

Calgary



Green Line Committee
June 1, 2020



Three Reports

- **Green Line Update Stage 1**
GC2020-0583
Public Presentations
- **Green Line Program Governance**
GC2020-0582
No Public Presentations
- **Green Line Budget and Financing Approval**
GC2020-0616
No Public Presentations

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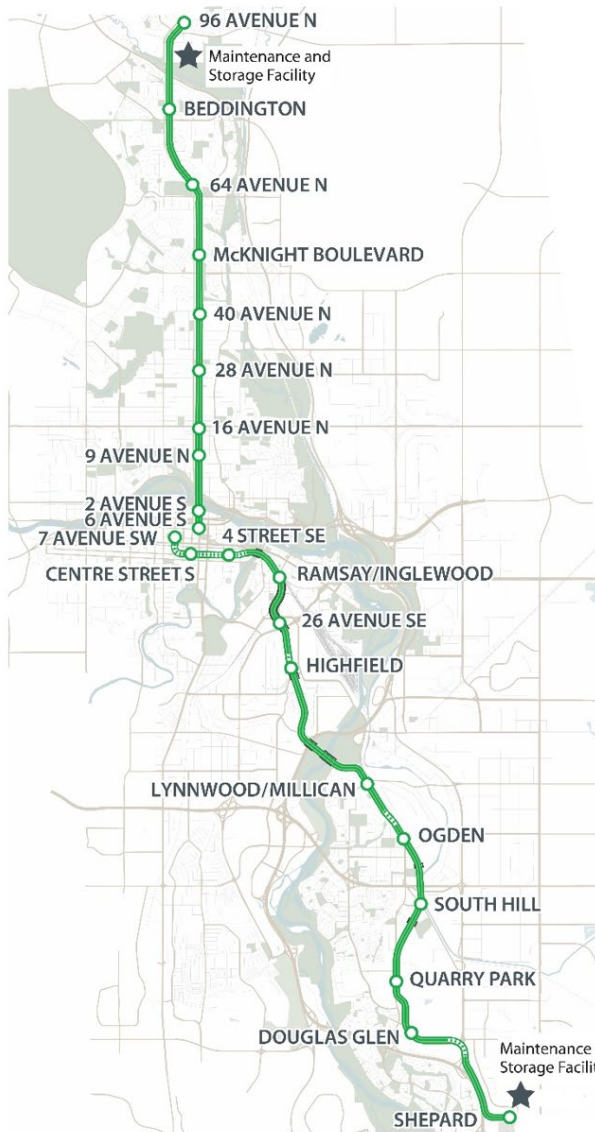
Green Line Committee

Green Line Update Stage 1
GC2020-0583

2020 June 1

Making a decision today when it
seems that **the world has such
great uncertainty?**

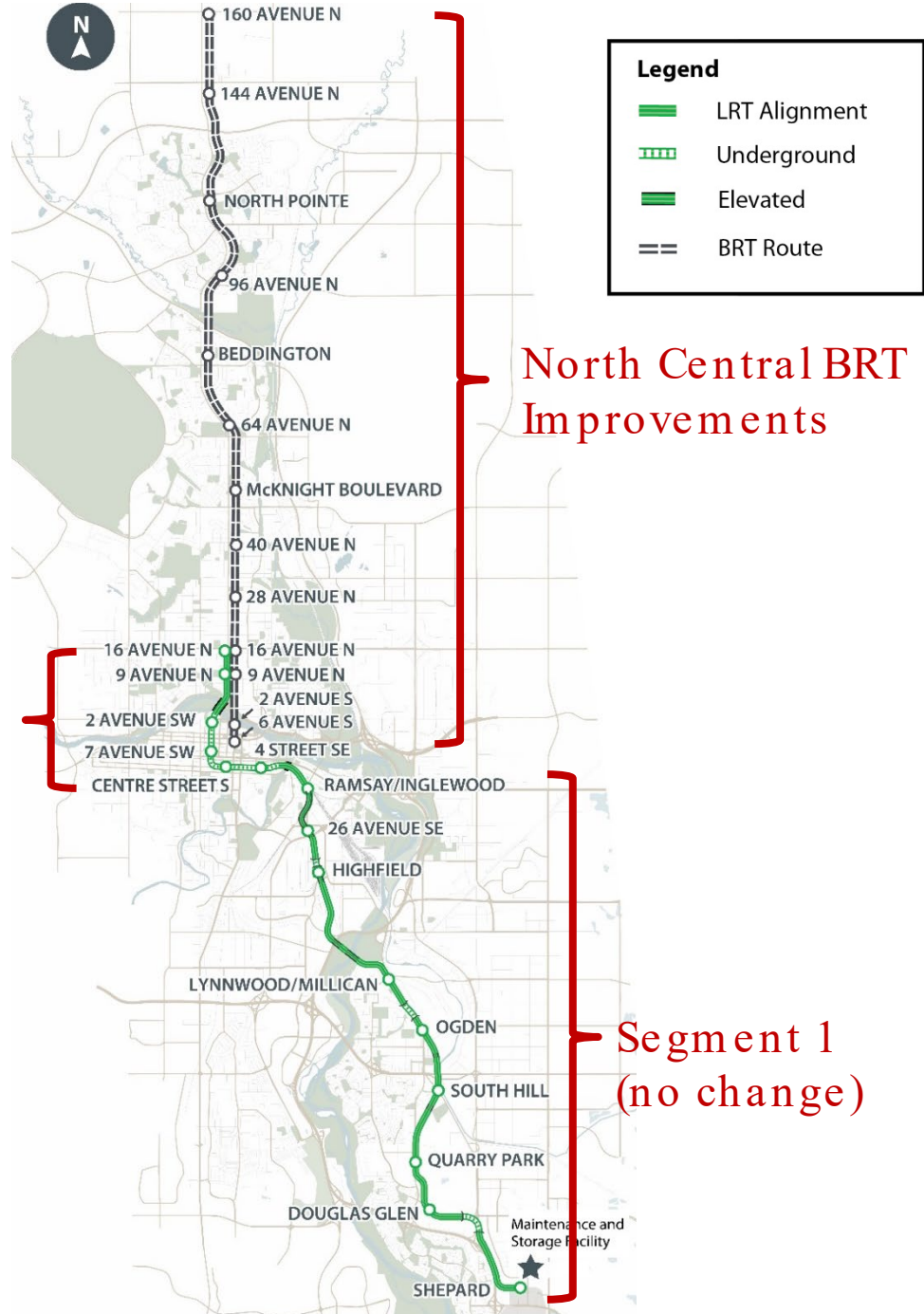
Should the North and South Connect?



How do you know that you can
afford this project? **How can you
be certain that it will not go over
budget?**

Updated Stage 1 Alignment & Stations

Segment 2
(revised
alignment &
new station)



Report confirms: updated Green Line Stage 1 alignment

- ☑ **Right project** for Calgary
- ☑ **Right alignment** for today and the future
- ☑ Delivered with the **right approach**

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Right Project

Green Line Vision

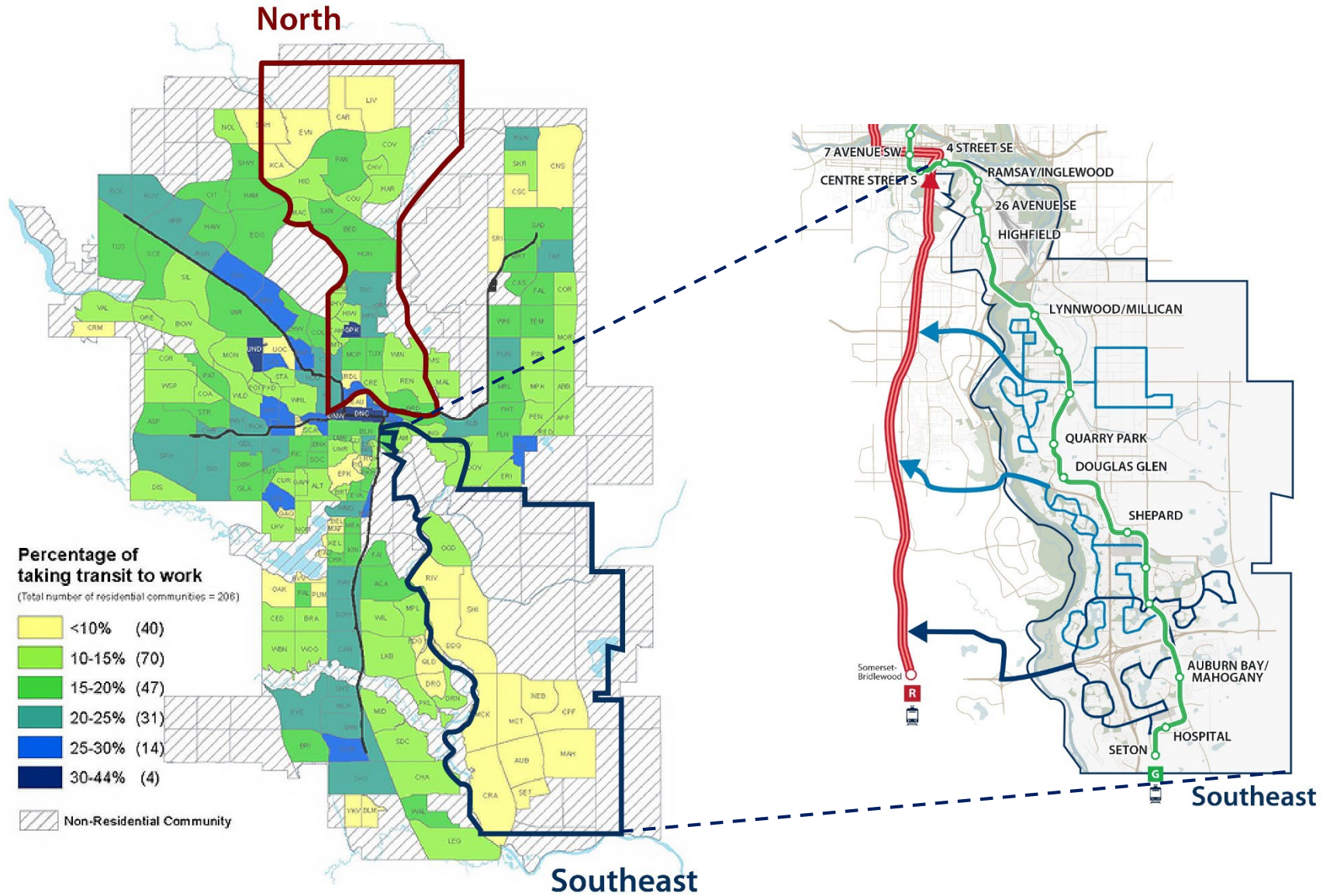
A city-shaping transit service that improves mobility in communities in north and southeast Calgary, connecting people and places, and enhancing the quality of life in the city.

