

Assessment of Potential for Infill CTrain Stations

EXECUTIVE SUMMARY

In response to Council direction in NM2016-10, this report identifies the technical, financial, land use and ridership considerations related to the potential for constructing infill CTrain stations along the existing Red Line. The review also examined the potential for infill stations along the Blue Line. Three potential infill station sites have been identified as technically feasible on the Red Line at Northland Dr NW, 50 Av S, and Fisher Park (just south of Glenmore Trail).

High level estimates have identified construction costs of approximately \$20 million (50 Av S and Fisher Park, each) and approximately \$32 million (Northland Dr NW). The estimates are based on Class 5 in the Corporate Project Management Framework and have a variance of +100% and -50%. As well, each new station would require the addition of a peak period four-car train valued at \$25 million (four-car train plus one spare) to maintain current service frequencies and to accommodate new ridership. The annual operating costs for each new train is approximately \$1 million (wages, train maintenance, power) with station operating costs of about \$0.3 million per year.

The addition of CTrain stations at these three locations would support and be compatible with the goals and policies of the Calgary Municipal Development Plan (MDP), including Main Streets. Within each potential station area, there is opportunity for redevelopment of some adjacent lands for higher density Transit Oriented Development (TOD). Each of the potential station sites would require upgraded public infrastructure such as water, sewer, roads and pathways. Such redevelopment would also result in higher property values and tax revenues.

Higher density TOD adjacent to rapid transit stations has been shown in other cities to generate significant new ridership, but, in the case of the potential infill station areas this is difficult to quantify without information on the type, extent and scale of development.

The TOD opportunities at these potential station sites should be reviewed within the context of the development potential at current and planned LRT stations along the Red, Blue and future Green Lines, plus stops along the BRT network. Ridership and triple bottom line return on investment of candidate infill stations should be reviewed in conjunction with the TOD Implementation Strategy being prepared by Planning and Development. It is suggested that private sector interest and support would be the catalyst for pursuing further work related to these potential stations.

ADMINISTRATION RECOMMENDATION:

That the SPC on Transportation & Transit recommends that Council receive this report for information.

RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2017 DECEMBER 08:

That the Administration Recommendation contained in Report TT2017-1138 be approved.

PREVIOUS COUNCIL DIRECTION / POLICY

On 2016 March 7, Council adopted Notice of Motion "NM2016-10 – Red Line LRT Infill Scoping for Network Expansion and Area Land Use Identification" (Attachment 1). With this Notice of

Assessment of Potential for Infill CTrain Stations

Motion, Council directed that the potential for inserting infill Light Rail Transit (LRT) stations along the existing Red Line be investigated and directed Administration:

- "... to confirm the technical and financial viability of infill stations along the Red Line of the LRT and confirm how operations along the Red Line would be affected;
- "...to identify potential Transit Oriented Development high priority infill areas, particularly in conjunction with the Main Streets program, for those infill stations";
- "...prepare a report summarizing the potential ridership from these stations and report back to the SPC on Transportation and Transit no later than Q4 2017".

BACKGROUND

There have been inquiries regarding the potential to construct infill CTrain stations along Calgary’s existing LRT lines.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

Technical Feasibility

A comprehensive review of the existing Red and Blue CTrain lines (Attachment 2) has determined that three locations are technically feasible for infill stations based on accessibility (pedestrian, cycling and vehicular), adjacent land use and station spacing, as well as station design criteria, roadway, and potential for Transit Oriented Development. These locations are:

- Northland Drive NW – Red Line NW (between Brentwood and Dalhousie Stations)
- 50 Avenue S – Red Line South (between 39th Avenue and Chinook Stations)
- Fisher Park – Red Line South (just south of Glenmore Trail between Chinook and Heritage Stations)

Financial Considerations

The construction costs have been estimated (Class 5) at approximately \$20 million each for stations at 50 Av S and Fisher Park and approximately \$32 million for a station at Northland Dr NW. As well, each station would require adding a peak period CTrain to maintain existing service levels and handle additional passengers. The capital cost of purchasing five Light Rail Vehicles (LRVs) – a four-car train plus one spare – for each additional station is estimated at \$25 million. Table 1 provides a summary of the estimated capital costs for each of these potential stations and LRV costs. As well, there would be additional annual operating costs associated with adding stations (~\$0.3 million each), and trains (\$1 million each) plus some minor bus route revisions. These train and operating costs are similar to those associated with extending a CTrain line.

