

North Central Bus Rapid Transit (BRT) Functional Study

RECOMMENDATION(S):

That the Green Line Committee:

1. Approve the North Central BRT Functional Study.
2. Approve that the Recommended short- and medium-term Green Line Business Case Improvements in Attachment 3, totalling \$50.0M, be included in the Green Line Provincial Business Case and concurrently explore \$16.85M in additional funding sources to support the Bus Rapid Transit (BRT) program.
3. Advance the long-term Recommended Capital Infrastructure Investment Priority (IIP) Improvements and Optional Improvements in Attachment 3 to the Capital Infrastructure Investment Priority (IIP) process where possible funding sources will be identified.

HIGHLIGHTS

- This report outlines the short- (0-5 years), medium- (5-10 years), and long-term (over 10 years) improvements recommended for the mobility corridor along Centre Street and Harvest Hills Boulevard between 160 Avenue N. and downtown. The improvements include optimizing the existing network to improve transit travel time and reliability, improving access to the BRT system along the corridor, and transitioning the existing BRT service to a future MAX BRT service with supporting station and roadway upgrades.
- **What's the benefit for Calgarians?** The proposed short- and medium-term improvements will provide travel time savings of about 4 minutes between the Centre Street Bridge and the North Pointe Park and Ride), increased safety and reliability, enhanced comfort and convenience, and better accessibility, including improved active mode amenities in north central Calgary.
- **Why does this matter?** The first phase of Green Line Light Rail Transit (LRT) will extend to 16 Avenue N. The proposed improvements will link the investments that The City is making with Green Line to provide enhanced connections to north central communities. The improvements will help continue to build the market for transit and will support the future transition to LRT along the Centre Street/Harvest Hills Boulevard corridor. This approach is in alignment with mode progression.
- The recommended short- and medium-term improvements are detailed in Attachment 3 and generally include:
 - 11 km of transit-only lanes (5 and 6 Avenue S. from Centre Street to 6 Street S.W. and Centre Street from 16 Avenue N. to McKnight Boulevard)
 - 17 MAX BRT stations (including heated shelters and passenger information signs)
 - 5 km of active mode improvements on Harvest Hills Boulevard
 - 7 intersection improvements
 - Safety improvements (including pedestrian accessibility and lighting upgrades)

North Central Bus Rapid Transit (BRT) Functional Study

- Long-term improvements should be constructed once specific criteria are met (i.e. increased ridership and demand, traffic volumes, and progression of both land development and the Green Line LRT to the north). The recommended long-term improvements include:
 - An additional 2 km of transit-only lanes downtown (on 5 and 6 Avenue S. from 6 Street S.W. to 11 Street S.W.)
 - 8 - 10 additional MAX BRT stations (including heated shelters and passenger information signs) and a downtown terminal
 - 250-stall Park and Ride at 96 Avenue N.
 - BRT service extension north of Stoney Trail to 160 Avenue N
 Optional improvements may be implemented in the future dependent on the timing of Green Line LRT extensions to the north. These consist of:
 - 8 km of transit-only lanes from McKnight Boulevard to Stoney Trail
 - 1 intersection improvement at Beddington Boulevard.
- Attachment 2 provides a summary of the North Central BRT Functional Study and a list of options that were considered.
 - The options were developed based on a review of the existing operating conditions, modelling of traffic and transit ridership and public engagement.
 - The options were then prioritized by analyzing project benefits, capital costs, travel time and reliability improvements and the overall customer experience (in terms of convenience and comfort).
 - A cost-benefit analysis was then completed to identify the return on investment and resulting projects were categorized into short-, medium- and long-term recommendations.
- The study was completed in coordination with other work happening in the area including: The North Central Mobility Study, Green Line, Tomorrow's Chinatown, the Eau Claire Area Improvements Project, Main Streets, the Downtown Strategy, and the Greater Downtown Plan.
- **Past Council Direction:** At the 2020 June 15 Green Line Committee, report GC2020-0583 directed Administration to develop a Functional Plan for a flexible and convertible mobility corridor in north central Calgary from 160 Avenue N. to downtown and report back with the functional plan and the delivery plan for the funded improvements.
- A separate Motion Arising directed Administration to develop a streetscape masterplan for Centre Street S. (Centre Street Bridge to 4 Avenue S.) to improve public realm and pedestrian safety, while also coordinating this project with future BRT infrastructure.
- This project aligns to Council's Citizen Priorities: A City That Moves.
- Background and previous Council direction is included as Attachment 1.

DISCUSSION

The first phase of Green Line LRT will extend to 16 Avenue N. This study recommends improvements that will augment the transit connectivity between downtown and the north central communities in the short-, medium-, and long-term, in addition to supporting the future transition to LRT along the corridor.

