of 5 Street S.E.	Underway	Continues
Installation of a new manhole at the intersection of 12 Avenue S.E. and 6 Street S.E.	Underway	Expected completion
Enmax vault installation work on 5 Street, north of 12 Avenue S.E.	Underway	Expected completion
Installation of a new storm manhole on Olympic Way, north of 12 Avenue S.E.	-	Expected to begin mid March
Installation of a new sanitary manhole on Olympic Way, north of 12 Avenue S.E.	-	Expected to begin mid March
Transmission Line relocation work in 10 Avenue S.W. between 2 Street S.W. and MacLeod Trail S.E.	-	Expected to begin at the end of March

Downtown		
Construction activity	February	March
Telus duct bank relocation work on 4 Avenue S.W. between 1 Street and 2 Street S.W.	Underway	Continues
Enmax duct bank relocation works at: <ul style="list-style-type: none"> • 7 Avenue S.W. between 2 Street and 1 Street S.W. • 1 Street S.W. between 7 Avenue and 2 Avenue S.W. 	Underway	Continues
Enmax vault installations on 5 Avenue S.W.: <ul style="list-style-type: none"> • east of 2 Street S.W. • west of 2 Street S.W. 	Underway	Continues
Telus vault installation on 3 Avenue S.W., west of 2 Street S.W.	Underway	Expected completion

The pictures below provide a snapshot of the ongoing utility installation works.



Looking southeast at manhole installation work at 12 Avenue and 6 Street S.E.



Looking east at Enmax vault installation at 2 Street S.W. and 5 Avenue S.W.

1.2 Program Status Dashboard

The table below provides the program status dashboard update for February 2023, 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 were no safety incidents in February 2023. • The external COR safety audit report was received, and the safety audit action plan is being developed.
Environmental	●	●	<ul style="list-style-type: none"> • There were no environmental incidents in February 2023. • As part of the land acquisition process, the site-specific limited Environmental Site Assessments (ESA) are progressing as planned.
Stakeholder Relations	●	●	<ul style="list-style-type: none"> • Connected with 238 businesses, residents, and key partners in February 2023.



Functional Area	Overall Program Status	Last Month's Status	Comments
			<ul style="list-style-type: none"> Developed enhanced safety and accessibility graphics, website content, and social media animations in response to increased interest in Green Line design.
Schedule			<ul style="list-style-type: none"> Phase 1 DBF-DP RFP activities are on schedule. BDURP construction key milestones 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 identified and implemented.
Quality			<ul style="list-style-type: none"> Program Quality Management Plan implementation continued with ongoing oversight of design quality management, BDURP construction works, and LRV Supply project quality compliance.

*Definition of legend for the dashboard in Appendix 1

1.3 Financial Summary as of February 28, 2023

Green Line continues to monitor the financial position of the program.

Category	Committed Cost	Cost to Date	Cost Year to Date
Owner's Cost	\$82,709,490	\$82,229,863	\$2,263,746
Design & Engineering	\$286,252,002	\$271,886,730	\$3,387,496
Construction, Land & Other Assets	\$541,749,825	\$458,940,808	\$3,177,885
Bus Rapid Transit	\$4,643,433	\$4,643,433	\$137
Grand Total	\$915,354,750	\$817,700,834	\$8,829,263

*Details on specific inclusions in Appendix 1.

1.4 Milestone Schedule

Upcoming milestones and achievements for the Green Line program include:

- Q1 2023 – Completion of LRV Milestone for Key System Suppliers award
- Q2 2023 – Completion of outstanding clarification on the LRV Preliminary Design Review (PDR) Submissions
- Q2 2023 – Phase 1 DBF-DP Development Phase to begin

1.5 Risk Management

Risks are continually monitored by Green Line, some key risk items from February 2023 that are being addressed are:

- Green Line continues to monitor financial market changes due to the current economic climate. Regular external due diligence is ongoing to identify, evaluate and validate information and assumptions.



- Utility relocation works in Beltline and Downtown are ongoing in busy traffic corridors, which has a potential to significantly impact travelling public and pedestrians. Green Line continues to proactively engage and notify stakeholders of potential construction related impacts (e.g., road closures) and is working actively with City business units on a regular basis to optimize traffic control, lane closures, and assist with traffic management in Beltline and Downtown overall.

1.6 Stakeholder Relations

BDURP construction activity continues to increase requiring expanded coordination to support the compounding traffic and pedestrian detours in Beltline and Downtown.

A safety and accessibility campaign was launched profiling ground-level stations, underground stations, and LRV train features. This included updates to the Safety and Accessibility and LRV web pages, infographics, and three animated videos showcasing what features people can expect when Green Line is operating. Green Line invited members of The City’s Advisory Committee on Accessibility to visit the LRV mock-up at Anderson Garage. A tour was provided, and the committee members had a chance to explore the LRV, ask questions and provide input/suggestions on accessibility features of the LRV.

