

WEST AND SOUTH WEST RING ROAD DOWNSTREAM TRAFFIC IMPACTS

EXECUTIVE SUMMARY

Alberta Transportation (“AT”) is preparing to construct the final sections of the Calgary Ring Road. This includes the South West Ring Road (“SWRR”) (from Lott Creek Blvd to Macleod Trail S) and the West Ring Road (“WRR”) (from Trans Canada Highway to Highway 8). Construction on the SWRR is anticipated to begin in September 2016, with completion by the fall of 2021. The timing of the WRR is still to be confirmed.

The City of Calgary (“The City”) is working with AT on key items and issues related to the ring road projects. Topics range from environmental to traffic related issues. Significant progress has been made throughout 2015 and many issues have been resolved. Administration is also preparing to construct ring road connections, and has reviewed traffic pattern changes that are anticipated to occur when the WRR and SWRR sections are open to traffic.

Administration heard from communities and residents about key downstream locations of interest that required further investigation, comments and questions about ring road connections, and general feedback. Administration documented the information, completed traffic analysis work to investigate the downstream locations of interest, and incorporated the ring road connections comments into the functional planning work. Downstream traffic implications at a number of locations have been reviewed based on the information and input available. There are a limited number of locations where mitigation measures are proposed, while the majority of the locations are anticipated to function appropriately after the ring road is completed. The locations where mitigation is proposed are summarized in Attachment 2.

The WRR timing has a significant influence on the need for infrastructure improvements to Sarcee Trail. A number of possible scenarios were evaluated and are described in Attachment 3, including cost benefit analysis of the most effective mitigation scenarios. With the SWRR in place but without the WRR in place, Sarcee Trail is expected to require significant infrastructure investment. This would include widening the facility between Richmond Road and Bow Trail and constructing interchanges at Richmond Road and at Bow Trail, and will likely require additional improvements to the Sarcee Trail/Trans Canada Highway interchange. With the WRR in place, Sarcee Trail is expected to see congestion relief and most of the infrastructure investment would not be required.

In either case, the Richmond Road interchange, which benefits the road network, traffic volumes on Richmond Road, and the community network adjacent to Richmond Road east of Sarcee Trail is needed in the short and long term. This project is currently unfunded, but, given the above, it is expected that this project will rank higher and be in the 10-year horizon when the next update of Investing in Mobility is completed (expected in 2018).

ADMINISTRATION RECOMMENDATIONS

Administration recommends that the SPC on Transportation and Transit recommends that Council:

- 1) Receive the recommended list of mitigation measures and locations for monitoring post South West Ring Road completion as shown in Attachment 2 for information, to be included in the Ring Road Connections program (Program 543-001) or Investing in

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Mobility; and

- 2) Direct Administration to continue discussions with Alberta Transportation to confirm the West Ring Road timing and the need for further investment in Sarcee Trail if the West Ring Road does not proceed prior to completion of the South West Ring Road.

RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2015 NOVEMBER 18:

That Council:

1. Receive the recommended list of mitigation measures and locations for monitoring post South West Ring Road completion as show in Attachment 2 for information, to be included in the Ring Road Connections program (Program 543-001) or Investing in Mobility; and
2. Direct Administration to continue discussions with Alberta Transportation to confirm the West Ring Road timing and the need for further investment in Sarcee Trail if the West Ring Road does not proceed prior to completion of the South West Ring Road.
3. **Direct Administration to review opportunities for funding through Investing in Mobility and other sources, interchange at Richmond Road and Sarcee Trail and report back no later than 2016 Q3, with an update to the SPC on Transportation and Transit on functional planning, local area improvements and next steps.**

Opposition to Recommendation 3:

Opposed: P. Demong

PREVIOUS COUNCIL DIRECTION / POLICY

On 2014 April 30, Council approved NM2014-23, which directed that:

“Administration review the impacts and implications of the new ring road sections, evaluate solutions to mitigate impacts and approach the Province to discuss these solutions including options to fund improvements as part of the ring road program.”

And that “Administration report back to Council no later than the end of Q4 2014 with an update on the ring road program.”

On 2014 December 15, Council approved the following recommendation from C2014-0949:

“Direct Administration to continue to investigate implications of traffic pattern changes within the City roadway network as a result of the South West Ring Road, and report back to the SPC on Transportation & Transit with a completed summary of downstream implications and recommendations by the end of Q4 2015.”

BACKGROUND

The City continues to work with AT on items of interest and concern from The City’s perspective as they proceed with preparations for the ring road construction.

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Administration is also preparing to construct ring road connections so these roads are constructed and ready to connect to the ring road when that project is completed. The locations shown on Attachment 1 are projects that are being undertaken with funding from the Ring Road Connections budget identified in Investing In Mobility and approved as part of Action Plan 2015-2018.