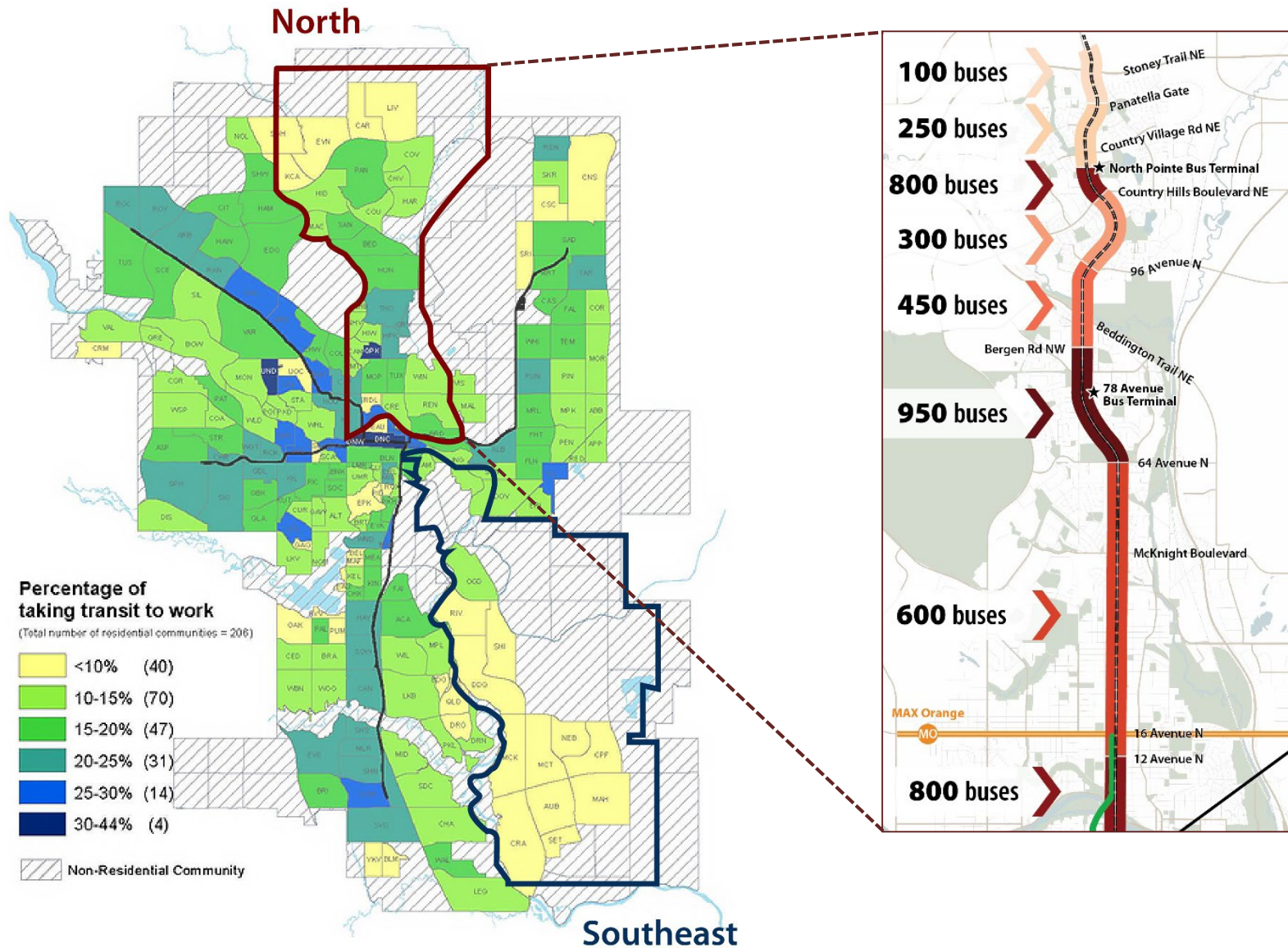
Updated by Council on 2020 January 13





Green Line Stage 1 will **serve**
the mobility needs of our city



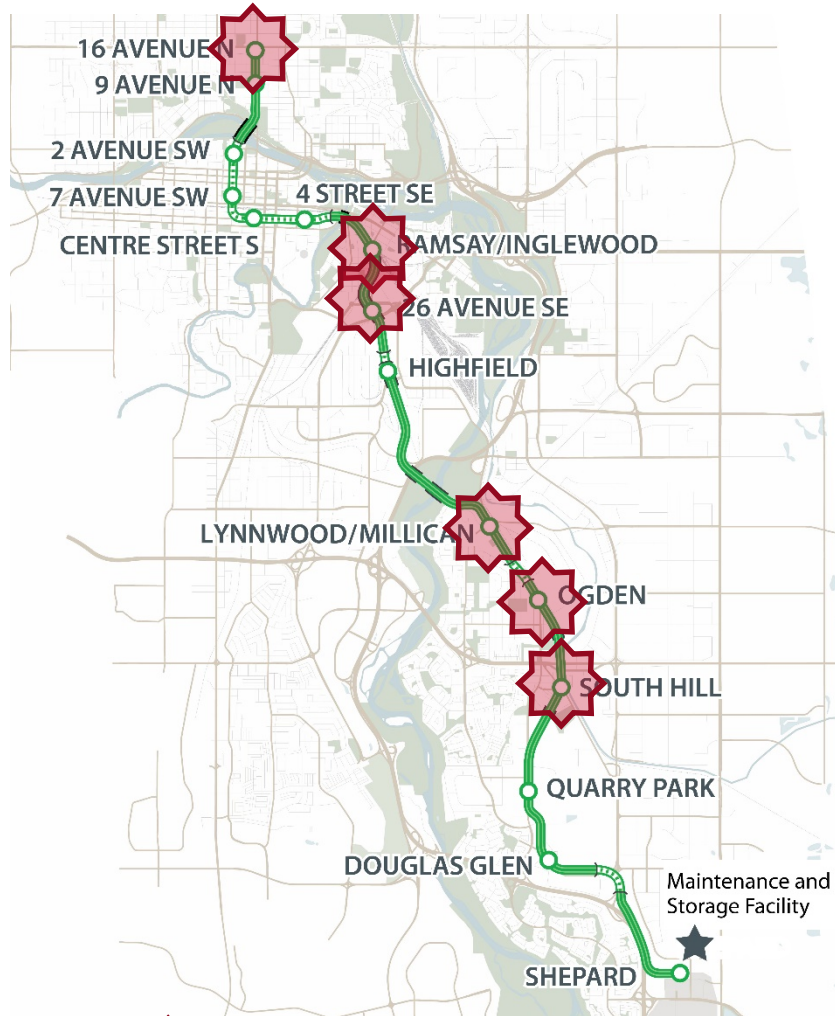


Connecting the City Green Line is the next step for building Calgary's rapid transit network