On February 7, Green Line provided a project update to the community of Millican-Ogden, shared information about the upcoming enabling works construction in the area and answered questions.

In addition to the six (6) construction notices sent to more than 104 stakeholders in Beltline and Downtown during the month of February, the direct stakeholder outreach for February 2023 is summarized below.

Outreach Activity	Activity (February)
Business outreach*	197
Residential/property outreach*	11
Key stakeholder/partner meetings	30
Email/social/311 requests	22
Information sessions/events	1

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

Website development continued with updates shaped by project needs and analysis of metrics and stakeholder queries. In addition to the changes to the LRV page, improvements were made to the Construction section including an overview of construction in 2023, new maps showing construction impact zones, and improved navigation making the Construction Impacts and Notices page easier to find. The chart below provides an overview of the most viewed webpages in February.

February Website Metrics

Top 10 Pages in February	Unique Page Visits	Number of Page Views	Average Time on Page
Home	5,948	7,549	1:25
Map	4,303	5,166	3:17
Construction	1,476	1,969	1:20
Future Stages	1,039	1,295	2:06
Station Details	892	1,399	3:35
Planning	859	1,111	0:59
Procurement Status	827	1,023	3:15
Safety and Accessibility	643	732	3:06



Construction Impacts	566	796	3:47
Utility Relocation Project	454	563	3:42
Total	11,648	30,573	1:40

2.0 Health & Safety

Green Line monitors safety compliance by Green Line staff, consultants, and contractors at construction sites.

There were no safety incidents in February 2023.

Safety remains a focus for Green Line as BDURP construction activity continues in the Beltline and Downtown areas. 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.

Safety Audit

In February, Green Line received the 2022 COR for its external safety audit (which was completed in October 2022) and attained a COR Audit Score of 98%. A subsequent safety audit action plan is being developed based on the opportunities for improvement identified in the audit report.

Green Line staff is working with an external consultant to audit the CM Contractor's Safety Management System, and to provide a strategy for improving safety performance through a collaborative effort of sharing information and lessons learned.

Safety Reporting

Table 1: Overview of Safety Metrics as of February 28, 2023

This chart represents the Program to Date (PTD) safety metrics.

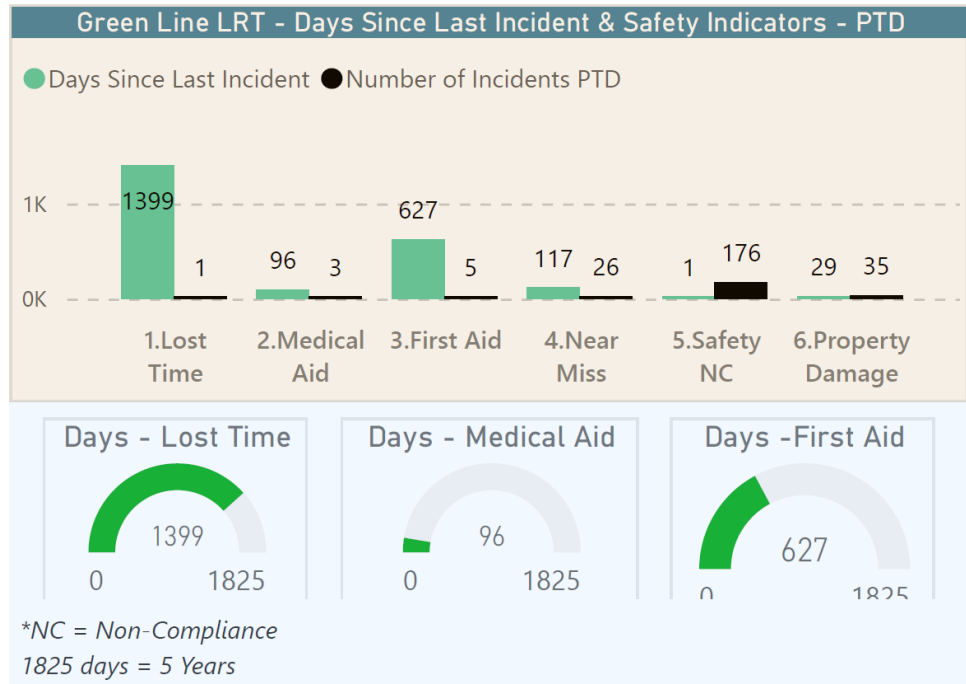




Table 2: Green Line Safety Incident Frequency Statistics

Performance Indicator		Green Line & City Staff	Contractors	Green Line, City Staff & Contractors
TRIFR: Total Recordable Injury Frequency Rate	per 200,000 hrs			
<i>*Statistics based on a rolling 12-month period from February 28, 2022, to February 28, 2023</i>				



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	No delay to critical activities or critical milestones	Delay to intermediate milestones by less than two weeks	Delay to critical activities or critical milestones
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.