Table 1
Estimated Capital Costs of Potential Infill Stations*
 Class 5 - \$ millions

Location	Civil	Track & Way	Rail Systems	20% Cont. (additional for working in active train right of way)	Total Construction Cost Estimate	LRVs

Assessment of Potential for Infill CTrain Stations

Northland Dr NW	\$18.2	\$1.2	\$7.3	\$5.3	\$32.0	\$25.0
50 Av S	\$8.9	\$4.2	\$3.3	\$3.3	\$19.7	\$25.0
Fisher Park	\$9.0	\$4.0	\$3.5	\$3.4	\$20.4	\$25.0

The higher cost for the potential Northland station is due to the requirement for a more extensive station head (passenger waiting facilities and equipment rooms) due to the station located in the median of Crowchild Trail. For stations at 50 Av S and Fisher Park, consultation with CP Rail would be required.

Items Included in Capital Cost Estimates:

Civil Works: utility modifications, platforms, station & utility buildings, bus stops, customer pick up / drop off, sidewalks and pedestrian facilities, not including park and ride.

Track & Way: track bed & drainage modifications, track relocation, cross-overs & switches, fencing, signage.

Rail Systems: duct banks & cables, traction power, substations, signal & communication system modifications.

These cost estimates should be viewed with several caveats:

- Costs reflect recent expenses incurred for the reconstruction of Chinook Station in 2013 (similar to potential stations at 50 Av S and Fisher Park) and construction of Tuscany Station in 2014 (similar to a potential Northland station).
- Construction work conducted around active CTrain operations, with the expectation of minimal operating disruptions, will result in considerably higher costs (about 2 to 3 times higher than the cost of building a new station on a line extension).

Items not Included in Capital Cost Estimates

- Cost of Land (if needed).
- Cost of park and ride.
- There are no conceptual station designs and there has been no public engagement or consultation with other stakeholders to determine the full scope of station requirements.
- Details regarding geotechnical, groundwater or other site conditions such as potential impacts on adjacent utilities are not available.

Land Use and Transit Oriented Development

The three potential station locations have the ability to support some level of redevelopment for higher density TOD and such redevelopment is generally supported by current planning policies (Calgary Municipal Development Plan, Main Streets) pending considerable public engagement.

- Northland Drive NW – Red Line NW – Within a Community Activity Centre, but no relevant Local Area Plan exists.
- 50 Avenue S – Red Line South – East of 50 Avenue Area Redevelopment Plan (ARP) and 50 Avenue SE Main Street. On the north end of the Chinook Station ARP.

Assessment of Potential for Infill CTrain Stations

- Fisher Park – Red Line South – No Local Area Plan. South of Chinook Station ARP and east of Macleod Trail SE Main Street.

However, without a comprehensive review of all TOD opportunities it is difficult to determine if these station areas would be a high priority for TOD planning and investment particularly given the potential for TOD at current and planned LRT stations along the Red, Blue and Green lines.

Therefore, it is likely that private sector interests would be the catalyst for the consideration of an infill station at one or all of these locations. The inherent uplift in property values that would occur with the addition of a new station should be taken into account when reviewing any proposals to add these stations.

Any new LRT station will result in increased transit ridership since a new service area would be created where access by walking, cycling and shorter feeder bus trips would be improved. More detailed analysis based on the size and design of any proposed redevelopment is required to determine potential transit ridership gains. Without station area redevelopment, new transit ridership would be limited to approximately 1,000 to 2,000 additional weekday trips from those living or working within the immediate station area. These numbers are similar to ridership at Shaganappi Point or Barlow Max Bell Stations which have a similar land use surrounding the station.

Stakeholder Engagement, Research and Communication

City of Calgary staff from Planning and Development, Urban Strategy, and Real Estate and Development Services provided input to this report.

Strategic Alignment

Adding stations along Calgary's existing CTrain lines aligns with the goals and policies of the Calgary Municipal Development Plan that include fostering development of a compact city with complete communities, good urban design and an integrated, multi-modal transportation system that supports land use and provides increased mobility choices.

Social, Environmental, Economic (External)

The construction of additional CTrain stations along the Red Line would improve access to transit and urban mobility for those living or working within the area surrounding these potential new stations. Close proximity to rapid transit has been shown to attract transit supportive development and reduce automobile usage and the associated green house gas emissions. Within the area surrounding any new CTrain stations there would be a positive impact on the value of land. TOD within the station areas would increase property tax revenues.

Financial Capacity

Current and Future Operating Budget:

There are no impacts to current and future operating budgets identified in this report.

Current and Future Capital Budget:

There are no impacts to current and future capital budgets identified in this report.

Assessment of Potential for Infill CTrain Stations

Risk Assessment

There are no risks associated with this report.

REASON(S) FOR RECOMMENDATION(S):

The information provided in this report and the background investigation / costing will provide a valuable reference for any future consideration for constructing infill stations with supporting TOD along Calgary's existing CTrain lines.

ATTACHMENT(S)

1. Attachment 1 – NM2016-10
2. Attachment 2 – Investigation of the Potential for Infill Stations Along Calgary's LRT System