Stage 1 will generate
over **\$2.2 billion in
benefits to Calgary**

Stage 1 will be a catalyst for development

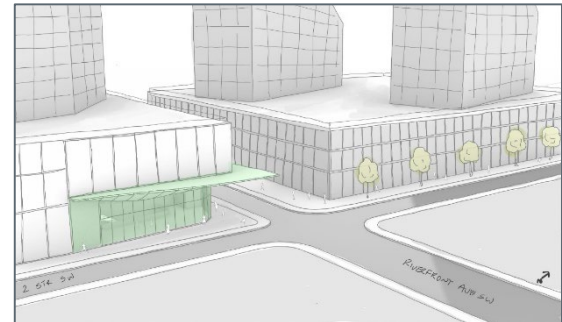


TOD Priority Sites

Example developments currently being considered



Centre Street N & 16 Avenue N



Eau Claire Redevelopment /
2 Avenue Integrated Station

Stage 1 is a **long -term investment** in Calgary's growth and development



1981

592,000 residents

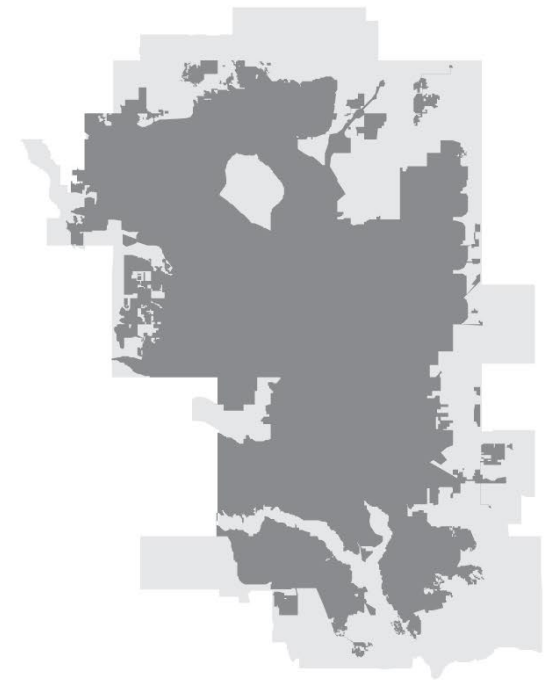
273 km² of developed land



2001

875,000 residents

400 km² of developed land



2015

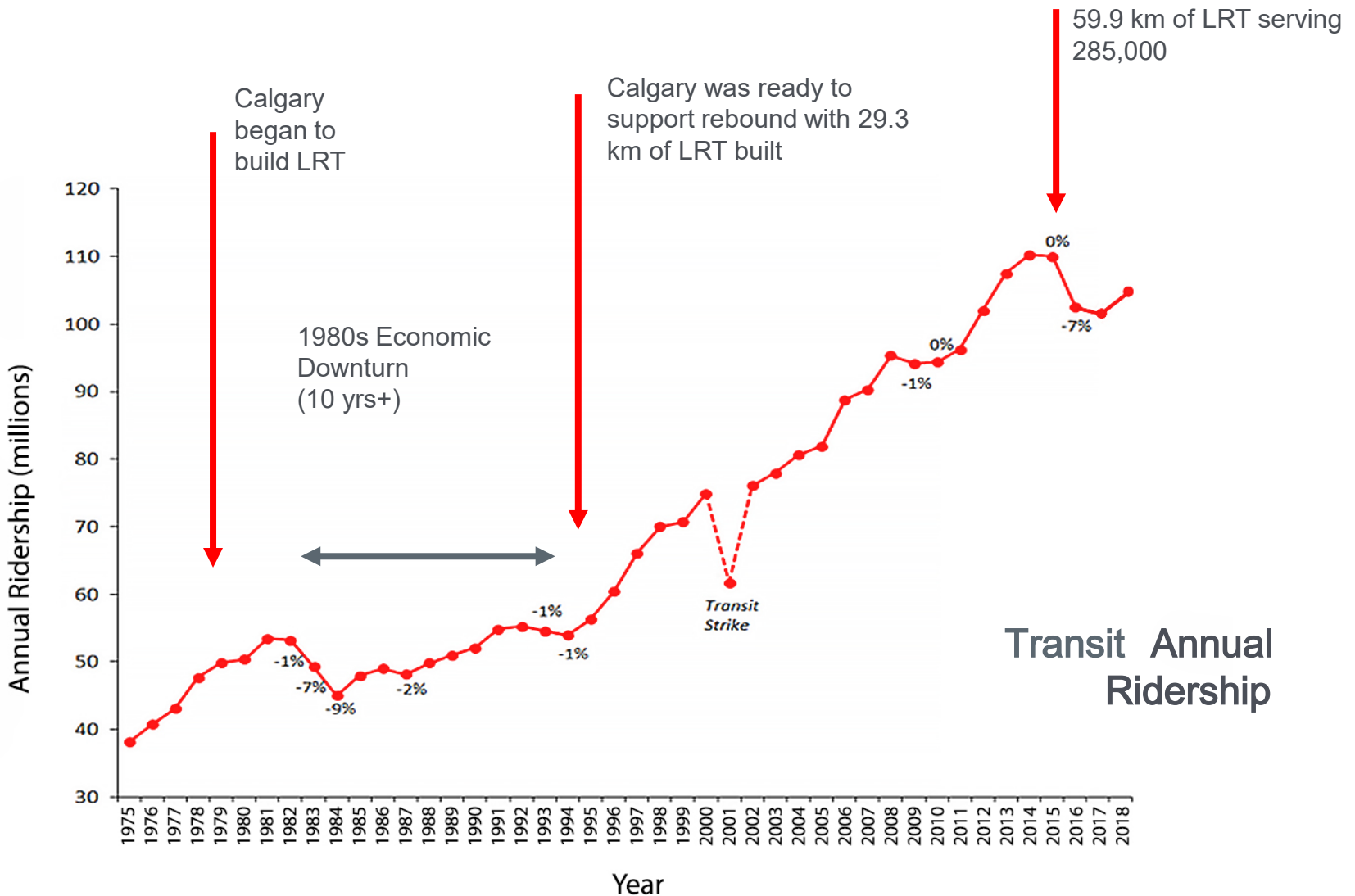
1.23 million residents

496 km² of developed land

Calgary's population and land area growth 1981 -2015

Moving forward with Green
Line today **readies Calgary for
tomorrow's recovery**

Investing for the future



**Green Line will be an important
part of Calgary's economic
recovery**

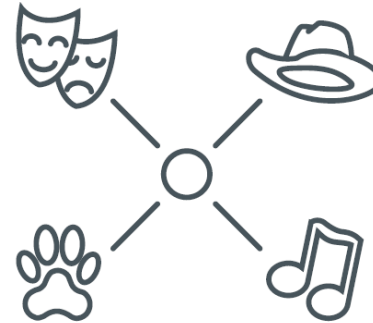


Stage 1 will benefit

all Calgarians



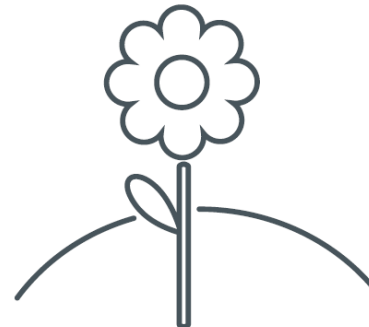
Improves mobility



Connects people to places



Connects people to jobs



Reduces environmental impact

Calgary



Right Alignment

The City is **committed to delivering Stage 1** of the Green Line within our approved capital budget of \$4.9 billion

