

North Central Mobility Study

RECOMMENDATION(S):

The Green Line Committee receive this report for information.

HIGHLIGHTS

- The North Central Mobility Study conducted a comprehensive review of current and Green Line Stage 1 opening day conditions of north central Calgary's multi-modal transportation network. The study reviewed the pedestrian, bicycle and transit connections in the study area, the impacts of dispersed traffic from the Green Line corridor to other corridors, and ways to mitigate the impacts on community livability. The study proposed strategies to improve safety and travel time reliability for all users. The proposed improvements will invest \$15M in the transportation network and will be funded through the Corporate Investment Priority Process.
- The study was completed in coordination with other work happening in the area including: The North Central BRT Study, Green Line, Tomorrow's Chinatown, the Eau Claire Area Improvements Project, Main Streets, the Downtown Strategy, and the Greater Downtown Plan.
- *What does this mean to Calgarians?* The outcomes of this study will complement Green Line and BRT operations and ensure safe and efficient travel for all users of the network.
- *Why does this matter?* The long-term vision for the future of mobility in north central Calgary is to offer choices for mobility and deliver solutions that help to move Calgarians efficiently. The vision for the Green Line corridor is to move more people through transit service progressively leading to the full implementation of Green Line LRT. In Stage 1 when Green Line terminates at 16 Avenue N, there will be a shift in how people travel and access the downtown. Operational changes are needed to optimize the use of the network, provide reasonable travel times for people and goods, address congestion impacts on climate, and protect community livability.
- The goals of this study are to:
 - Identify impacts to mobility and community livability caused by dispersion of traffic from Centre Street and develop mitigation measures.
 - Provide safe and efficient connections for goods and people walking, wheeling, taking transit, and driving.
 - Protect community livability adjacent to the transit corridor by reducing cut-through traffic in the neighborhoods.
- This report summarizes findings from:
 - Community traffic review (all modes) in the study area, bounded by 16 Avenue N, McKnight Boulevard, 4 Street N.W. and Edmonton Trail, as well as, measures to address impacts to community livability.
 - Broader network review for vehicular and goods movement and measures to provide reasonable travel times and efficiency.
- A separate community mobility review was conducted for Crescent Heights and included in the Green Line Functional Plan report.
- Many of the enhancements identified for community mobility improvements can be implemented in the short term in advance of Green Line construction commencing. This could further support neighbourhood traffic management during construction.

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- Strategic Alignment to Council's Citizen Priorities: A city that moves. A city of safe and inspiring neighbourhoods.
- Background and Previous Council Direction is included as Attachment 1 of the Green Line Segment 2 Functional Plan report (GC2021-0736).

DISCUSSION

Future of Mobility in north central Calgary

With the addition of the surface running Green Line LRT, Centre Street N south of 16 Avenue N will be transformed from an existing commuter corridor to an Urban Main Street that prioritizes transit and pedestrian movement in alignment with the Municipal Development Plan and Calgary Transportation Plan. The North Central BRT Study (GC2021-0747) has identified short, medium and long-term improvements to transit service along Centre Street N and Harvest Hills Boulevard N. Together, the LRT and BRT investments will enable the transformation of mobility in north central Calgary.

We anticipate that many people will shift from driving to transit upon the opening of Green Line Stage 1 and that an even more significant travel pattern change will occur as the Green Line extends north. However, opening day of Green Line Stage 1, with a terminus at 16 Avenue N, will result in an increase of people accessing Centre Street N by walking, wheeling, and taking transit, and the dispersion of vehicular traffic from Centre Street N to other corridors.

This study was conducted to understand how people's travel patterns and goods movement will change, identify impacts of traffic dispersion on community livability and mobility, and to identify strategies to mitigate the impacts. The study area extends from north of the Bow River to 160 Avenue N, east to Deerfoot Trail and west to Crowchild Trail N.W., with a focus on communities bordering the LRT and BRT routes.

The following strategies have been identified to address the impact of traffic dispersion:

- Strengthening connectivity and safety for people walking and wheeling
- Introducing traffic calming on community corridors to discourage cut-through traffic
- Improving major intersection operations through signal modifications and other minor improvements to provide travel time reliability
- Enhancing connections to downtown on alternate corridors

Current multi-modal transportation network review

Prior to understanding Green Line LRT and BRT opening day conditions, a comprehensive review of the existing network for all users was completed. The review identified locations in north central Calgary that can be improved for community mobility. Recommendations from the review included measures to improve safety and connectivity for all transportation users. Attachment 1 contains details on the locations and measures identified.