In addition, Administration has completed the review of traffic pattern changes to identify areas where modifications are required and a comprehensive mitigation strategy has been identified.

The WRR and SWRR sections are anticipated to draw traffic from existing roadways in Calgary. This will result in changes to traffic patterns in many areas of the south west road network. A number of skeletal and arterial roads will see reductions in traffic volumes, while others will see increases in traffic volumes.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

Administration reviewed technical information and spoke with residents and community associations through the second half of 2014 and throughout 2015. This information identified a number of locations which Administration recommended undergo further review. This review is now complete.

The locations shown on Attachment 2 represent key areas of interest for the public, and key locations where further analysis was completed. The analysis of downstream implications at these locations included verification of the issues, evaluation of the changes or impacts, and development of mitigation options if required. Many of the identified locations are interrelated, and the analysis was subsequently done in a comprehensive manner that accurately accounts for the complexity of the traffic patterns. The results of the analysis are shown in Attachment 2.

Generally, traffic is anticipated to decrease on network roads such as 14 Street SW, Elbow Drive SW, Macleod Trail S, and Glenmore Trail between Crowchild Trail and Elbow Drive. Traffic is anticipated to increase on network roads such as Anderson Road, Glenmore Trail between Sarcee Trail and Crowchild Trail, Richmond Road, and Highway 8. Traffic volumes are anticipated to change on other network roads, however this includes either increases or decreases depending on the time of day and direction of travel.

Some of the key infrastructure which is already funded through Investing in Mobility includes:

- Glenmore Trail, which will be widened to 6 lanes from AT's project limits to Crowchild Trail,
- Glenmore Trail / Crowchild Trail interchange. The eastbound to northbound movement will see more traffic with the opening of the ring road, while the westbound to northbound movement will see less traffic with the opening of the ring road. This allows for optimization to provide additional capacity for the new demand while minimizing the impact to the surrounding area and helping to accommodate the new traffic patterns. This interchange will also be studied for longer term improvements, with a functional planning study to be conducted in the 2017-2018 time frame,

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- Anderson Road, which will be widened to 6 lanes from the ring road to 14 Street with improvements to the intersections at 24 Street SW, Woodpark Blvd SW, 14 Street SW, and Elbow Drive SW as well as a new pedestrian bridge connecting Woodbine to Cedarbrae (pedestrian bridge funded by Alberta Transportation),
- Bow Trail, which will be widened to 4 lanes between 69 Street and 85 Street SW, with improvements to the Bow Trail & 85 Street SW intersection. Bow Trail will also be connected to the West Ring Road west of 85 Street SW.

The downstream traffic impacts review has identified the proposed improvements as shown in Attachment 2. These items are relatively minor capital expenditures and will be incorporated into the Ring Road Connections budget as approved in Investing in Mobility.

Since the previous Council report in December 2014, the Provincial Government announced that there would be a delay to the completion of the WRR. As a result, Administration conducted a review to analyze the impacts that this delay would cause to the City's infrastructure. To date, the timing of the WRR has not been confirmed.

In general, the area south of Glenmore Trail sees little to no change with the delay to the WRR. With the WRR in place, Sarcee Trail volumes are anticipated to decrease (by approximately 30%) from current traffic volumes. However, if the WRR is not in place when the SWRR is completed, the Sarcee Trail corridor is anticipated to experience higher traffic volumes than the traffic volumes of today (increases of 10-25%). As well, previous analysis suggested that Richmond Road is anticipated to experience increased volumes (approximately 10-20%) once the SWRR is in place, and this does not change whether the WRR in place or not.

Administration evaluated a number of potential improvements to assess the value of the required investment in advance of WRR construction, in consideration of impacts to Sarcee Trail, Richmond Road, and also Crowchild Trail. These options included:

- Interchange at Sarcee Trail & Bow Trail,
- Interchange at Sarcee Trail & Richmond Road,
- Widening of Sarcee Trail between Richmond Road and Bow Trail,
- Lane reversal on Bow Trail between Sarcee Trail and 37 Street SW for the AM rush hour,
- Improvements to the Richmond Road corridor, and
- Numerous combinations of the above options.

The analysis evaluated traffic volume changes, impacts on congestion, travel time, greenhouse gas emissions, social impacts, capital costs, and operation and maintenance costs for the scenarios considered. The analysis is intended to be consistent with Investing in Mobility cost benefit analysis to be used for evaluating potential candidate projects across the city as a whole.