Alignment Options Evaluated



LRT South / BRT
North

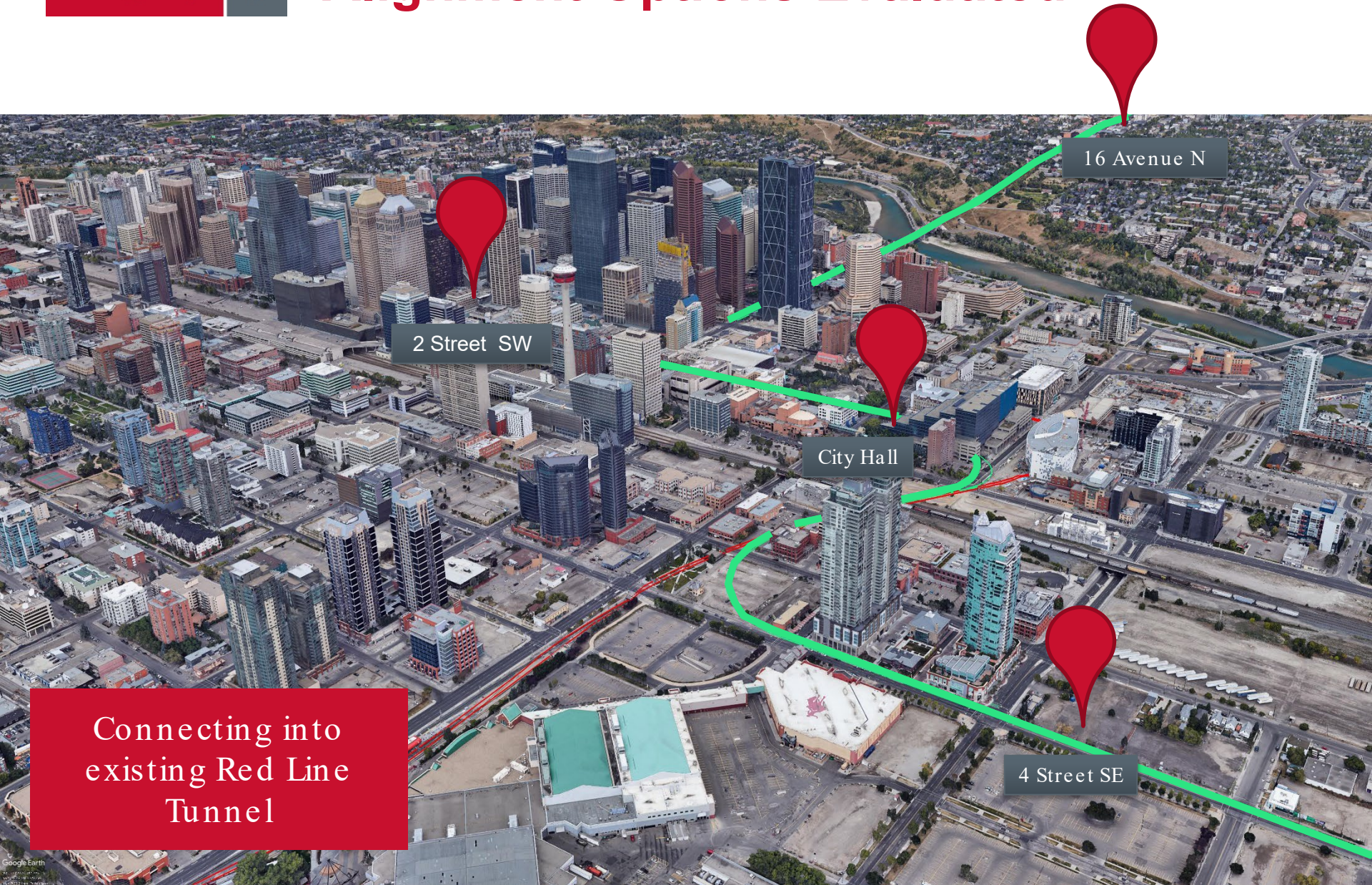
BRT North / LRT
South

7 Avenue SW

Centre
Street S

Event
Centre

Alignment Options Evaluated



2 Street SW

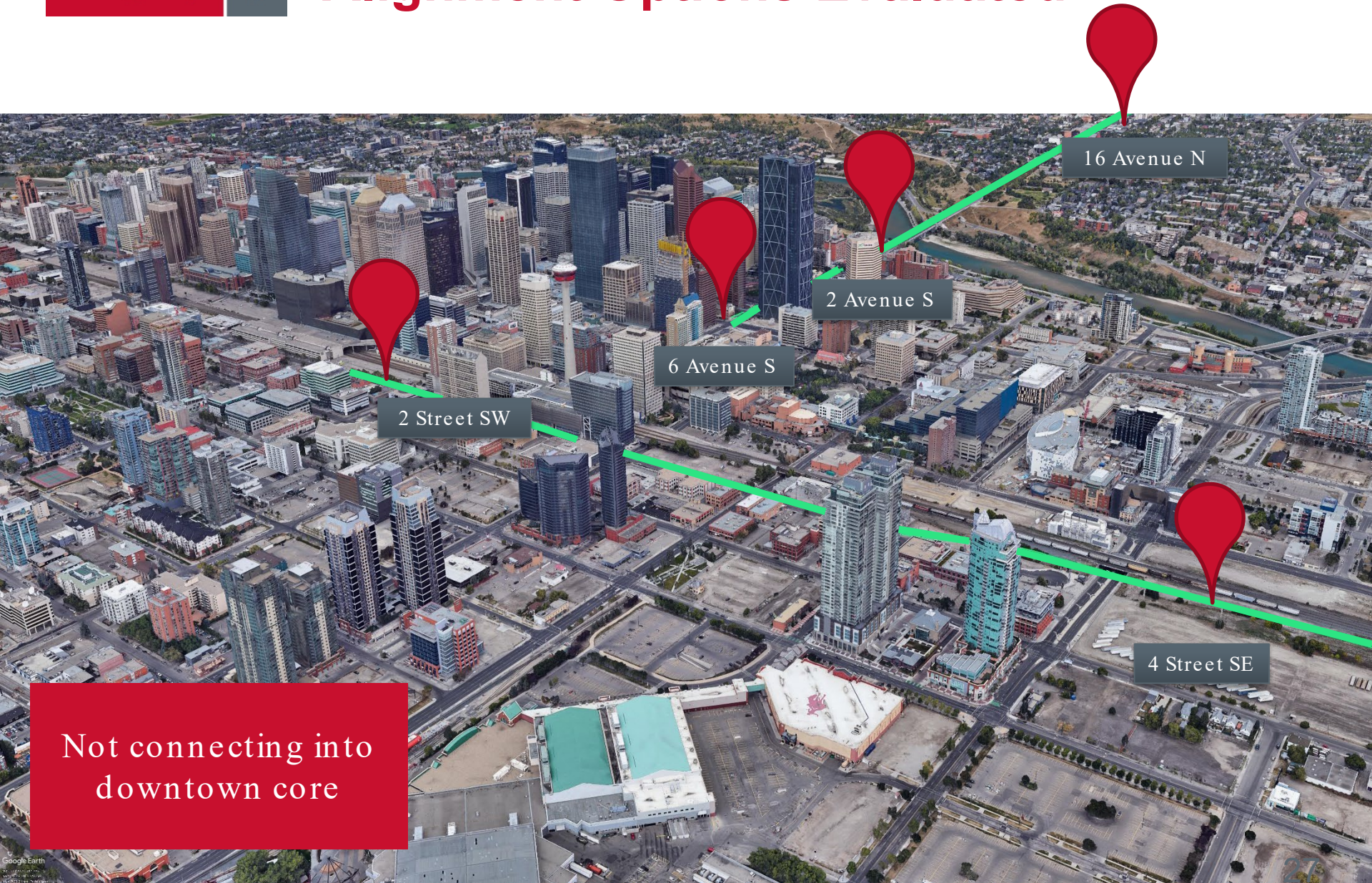
16 Avenue N

City Hall

4 Street SE

Connecting into
existing Red Line
Tunnel

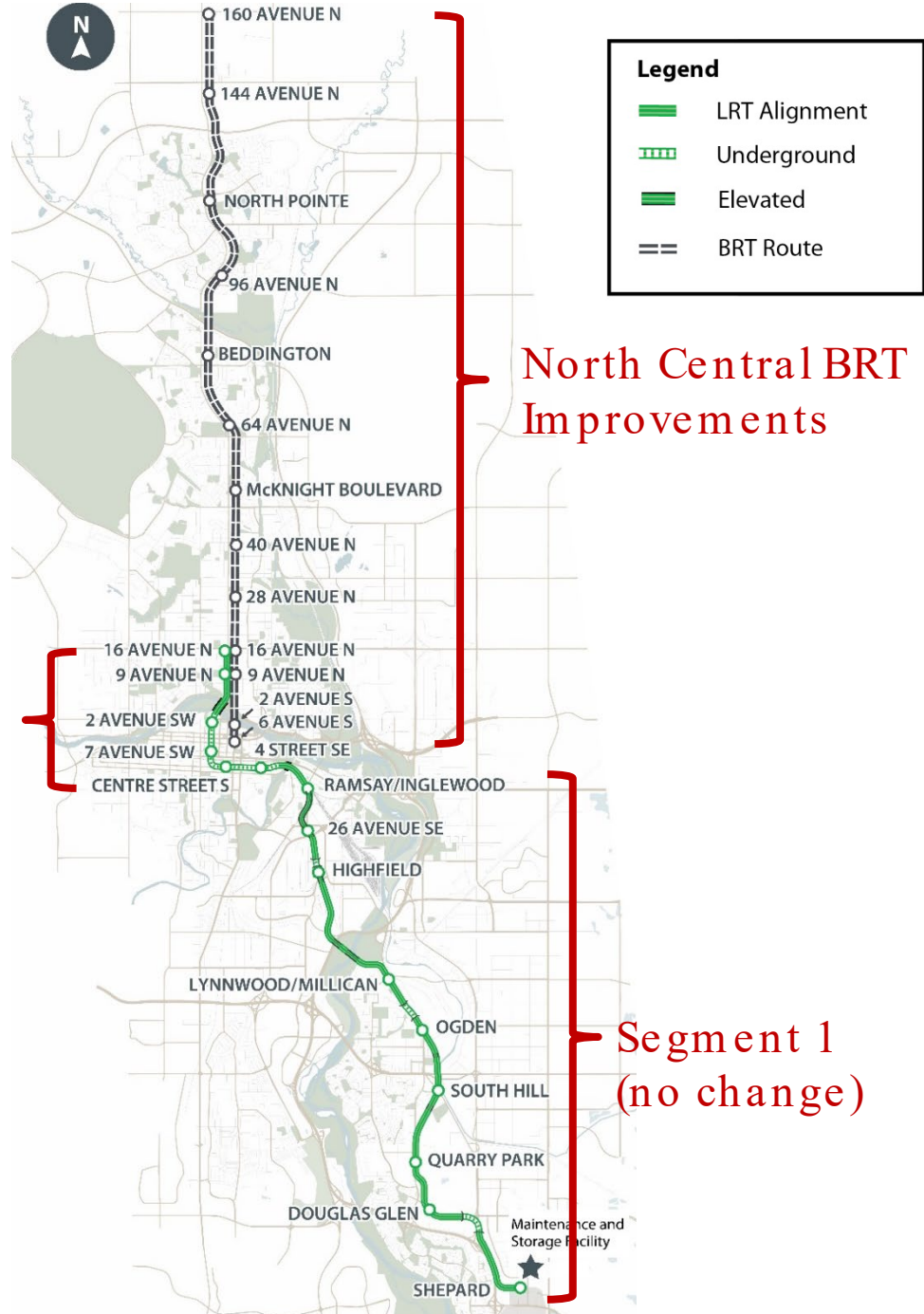
Alignment Options Evaluated



Not connecting into
downtown core

Updated Stage 1 Alignment & Stations

Segment 2
(revised
alignment &
new station)



Stage 1 will deliver the best value for Calgarians

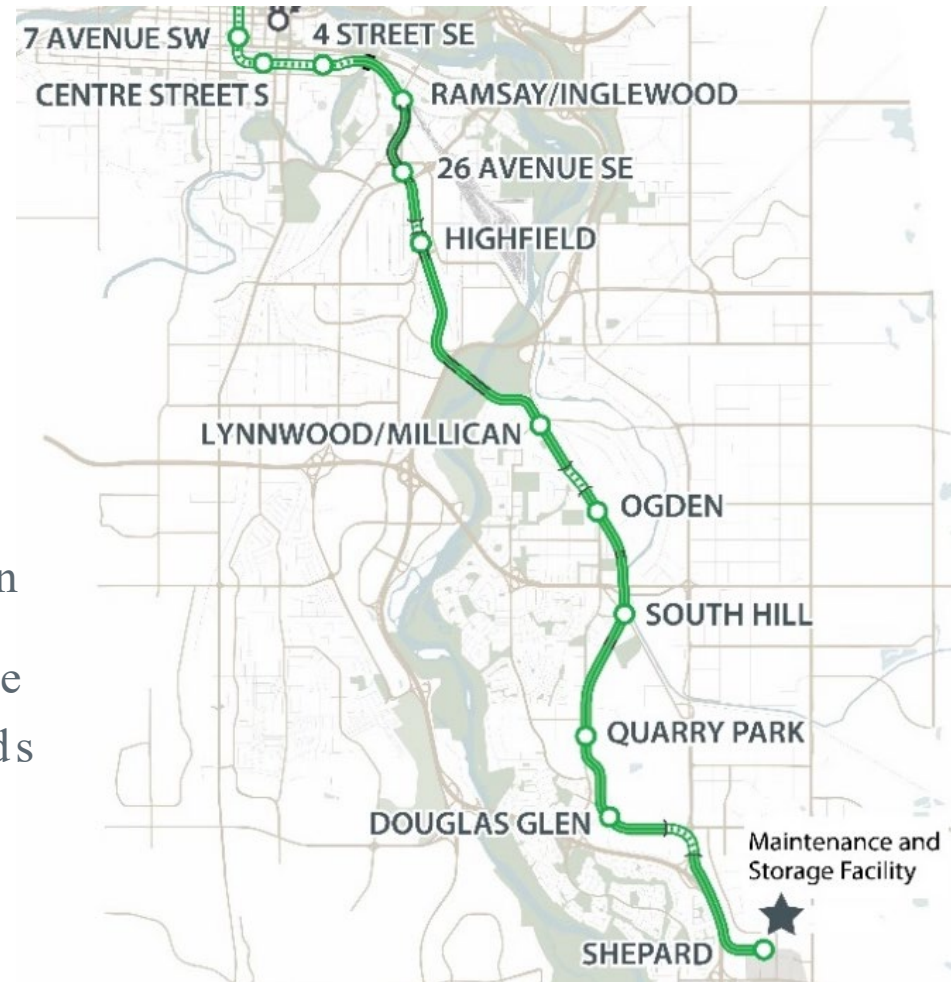
- Moves 55,000 – 65,000 LRT riders
- Strategic rapid transit network connections
- Greatest opportunity for incremental LRT expansions to both north central and southeast communities
- Improved ride time, reliability and customer service for north central BRT

Segment 1

Elbow River to Shepard
(126 AV SE)

Value Engineering & Managing Risk

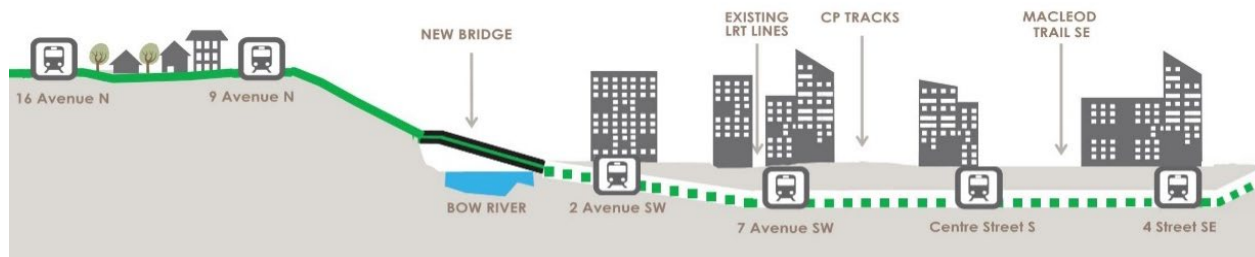
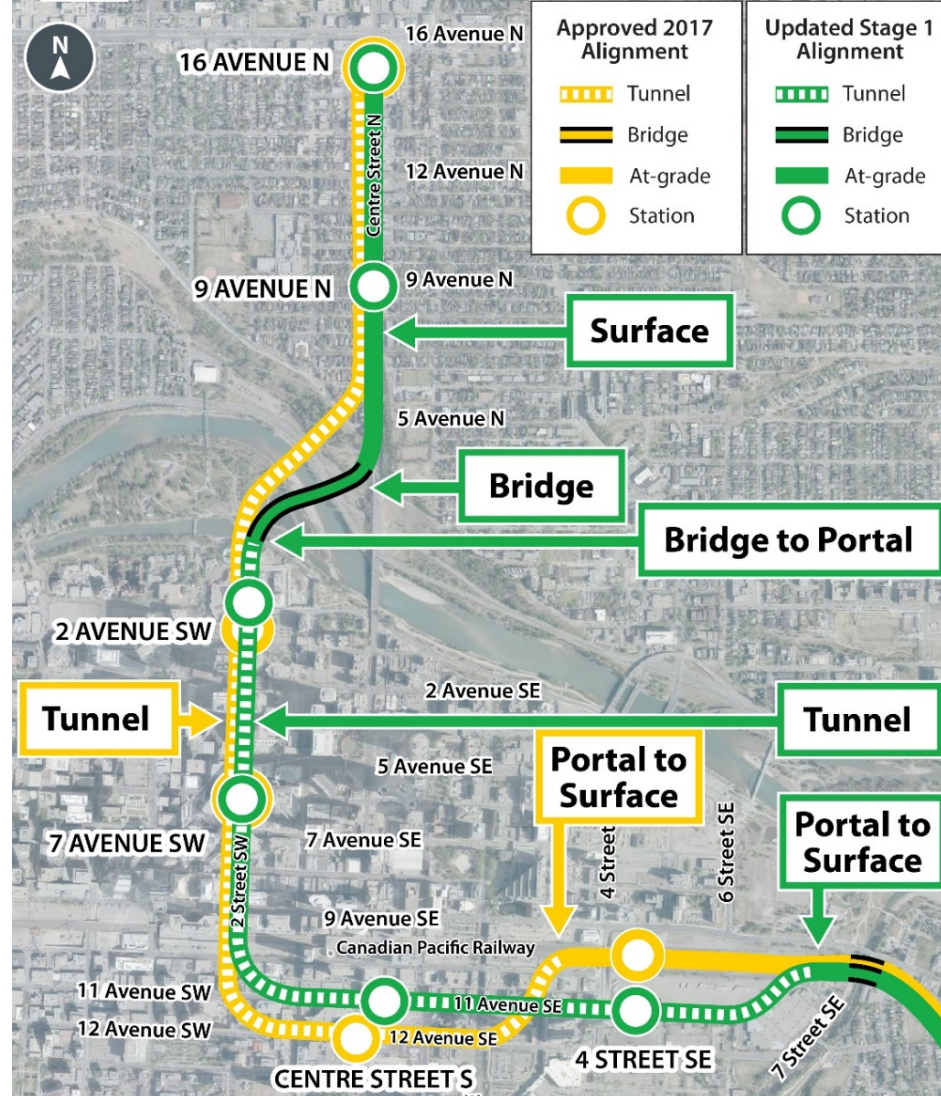
- Replaced parkade with surface parking lot at the Shepard LRT station
- Raised track through Lynnwood Ridge and former Imperial Oil Refinery lands
- Optimized size and scale of the LRT maintenance and storage facility