Opening day multi-modal transportation network review

Opening day of Green Line Stage 1, it is estimated that during the rush hours over half of the vehicles currently using Centre Street N will be displaced to nearby corridors as identified below:

- Approximately 30-40% diverted to Edmonton Trail N.E.

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- Approximately 30-40% diverted to Memorial Drive (east and west of Centre Street N)
- Approximately 15-20% diverted to 14 Street N.W.
- Approximately 10% diverted to 10 Street N.W.

Short-term measures (0 to 5 years):

- The changes to Centre Street N will create traffic diversion into neighborhood streets impacting community livability. The following streets have been recommended for traffic calming, as well as walking and wheeling improvements to mitigate the impacts:
 - 3 Street N.W. between 40 Avenue N.W. and 32 Avenue N.W.
 - 1 Street N.W. between 32 Avenue N.W. and 16 Avenue N.W.
 - 1 Street N.E. between 41 Avenue N.E. and 16 Avenue N.W.
 - 20 Avenue N.W., 24 Avenue N.W., 30 Avenue N.W., 32 Avenue N.W., 40 Avenue N.W., and 41 Avenue N.E., between 4 Street N.W. and Edmonton Trail N.E.
 - Greenview Drive N.W. between McKnight Boulevard N.E. and Edmonton Trail N.E.

Medium-term measures (5 to 10 years):

- Although congestion is acceptable in urban areas, an increase in congestion can result in a rise in green house gas emissions. Congestion has an economic impact and can affect Calgary's attractiveness as a logistics hub in Western Canada. Social/psychological impacts of congestion include increase in anxiety, stress, and road rage creating potential unsafe conditions for all users. The following measures are recommended to address these impacts:
 - Maintain the configurations of the existing river crossings and connections in and out of downtown during rush hours. This will be important to sustaining mobility choices in and out of downtown during Green Line Stage 1.
 - Add new northbound and southbound right-turn lanes at Edmonton Trail and 16 Avenue N. This will encourage traffic to stay on main roads and discourage neighborhood cut-through traffic. The implementation of this recommendation should be coordinated with Green Line as this measure can help manage impacts during construction along Centre Street N. A construction impact review will be completed by the Green Line contractor before construction commences to help establish necessary detours and enabling works.
 - Add new northbound and southbound right turn lanes at Edmonton Trail and McKnight Boulevard. This improvement will also help enhance goods movement in the area.
 - Further review and monitor the corridors of 14 Street N.W., 10 Street N.W., and Edmonton Trail N.E. to maintain multi-modal mobility.
 - Implement left turn improvements along Centre Street N at 40 Avenue N.W., 41 Avenue N.E., and 64 Avenue N. These recommendations will improve BRT operations in the medium-term and are also included as part of the North Central BRT study recommendations. These improvements will need to be reviewed and revised as needed in the long-term, when Green Line extends further north.

Long-term measures (10+ years):

- Memorial Drive connection from Deerfoot Trail into downtown will see an increase in traffic volume as people driving divert to Deerfoot Trail and enter downtown through this skeletal road. This connection must be reviewed to coordinate and complement the long-term improvements planned for Deerfoot Trail.

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Next steps will include pursuing funding options and availability, along with developing implementation plans of the recommended measures. Attachment 1 provides a summary of the 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 Mobility 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.

IMPLICATIONS

Social

The proposed recommendations together with the Green Line and BRT enhancements will help improve sustainable connectivity for Calgarians and protect community livability.

Environmental

Recommendations for walking and wheeling from the study will encourage the use of sustainable modes of transportation. Congestion mitigation measures will help the City in meeting Council's approved greenhouse gas emissions (GHG) reduction target of 80 percent below 2005 by 2050.

Economic

Providing safe and efficient movement of people to businesses and destinations will help improve and sustain Calgary's economy. Goods movement is a critical component of Calgary's economy. Providing travel time reliability for goods movement will help support businesses.

Service and Financial Implications

The recommendations can be implemented through the existing Transportation programs but will require \$15M in additional funding. A new North Central Mobility Program will be evaluated as part of the Corporate Investment Priority Process.

RISK

The mobility recommendations from the study assume that most of the north line of Green Line will be constructed by 2048 resulting in a significant mode shift to taking transit throughout north central Calgary. If the terminus of Green Line remains at 16 Avenue N for a significantly longer

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period than expected, the network will likely need additional improvements to meet the demands of growing traffic in the area.

ATTACHMENT(S)

1. Attachment 1 - North Central Mobility Study summary

Department Circulation

General Manager	Department	Approve/Consult/Inform
Doug Morgan	Transportation	Approve