The results of the analysis are shown in Attachment 3. There are a number of key outcomes of this analysis:

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1. In the absence of the WRR, the Sarcee Trail corridor would require a number of improvements, including interchanges at Bow Trail and Richmond Road, as well as widening to 6 lanes (3 in each direction) from Bow Trail to Richmond Road.
2. It is anticipated that further improvements to the Trans Canada Highway & Sarcee Trail interchange would be required if the WRR is not in place.
3. A number of these improvements, most notably the Bow Trail interchange, would not be required for some time when the WRR is in place.
4. The timing of the WRR, therefore, is critical in defining the need for investment in Sarcee Trail.

The exception to item 4 above is the Sarcee Trail & Richmond Road interchange. The Richmond Road corridor is anticipated to experience an increase in traffic when the SWRR is in place. The Calgary Transportation Plan identifies Richmond Road as a neighbourhood boulevard and arterial street. Options that were evaluated to assess potential mitigation of this issue are described in Attachment 3.

The existing condition of Richmond Road between Sarcee Trail and 37 Street provides opportunity to improve traffic flow and help alleviate congestion. However, Richmond Road east of 37 Street has a limited road right of way, adjacent residential properties, and existing traffic congestion which is not as easily mitigated without significant community impacts. There is potential to implement some measures to assist with the anticipated changes in traffic patterns in the absence of an interchange at Richmond Road. However, the opportunities for mitigation are limited east of 37 Street, and there is potential to observe shifting and increased traffic within the communities east of 37 Street SW.

An interchange at Sarcee Trail and Richmond Road is anticipated to provide the benefit of reducing Richmond Road traffic volumes, and also provide benefit to Sarcee Trail in both the short and long term (i.e. with or without the West Ring Road in place). It also alleviates anticipated issues with maintaining effective and safe operation of Sarcee Trail & Richmond Road as an at-grade intersection due to its proximity to the interchange at Glenmore Trail & Sarcee Trail. There would be operational challenges in this confined space where a number of the interchange ramps would need to tie in to the signalized intersection within a short distance. More detailed analysis is shown in Attachment 3 and below under the Social, Environmental, and Economic heading for the scenarios described above.

The Sarcee Trail/Richmond Road interchange project will be included as a candidate project in the next Investing in Mobility update. The Sarcee Trail/Richmond Road interchange was included in the analysis for Investing in Mobility 2015-2024, but at that time was not included in the 10-year horizon of funded projects. However, based on the cost benefit analysis which has been done as part of this report, previous evaluation of this infrastructure as part of Investing in Mobility, and a cursory analysis of the Goods Movement project ranking, it is expected that this project would rank highly in the next update of Investing in Mobility (expected in 2018) and would likely be part of the 10-year priorities. Work is currently underway to begin updating the functional plan for this interchange, so that the project is ready to advance in the 2019-2021 time frame.

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Some of the traffic pattern changes as a result of the SWRR also offer an opportunity to work toward Calgary Transportation Plan goals and Council objectives. For example, the section of 14 Street SW south of Glenmore Trail will have very different traffic volumes with and without the SWRR. The SWRR lowers potential traffic volumes and improves the opportunity to provide dedicated busway facilities for the SW Transitway.

Stakeholder Engagement, Research and Communication

The City participated in seven information sessions and a number of community meetings with the Province through the fall of 2014. Citizens filled out more than 500 City of Calgary feedback forms with comments and questions. Administration used this information and the information provided to the Province to help guide communications about the project through 2015. The project team also considered the input when studying traffic changes as result of the ring road.

Project representatives attended further community meetings and information sessions throughout the spring and fall of 2015. In addition, three information sessions were held at the end of October 2015 to report back on the findings and recommendations of the downstream impacts investigation and the ring road connection projects.

Strategic Alignment

This project has evaluated the SWRR downstream impacts with a goal to ensure The City's approach is in keeping with policies and goals such as the Calgary Transportation Plan, Route Ahead, and Council Priorities.

This project is aligned with City policies such as; Calgary Transportation Goal #1 (Align transportation planning and infrastructure investment with city and regional land use directions and implementation strategies), Sustainability Principle #9 (Connect people, goods and services locally, regionally and globally), and Sustainability Principle #10 (Provide transportation services in a safe, effective, affordable and efficient manner that ensures reasonable accessibility to all areas of the city for all citizens).

Social, Environmental, Economic (External)

A cost benefit analysis has been completed for the downstream traffic impacts related to the WRR and SWRR, specifically the potential mitigation measures along Sarcee Trail. The results are shown in Appendix 3.

Social

The SWRR project involves changes to community access for citizens, impacts for adjacent properties, and changes to traveller choices and patterns once construction is complete, with improved mobility along the west and south west edges of Calgary.