Segment 2

16 Avenue N to
Elbow River

2017 Council
Approved and
Updated Stage 1
Alignments



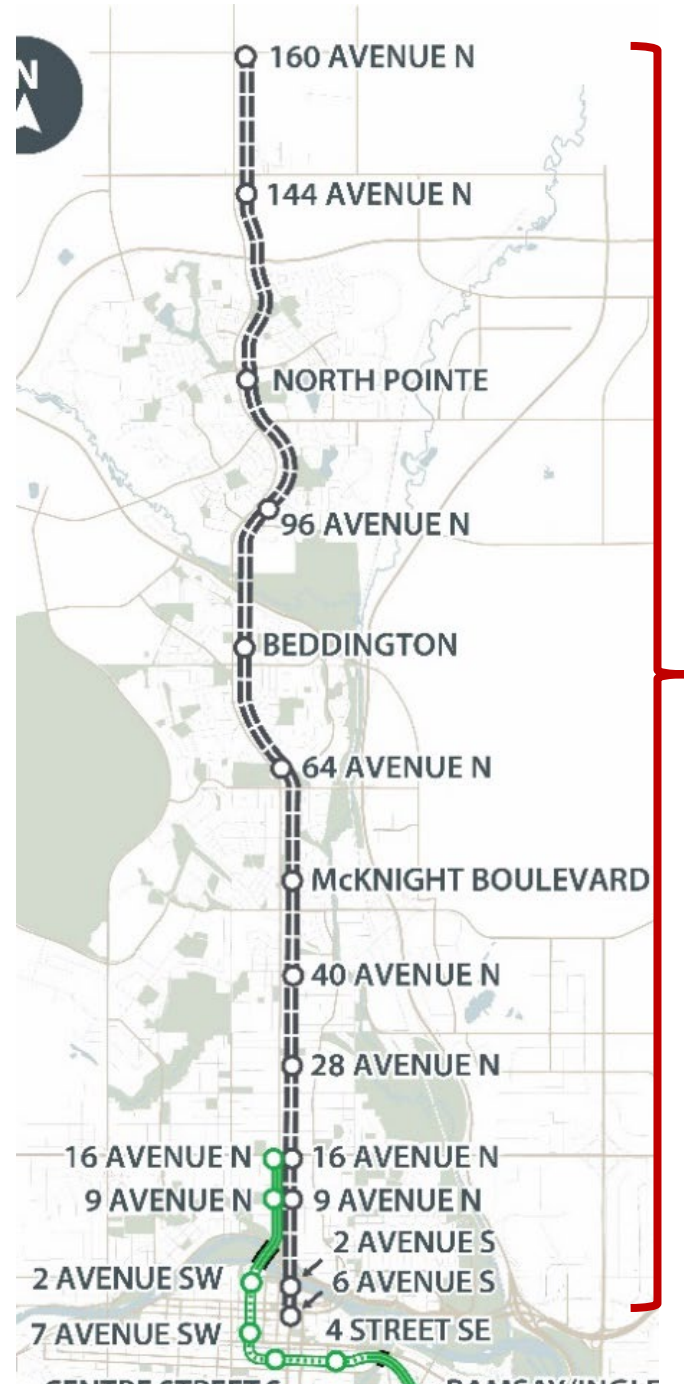
North Central BRT Improvements

Customer Service

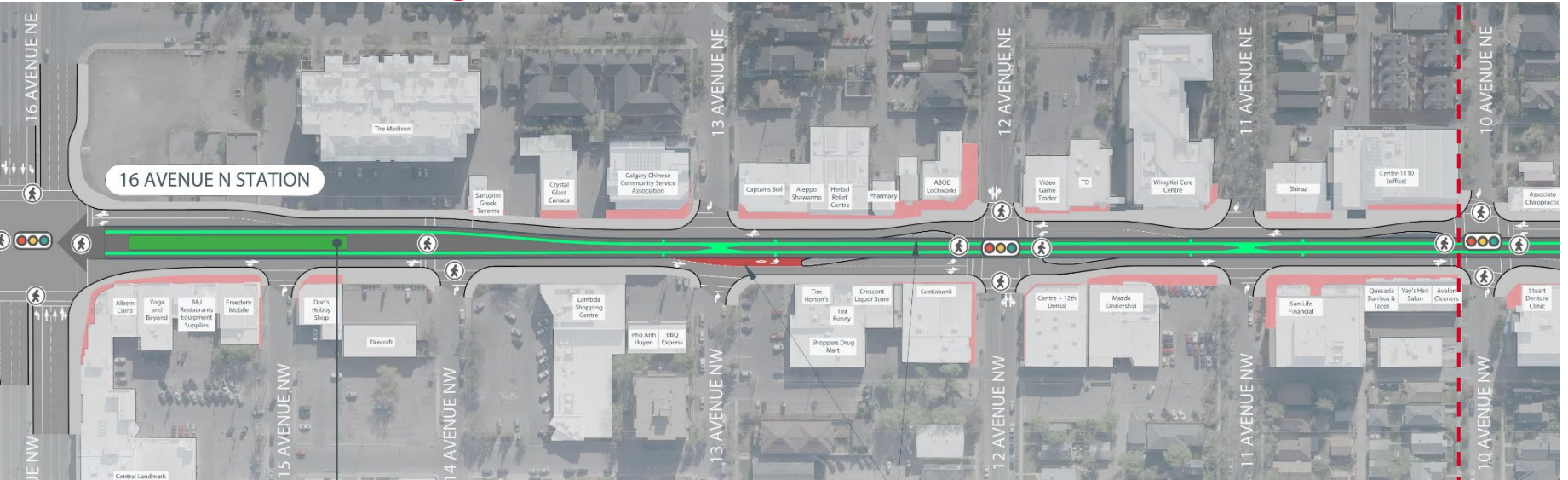
- Increase the clarity and comfort of the system

