

## 7.2 - Review of Stage 1 Alignment Options

Green Line Committee  
17 December 2019  
GC2019-1592



That the Green Line Committee:

1. Receive this verbal report for information.
2. Direct that the January 24, 2020 Green Line Committee include a closed session workshop.
3. Direct administration to report back to the Green Line Committee on March 20, 2020 with a recommended Updated Stage 1 alignment.



## Outline

1. How we challenged our prior conclusions
2. Snapshot of what we have been reviewing
3. What we have heard to date from stakeholders
4. Next Steps





# Why the Green Line is important

## Improves Mobility Choices

- Next steps towards achieving *RouteAhead*

## Connects People & Places

- Strategic transit connections with broader Rapid Transit Network



## **We Challenged: Prior Conclusions**

**We challenged our prior conclusions to determine whether we are delivering the highest value system with a lower life cycle cost**

- The need to cross the CP tracks with the south leg
- Use of existing infrastructure to connect into the Core
- The need to cross the Bow River in Stage 1
- The need to connect the lines north and south



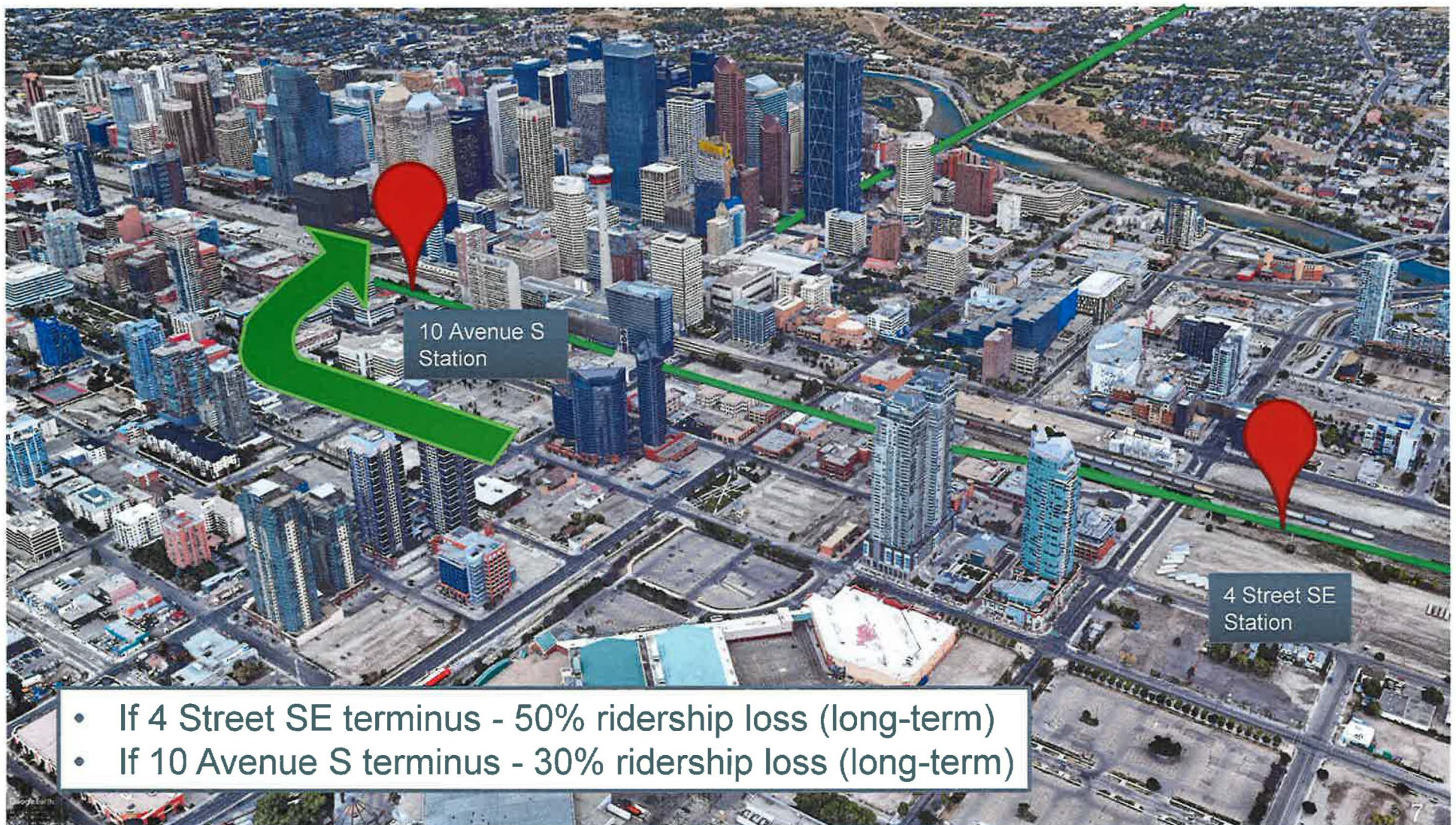
## **We Challenged: Prior Conclusions**

**We have confirmed that getting into the Core provides the best return on investment:**

- Highest ridership
- Connecting to existing LRT lines
- Connecting to highest employment density
- Connecting to the arts / culture / entertainment areas



## We Challenged: Going into the Core





## We Challenged: Use of Existing Infrastructure



If Green Line Uses Red Line Tunnel to cross into the core

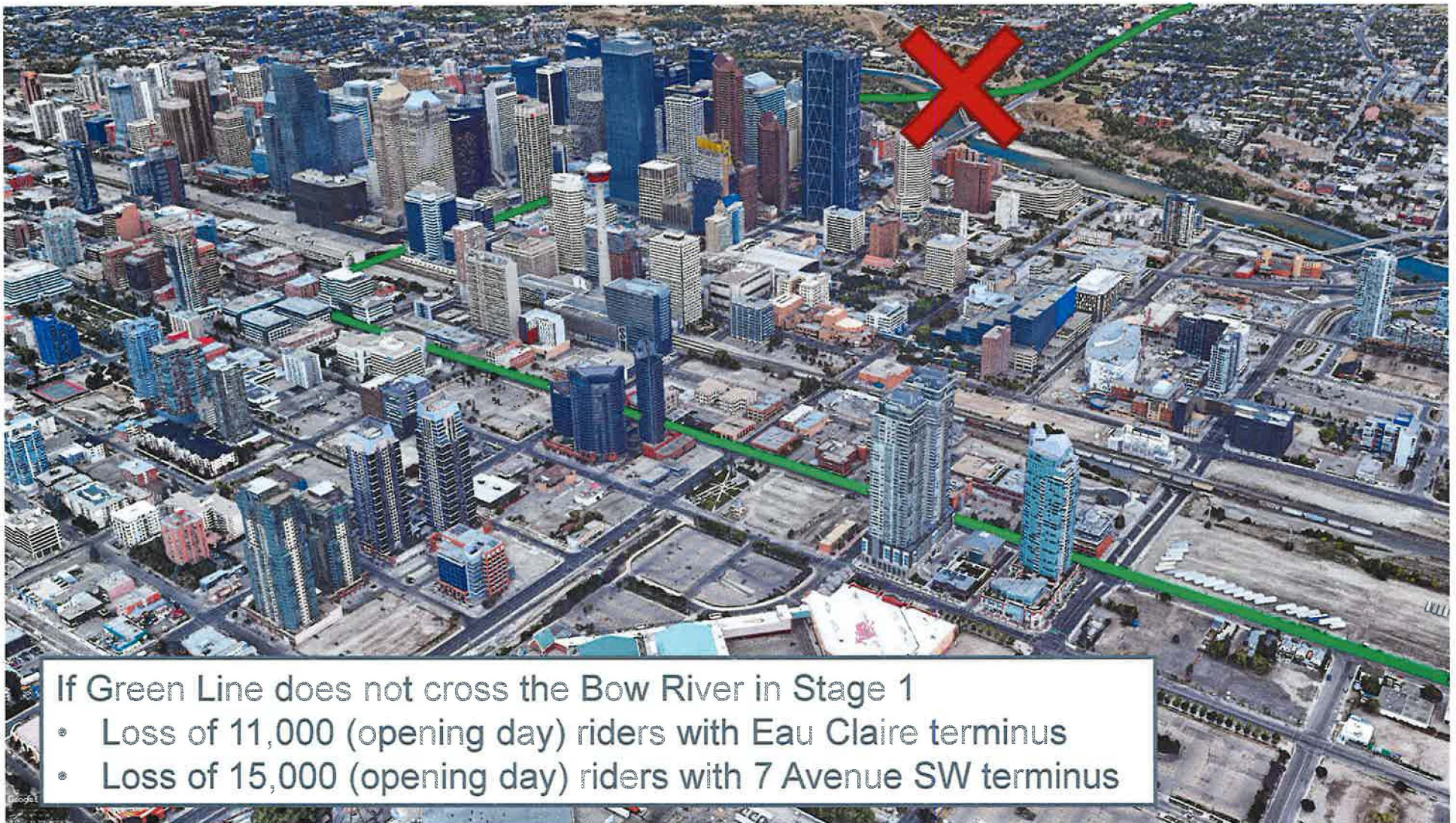
- Loss of throughput on Red Line Tunnel
- Loss of (long-term) ridership on Green Line (20%)