It is anticipated that there will be some noise impacts with some of the ring road connections, requiring noise mitigation walls or upgrades to existing walls. Each of the connections will be evaluated to identify these requirements. Alberta Transportation will also evaluate noise impacts for the Ring Road project, within their project limits.

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The results of the downstream traffic impacts study have indicated that, for the vast majority of locations on the City's network, the SWRR will result in some changes to traffic patterns but not a requirement to provide mitigation measures. The locations which have been identified for mitigation measures are expected to improve access and mobility for residents along the west side of the city, and to mitigate the impacts of the SWRR on the communities as required.

Most specifically, the recommended interchange at Sarcee Trail & Richmond Road will help alleviate the increased traffic volumes that are anticipated along Richmond Road. This will in turn help prevent the potential for shortcutting traffic on residential roads due to increased traffic volumes and congestion on Richmond Road.

There is also a safety benefit to constructing the Richmond Road interchange. It would be difficult to maintain Sarcee Trail & Richmond Road as an at-grade intersection due to the proximity to the interchange at Glenmore Trail & Sarcee Trail. There would be challenges for effective intersection operation in this confined space where a number of the Glenmore Tr/Sarcee Tr interchange ramps tie in.

Environmental

Administration has worked with AT over the past several months to identify and help mitigate environmental questions, comments and concerns with respect to the ring road. This work has progressed and has addressed many of these questions and concerns, and Administration continues to work with AT on these issues. The City will follow existing policies and standards in evaluation, design, and construction of ring road connections and downstream improvements.

With respect to downstream traffic impacts, greenhouse gas emissions have been estimated for the different Sarcee Trail mitigation scenarios. These are summarized in Appendix 3.

All downstream traffic impact mitigation options have included and/or will include an evaluation of the changes with respect to active modes. For example, mitigation measures such as a traffic signal at Southland Drive & Oakfield Drive SW will improve safety for pedestrians crossing new roadways at this location. Throughout the downstream traffic impacts review, active modes were an important consideration, and in many cases active modes were the primary consideration in proposing the improvement. The ring road connection projects have also included active mode facilities as an integral part of the designs. This includes elements such as new multi-use pathways and connected sidewalk and pathway facilities to ensure continuity with the existing network as well as to tie in to new ring road crossing locations.

Economic (External)

Additional goods movement and mobility options will be available when this project is complete, which will enhance business and traveller movement through and around Calgary and can offer support to smart growth initiatives and investments.

A cost benefit analysis of the various potential mitigation options for the Sarcee Trail corridor area has been developed, consistent with Investing in Mobility assessment tools. The results are included in Attachment 3. The results indicate that the option which includes an interchange

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at Sarcee Tr/Richmond Road and a lane reversal on Bow Trail provides the most cost effective long term solution to address the anticipated downstream traffic impacts of the SWRR.

Financial Capacity

Current and Future Operating Budget:

No implications as a result of this report.

Current and Future Capital Budget:

Funding for the Ring Road Connections has been identified in the amount of \$133M in Program 543. \$114M of this will come from Fuel Tax Revenue Sharing and \$19M from Transportation Acreage Assessment.

The cost for the Sarcee Trail & Richmond Road interchange and the potential lane reversal on Bow Trail between Sarcee Trail & 37 Street SW is expected to amount to \$70-80M and is currently unfunded. Therefore, no changes to Action Plan are required at this time. The project will be prioritized under Goods Movement in the Investing in Mobility plan update for 2018, and will likely be a higher-priority candidate.

Risk Assessment

This investigation of the downstream implications of the WRR and SWRR sections has helped to ensure that City infrastructure priorities are evaluated and assessed in a comprehensive manner.

The addition of the ring road infrastructure will change some of the travel patterns within the City. Administration has identified a limited number of locations which will require mitigation, and the remaining locations are expected to continue to function appropriately once the SWRR is in place. The downstream implications assessment allowed The City to identify the locations at risk, and develop recommendations for improvements including funding opportunities and options to mitigate the potential impacts.

REASONS FOR RECOMMENDATIONS:

1. A comprehensive review of downstream traffic impacts as a result of the SWRR and WRR has been completed.
2. The recommendations are a reflection of that review, and provide a holistic strategy to address the anticipated changes to traffic patterns on the City road network when the SWRR and WRR are in place. They balance the need to protect the quality of life in communities with the need to provide excellent mobility for Calgarians to travel to live, work, and play.
3. There is a continued need to work with The Province to advance the completion of the WRR in order to alleviate the need for additional investment in infrastructure along Sarcee Trail SW.

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ATTACHMENTS

- Attachment 1: Ring Road Connections
- Attachment 2: Downstream Traffic Impacts Analysis Results
- Attachment 3: Sarcee Trail Scenarios and Analysis