Transit Priority

- Measures that improve ride time and reliability



Centre Street N Alignment



Centre Street N

16 Avenue N Station & Wide Public Realm



Centre Street N

Narrow Public Realm



Centre Street N

9 Avenue N Station

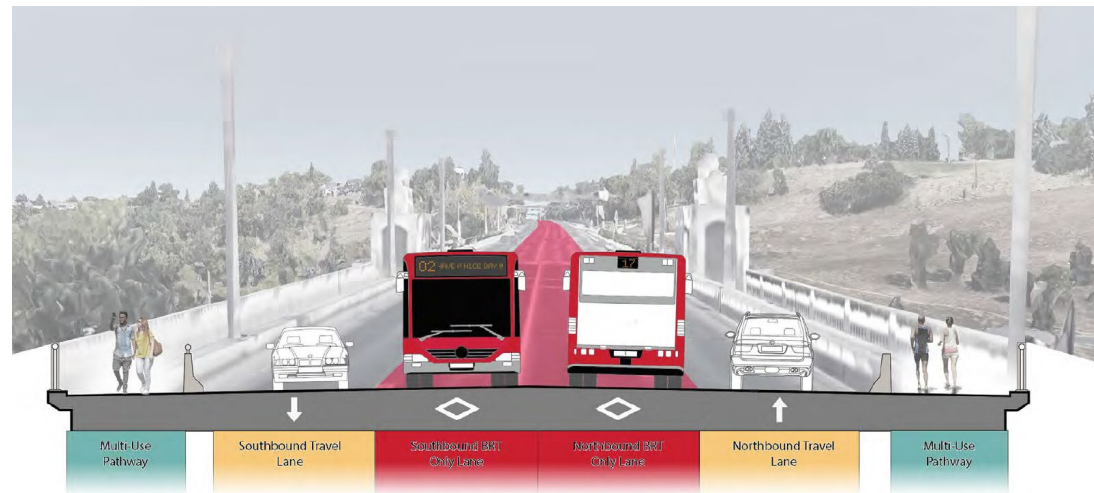


Centre Street N

BRT Priority & Centre Street Bridge



BRT to operate within
LRT guideway &
dedicated lanes on
Centre Street Bridge



Bow River Crossing

Bridge types being explored



Constant Depth Viaduct



Trestle Bridge



Tied Arch Bridge



Cable Stayed Bridge

Bow River Crossing

Alignment Variations

Example alignment variations that will be explored in next stages of planning

CONCEPTUAL FOR DISCUSSION PURPOSES ONLY

Bow River Crossing

Multi-use pathway



LRT Bridge to
include Multi -Use
Pathway

Bow River Crossing Views - Crescent Heights



Bow River Crossing Views – Waterfront Condo



Bow River Crossing

Views - Prince's Island Park



Bow River Crossing

Views - Prince's Island Park





Downtown Alignment



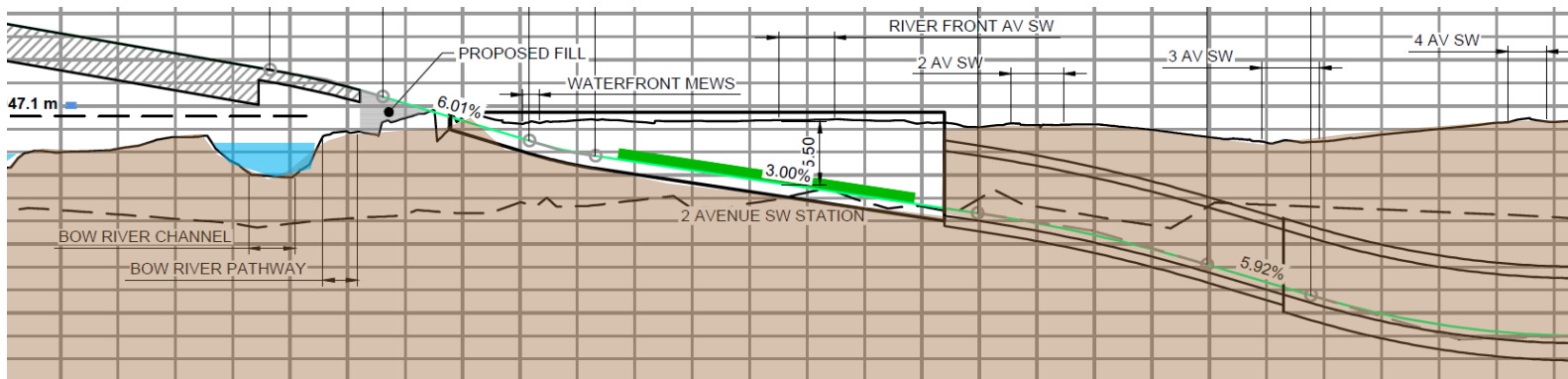
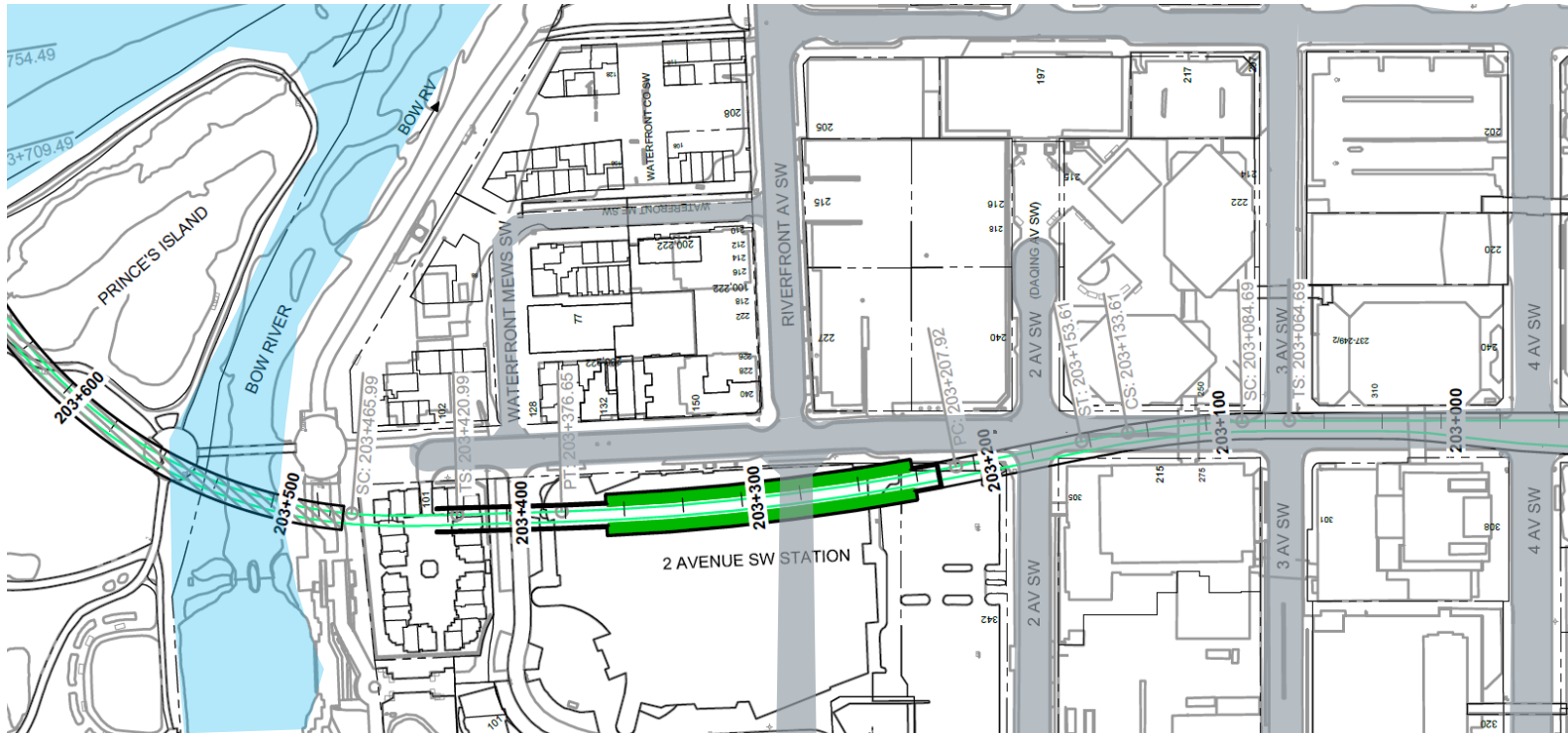
2 Avenue Integrated Station Concept

Inspiration New Central Library



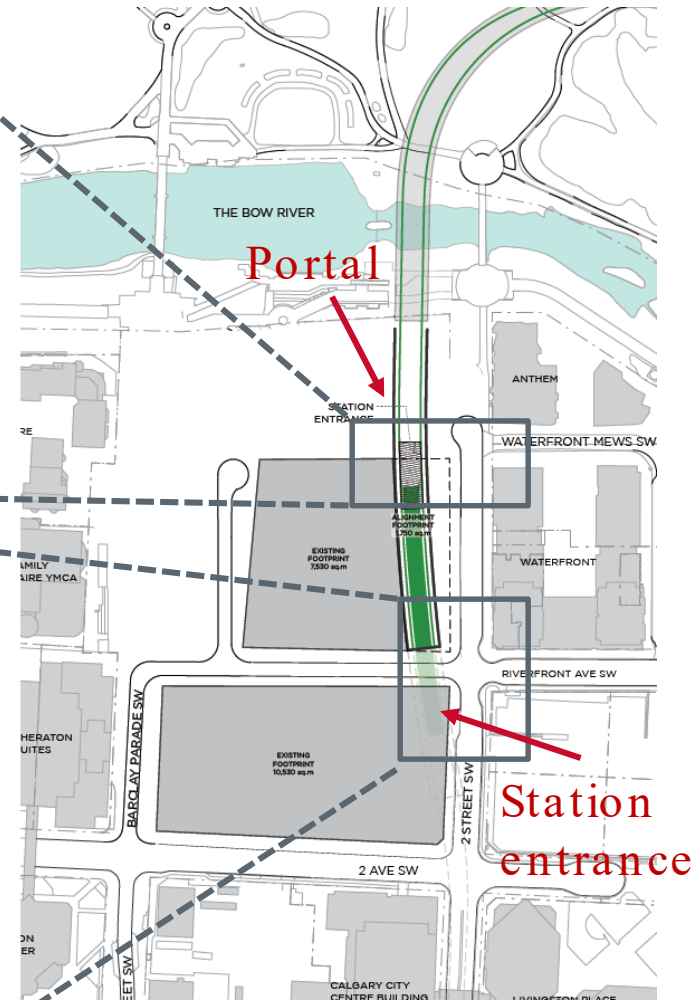
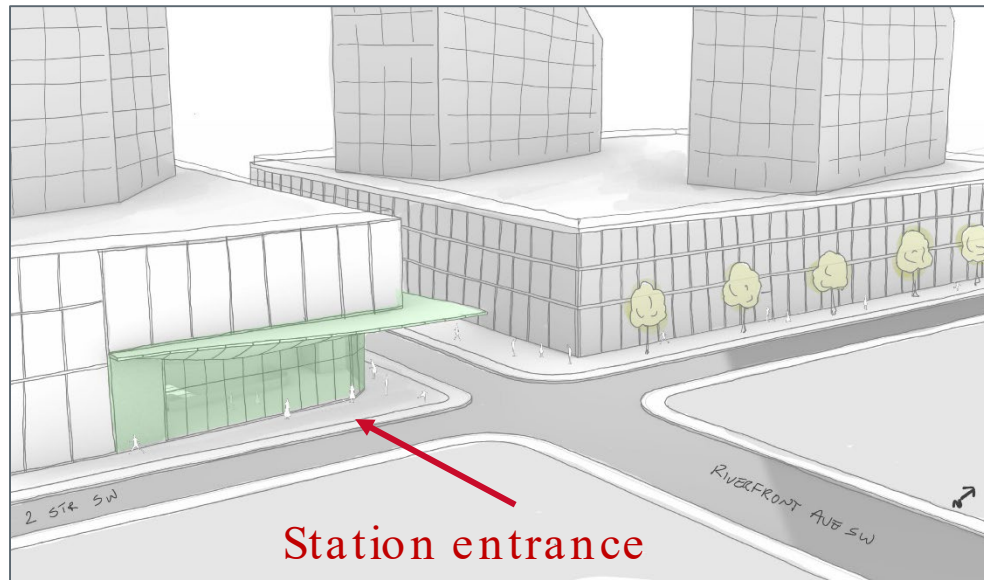
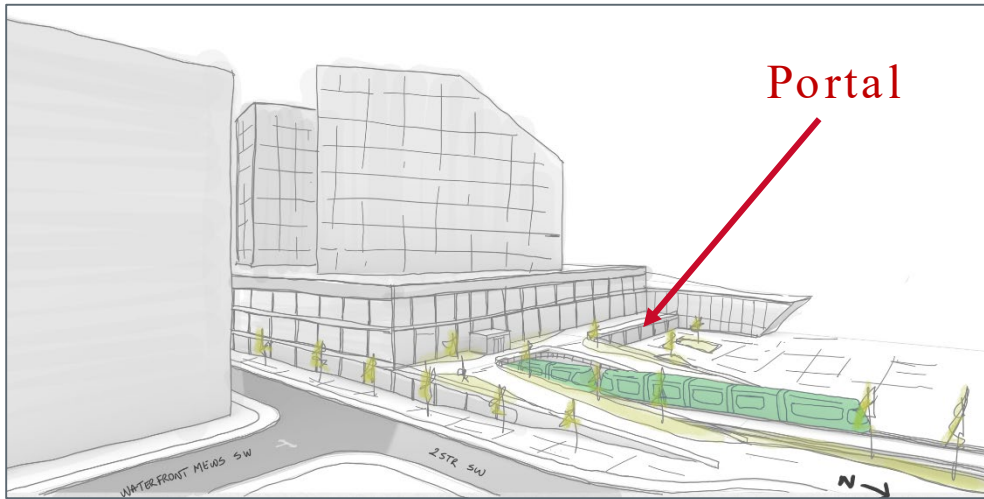
2 Avenue Integrated Station Concept