**Calgary**



## We Challenged: Need to Cross Bow River in Stage 1



If Green Line does not cross the Bow River in Stage 1

- Loss of 11,000 (opening day) riders with Eau Claire terminus
- Loss of 15,000 (opening day) riders with 7 Avenue SW terminus



## We Challenged: Need to Connect



If Green Line South and North do not connect

- 5% to 10% (long term) ridership loss





## **We Challenged: Prior Conclusions**

**We have confirmed that getting into the Core provides:**

- **Best return on investment**
  - Highest ridership
  - Connection to existing LRT lines
  - Connecting to highest employment density
  - Connecting to the arts / culture / entertainment areas

## **We Challenged: Design Criteria**

- Reducing size of Maintenance Facility
- Converting parking structure to surface lots
- Simplifying grade separations
- Optimizing LRV fleet requirements
- Reducing depth of underground
- Simplifying station design



## Snapshot of Review: Evaluation Criteria

### Cost & Value



- Deliver the highest value system with a lower life cycle cost
- Focused on the best investment decisions

### Risk & Constructability



- Minimize heavy civil works & utility relocations
- Reduce depth of underground

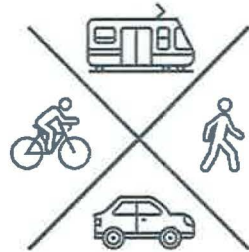
### Environmental



- Support the greening of public realm and spaces
- Reduces GHG Emissions

# Snapshot of Review: Evaluation Criteria

## Improves Mobility



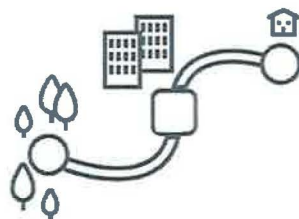
- Create easy access to transit
- Provides mobility choice for Calgarians

## Connecting People to Places



- Connect residential populations with employment centres
- Connect arts, cultural, recreational, and entertainment destinations

## Urban and Regional Development



- Minimize impact to existing developments (e.g. access)
- Maximize opportunities for future land development



## Snapshot of Options Reviewed

### A. Stage 1 Options:

- I. Existing Plan (16th Ave N to Shepard)
- II. Updated Plan (16th Ave N to Shepard)

### B. BRT Options:

- I. Southeast BRT and North BRT
- II. Southeast LRT and North BRT
- III. Southeast BRT and North LRT

### C. LRT Variations

- I. Southeast LRT connects to Blue/Red Lines and North LRT
- II. Southeast LRT terminates in the Beltline and North LRT



## Snapshot of Centre City Review

- Reducing the length of underground
- Reducing the number of underground stations
- Surface running trains on Centre Street N
- Surface running trains along 10, 11 and 12 Avenues S
- Shifting the underground alignment from 2 Street SW to 1 Street SW
- Bridge over Bow River
- Elevated trains through the Centre City



## Updated Stage 1 Plan

- Reduced underground from 4km to 2.2km
- Shallow underground LRT and stations
- Bridge over the Bow River
- At-grade LRT on Centre Street
- Revised Beltline alignment
- Ongoing review of station and portal locations and integration opportunities

## Previous Council Direction July 2019

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



## Previous Council Direction July 2019

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;



# Preferred Alignment Selection

## Workshop 1

January 24, 2020

- Review options considered and analysis
- Discuss trade offs with Green Line Committee

Stakeholder  
Engagement

Broader Citizen  
Outreach

## Alignment Selection

March 20, 2020

- Present preferred option for committee approval



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# Questions?