North Central Bus Rapid Transit (BRT) Functional Study

Green Line LRT Coordination

The BRT will operate in the general purpose travel lanes where it overlaps with Green Line Stage 1 on Centre Street N., between 16 Avenue N. and the Centre Street Bridge. New BRT stops at 16 Avenue are proposed to support MAX Orange, Green Line and the North Central BRT. The 16 Avenue N. and Centre Street intersection has been designed to accommodate both the Green Line LRT and the North Central BRT requirements in an integrated manner.

Design Considerations and Approach

Traffic modelling was completed using traffic data for both the pre-COVID conditions and the forecasted opening day conditions with Green Line Stage 1 in place. The analysis of the existing conditions, along with public engagement feedback identified where the current BRT service experiences operational challenges. Potential improvements were identified and analyzed to assess the anticipated travel time savings for the BRT service.

Project Evaluation

A cost-benefit analysis was completed to consider the benefits to travel time reliability and the overall customer experience compared with capital costs. The recommendations were categorized into short-, medium- and long-term improvements:

- Short-term improvements focus on improvements to accessibility and connectivity along the North Central corridor and improvements to transit travel time and reliability including: intersection and operational improvements and downtown bus-only lanes.
- Medium-term improvements are those that would be coordinated with the opening day of the Green Line LRT and include the implementation of proposed transit-only lanes north of 16 Avenue N. to McKnight Boulevard N. and MAX station enhancements.
- Long-term improvements have been broken into two components: improvements for implementation when operational growth factors are met and improvements that are considered optional that are dependent on the timing of Green Line LRT extensions to the north and require further analysis and review before implementing. See details in Attachment 3.

The recommended short- and medium-term improvements summarized in Attachment 3 have a Class 5 Estimate of \$66.85M where \$50.0M in direct transit system enhancements is recommended for inclusion in the Green Line Provincial Business Case. \$16.85M is recommended for improvements that benefit accessibility with broader community benefit to be advanced to the Capital IIP process. The long-term improvements are suggested for the Capital IIP process where recommended improvements have a Class 5 estimate of \$23.0M and an estimate of \$18.30M - \$30.3M for optional improvements requiring further review.

Centre Street South Public Realm and Streetscape Improvements

The Phase 1 work of the streetscape masterplan for Centre Street S. between the Centre Street Bridge and 4 Avenue S. is focused on the improvements needed to support the North Central BRT. Short-term improvements include sidewalk upgrades, new stations, and public realm improvements. The work for Phase 2 will include a comprehensive streetscape master plan once funding and resources are available and will not be within the Green Line scope.

North Central Bus Rapid Transit (BRT) Functional Study

STAKEHOLDER ENGAGEMENT AND COMMUNICATION (EXTERNAL)

- ☒ Public Engagement was undertaken
- ☐ Public Communication or Engagement was not required
- ☒ Public/Stakeholders were informed
- ☒ Stakeholder or customer dialogue/relations were undertaken

Multiple opportunities for virtual citizen engagement were provided via three phases of engagement between October 2020 and April 2021. For the North Central BRT study, the project team participated in 29 public sessions and stakeholder meetings and conducted 6 online surveys. In total over 60,000 people were made aware of the project through our communications campaigns, we connected with over 11,000 participants through our engagement opportunities (online portal and sessions) and received over 750 contributions across all phases. Attachment 2 provides a summary of citizen engagement.

IMPLICATIONS

Social

The North Central BRT will contribute to positive social conditions through improved public spaces and social inclusion by providing an affordable and alternate mode of travel.

Environmental

Improvements to the transit and pedestrian network will encourage the use of alternate modes of transportation and result in a reduction of the overall number of vehicles on the road. The North Central BRT is an important contributor to meeting The City's GHG reduction target of 80 percent below 2005 by 2050.

Economic

Centre Street is one of the most used transportation corridors in Calgary, with existing transit ridership of approximately 30,000 customers per day with approximately 20,000 of those customers traveling in and out of downtown. Improvements to the Centre Street corridor will connect established and new communities to key employment and commercial nodes.

Service and Financial Implications

Other: Green Line Provincial Business Case

\$50.0M

The implementation of the short- and medium term improvements as part of this project will provide a return on investment for citizens by enhancing travel options and extending Calgary Transit service to the existing communities and developments in north central Calgary.

RISK

Disruption to businesses and the public during construction is a concern that will be addressed by communication and consultation with stakeholders during the design and construction phase of the work.

**Transportation Report to
Green Line Committee****ISC: UNRESTRICTED
GC2021-0747
Page 5 of 5****North Central Bus Rapid Transit (BRT) Functional Study****ATTACHMENT(S)**

1. Previous Council Direction, Background
2. North Central BRT Functional Study Summary Report
3. Estimated Costs and Funding Source Recommendations

Department Circulation

General Manager	Department	Approve/Consult/Inform
Doug Morgan	Transportation	
Michael Thompson	Green Line	