Alignment variation being explored



2 Avenue Integrated Station Concept

Architectural Sketch – Station Entrance & Portal



7 Avenue SW Station

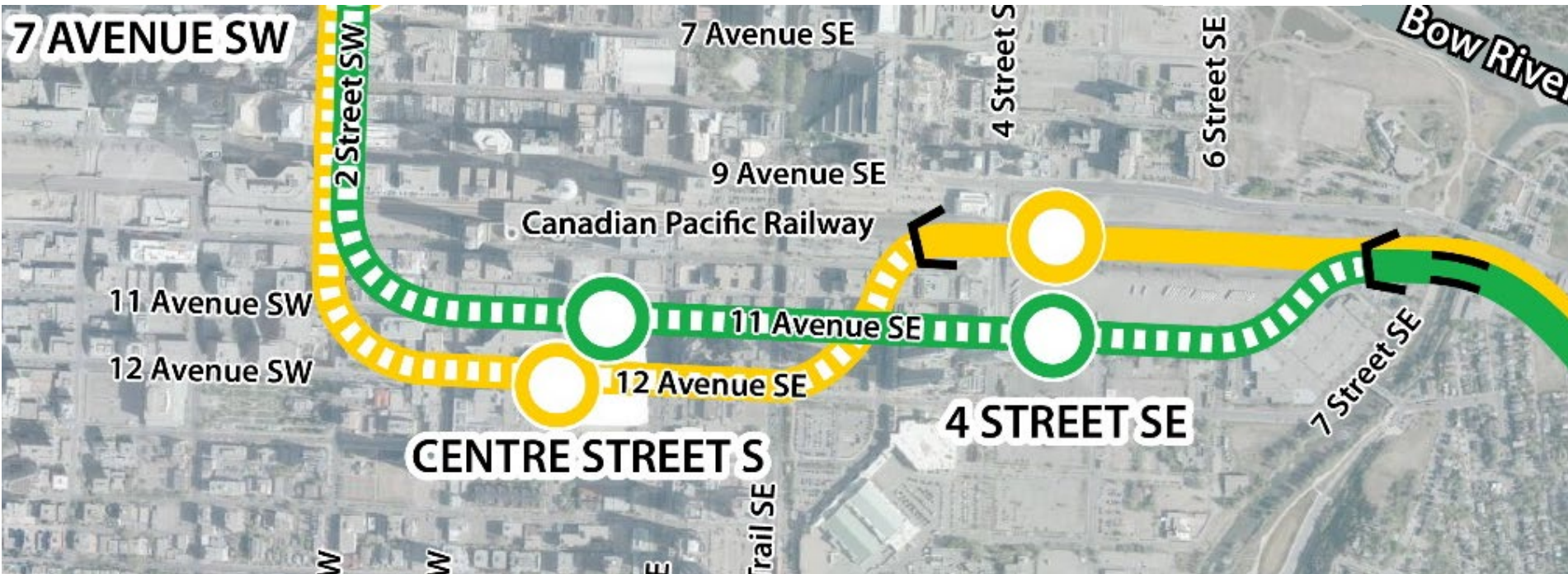
Integrated Station Concept



Beltline

Alignment Comparison

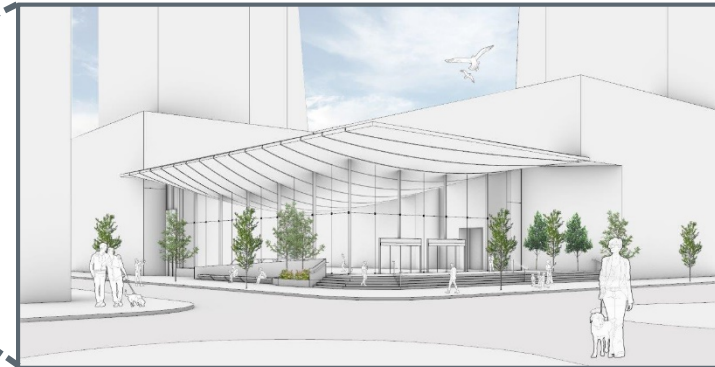
Updated Stage 1 Alignment	Approved 2017 Alignment
Tunnel	Tunnel
Bridge	Bridge
At-grade	At-grade
Station	Station
Portal	Portal



Beltline Alignment

Integrated Station Concept

Radius of curve to
be finalized in next
stages of planning



Beltline

Rivers District Portal



North Central BRT Improvements

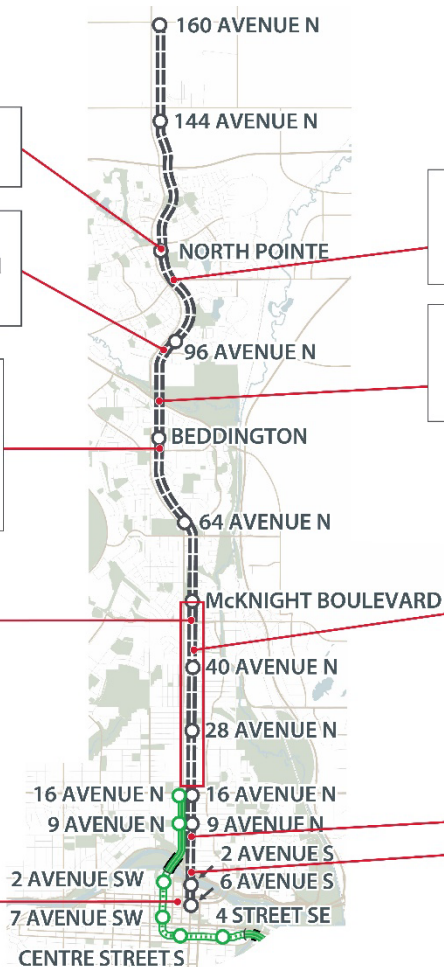
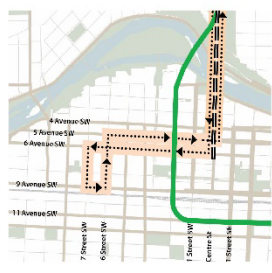
Shorten the bus loop at the North Pointe Park and Ride lot.

Add queue jump at the intersection of Harvest Hills Blvd and 96 Avenue N.

Conduct detailed review of bus operations in this area, including the 78 Avenue Bus Terminal. Consider dedicated bus lanes.

Review the operation of existing queue jumps to identify further operational improvements.

Conduct detailed review of downtown bus operations identify improvements. Consider dedicated peak hour bus lanes adjacent to the curbside bus stops.



Add queue jump at the intersection of Harvest Hills Blvd and Country Hills Blvd.

Add a traffic signal at the bus trap for northbound buses to prioritize bus operations.



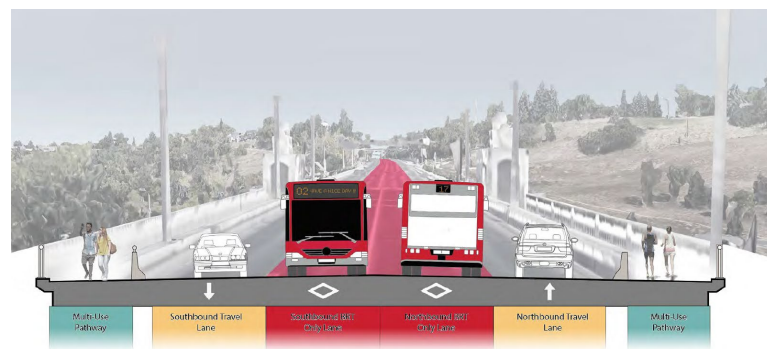
Add bus only curb lanes during peaks or all day.

BRT and Express buses to share the LRT right of way south of 13 Avenue N.

Create dedicated bus lanes in the middle of Centre Street bridge.

Recommended general BRT improvements

- Provide improved customer amenities, including MAX BRT shelters
- Provide transit signal priority (TSP) at all signals along the route (currently just over 60% have TSP).
- Evaluate opportunities for on-board fare payment and all-door boarding.



Centre Street Bridge - BRT Lanes

- Public engaged January 29 to April 30 2020
- Online
 - 17,000 views of the engage portal
 - 7,500 visitors
 - 2,850 contributions
- In-person
 - 4 open houses attended by 780
 - 6 pop-up events attended by 400
 - 5 drop-in events attended by 115
 - Over 2,300 pieces of feedback received
- Key Stakeholder meetings
 - Special interest groups, business improvement areas, community associations, downtown property owners



Stakeholder Engagement

Common Themes



Bridge
Design



Environment



Noise &
Vibration



Community
Traffic



Mobility
Network



Parking

Calgary



Right Approach

Readiness Plan



Structure



Focus



Accountability



Confidence



Discipline



Structure

How the program will mature over time



Confidence

Confirm expertise to deliver



Focus

Sequence and division of work



Discipline

Proactively support the program



Accountability

Transparency and ownership across the team



Work Streams

**Governance
and Program
Set-Up**

Planning

Commercial

**Technical and
Delivery**



2020 Goals

Governance and staffing



Planning



Delivery





Due Diligence

Hanscomb



steer

Risk



Risk Management Plan

A clear plan for identifying, assessing, and managing risks as well as communicating status and potential implications.



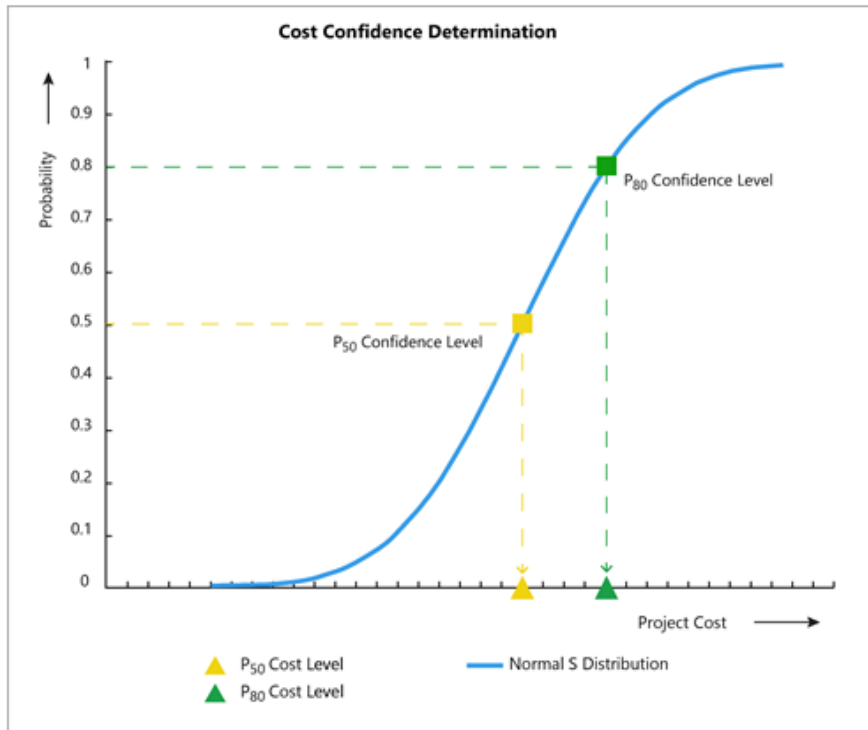
Risk Register

A comprehensive register of risks and thorough analysis of their impacts, and a repository for response strategies.



Ongoing risk management

Identifying and responding to risk through a proactive and empowered risk -aware culture.



3rd Party Cost Review

- Green Line Estimate was within industry Standards compared to other LRT lines across Canada
- Green Line Estimate was 2% more conservative than 3rd Party review
- P value now at a P81 – meaning there is an 81% likelihood our project will be completed within budget – industry best practice is P80-P90

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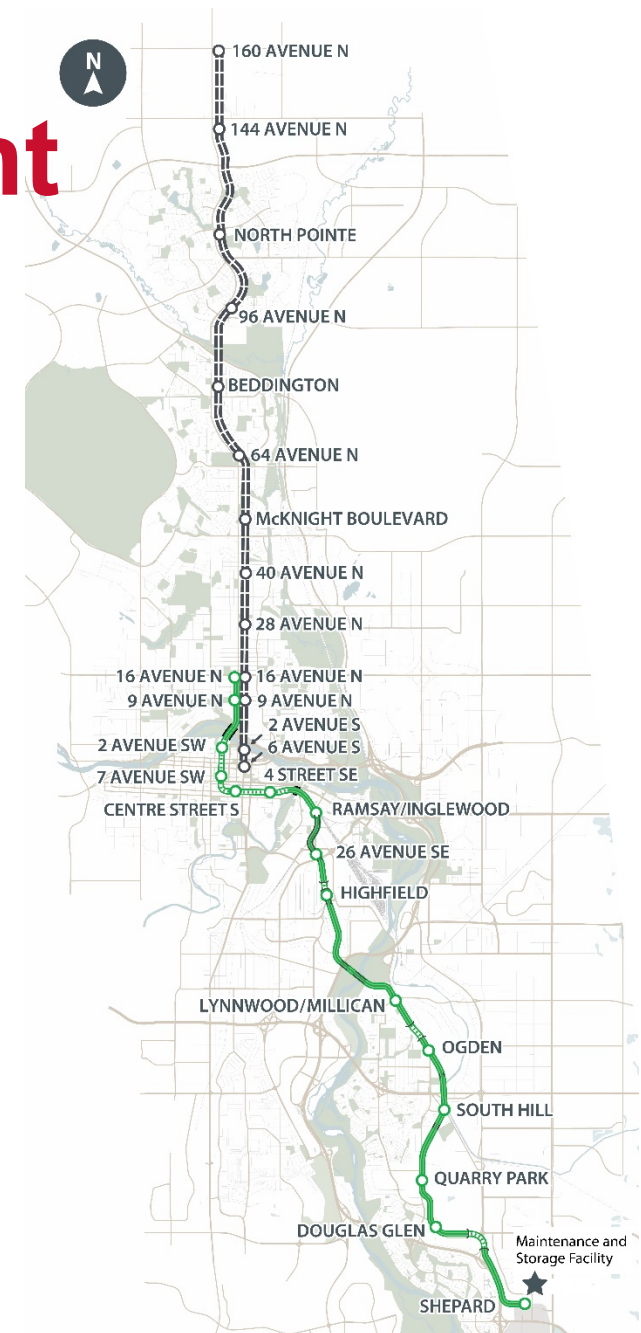


Conclusion

Right Alignment

The updated Stage 1 alignment provides the best value for Calgarians

- Within \$4.9 billion budget
- Reduced construction risk
- Improved customer experience



Right Project

The Green Line LRT project is a long-term investment in the growth and development of our city

- Maximizes the investment in Calgary today
- Builds the core of Calgary's next LRT, allowing strategic expansion in the future to communities in the North & South
- Creates 20,000 direct and indirect construction jobs



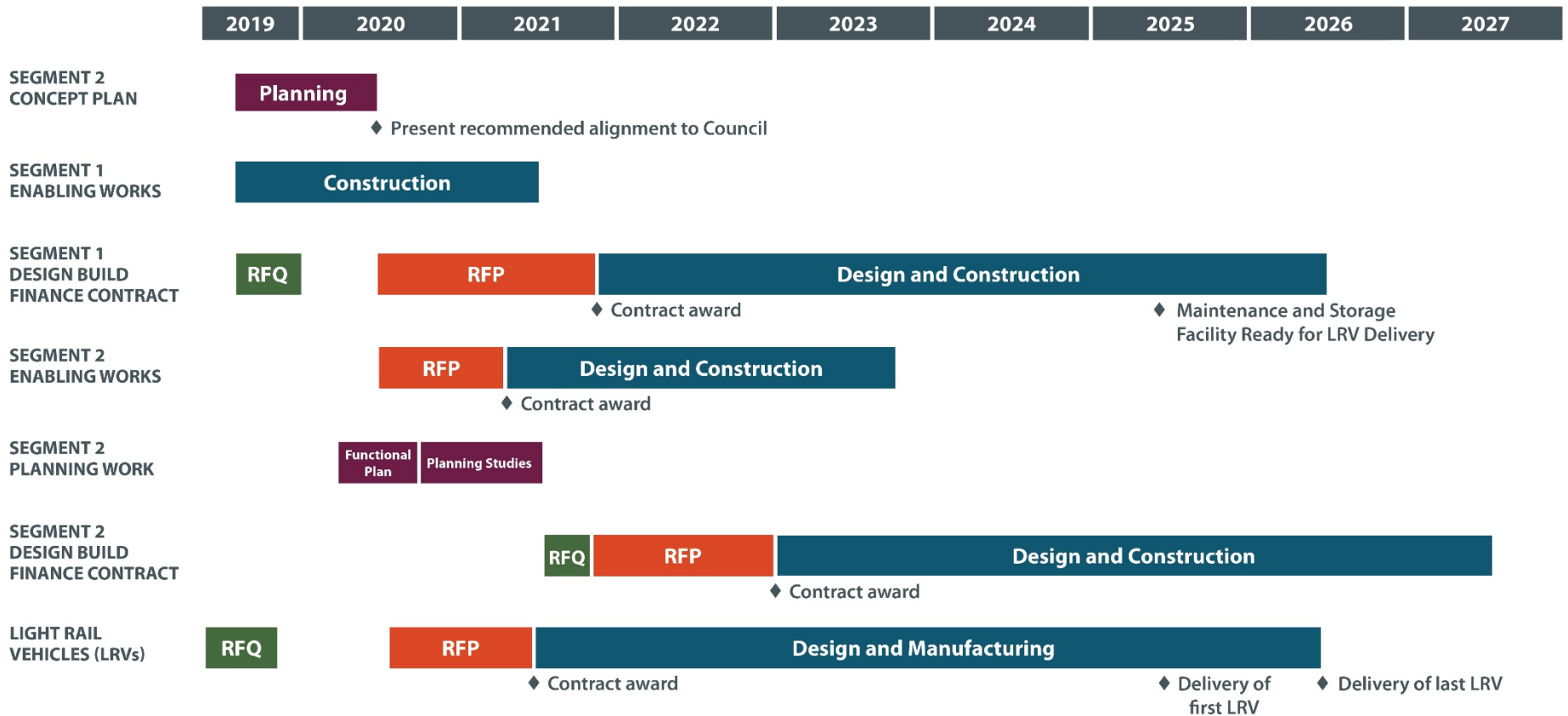
Right Approach

We're confident that we have the right plans in place to move forward

- Technical Risk Committee
- Readiness Plan
- Due Diligence reviews
- Program Governance Board



Next Steps



Administration Recommendations

The Green Line Committee recommends that Council:

1. Approve Segment 1 of the updated Stage 1 alignment and station locations, as outlined in Attachment 3;
2. Direct Administration to Release the RFP for Segment 1 no later than 2020 July 24, and to start construction of Segment 1 upon execution of the Project Agreement for Segment 1;
3. Direct Administration to advance enabling works construction in Segments 1 and 2;
4. Approve Segment 2 alignment and station locations as outlined in Attachment 3. Direct Administration to undertake the Segment 2 Functional Plan. For the Centre Street N surface-running and Bow River bridge components (16 Avenue N to Eau Claire), direct Administration to continue stakeholder engagement and communications as required when completing the following studies:
 - Mobility Studies Plan;
 - Access Management Plan;
 - Streetscape Plan; and
 - Bow River Bridge Plan.

Direct Administration to report back to the Green Line Committee no later than 2021 July 31 with the results of the above plans and studies. Direct Administration to prepare and release the Segment 2 RFP and start Segment 2 construction provided the Green Line Program cost estimate, including contingency, is estimated at no less than P80 and is within the approved Program funding;

Administration Recommendations

Cont'd

5. Approve the North Central BRT improvement concepts identified in Attachment 7.
Direct Administration to conduct the Functional Plan for the North Central BRT Improvements identified in Attachment 7 and report back to the Green Line Committee no later than 2021 July 31 with the delivery plan to construct the approved North Central BRT Improvements identified in Attachment 7;
6. Direct Administration to proceed with real property transactions based on the updated Stage 1 alignment, including the North Central BRT improvements, in accordance with the procedures as outlined in the previously approved Proposed Delegated Authority, Stage 1 Green Line LRT Project [C2018–0333].
7. Direct Administration to advise the Government of Canada and the Government of Alberta of Council's approval of the recommendations in this report, and seek approval to include the North Central BRT Improvements as eligible costs in the funding agreement; and
8. Notwithstanding the approvals above, should significant additional funding become available to extend the line northward prior to construction commencement of Segment 2 (not including enabling works), authorize Administration to redesign the Segment 2 alignment as needed to accommodate the expansion, returning to Council through the Green Line Committee with recommended alignment changes with respect to Segment 2.

Questions

