

Sarcee Trail and Richmond Road Interchange Functional Planning Study

EXECUTIVE SUMMARY

This report outlines the recommendations of the Sarcee Trail and Richmond Road Interchange Functional Planning Study completed by ISL Engineering and Land Services Ltd. A summary of the study that identifies the recommended interchange plan and the public engagement program undertaken as part of this study is included in Attachment 1.

The recommendations from the study, if approved, will inform the next corporate capital infrastructure investment plan prioritization process (formerly Investing in Mobility), with anticipation that the interchange will be included as a candidate project for funding. As the Southwest Calgary Ring Road (SWCRR) is scheduled to open by Fall 2021, an approved and updated plan will allow administration to evaluate the option to design and construct the interchange in coordination with the SWCRR project, should the project be funded in the next capital infrastructure investment plan.

ADMINISTRATION RECOMMENDATION:

That the SPC on Transportation and Transit recommends that Council:

1. Approve the Executive Summary for the Sarcee Trail and Richmond Road Interchange Functional Planning Study including the recommended interchange plan as summarized on Exhibits ES-5 and ES-6 of Attachment 1; and
2. Direct Administration to include the recommended interchange plan as summarized on Exhibits ES-5 and ES-6 of Attachment 1 as a candidate project for evaluation within the next update of the Transportation Infrastructure Investment Plan (TIIP) prioritization process.

RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2018 FEBRUARY 08:

That the Administration Recommendations contained in Report TT2017-0079 be approved.

Opposition to Recommendations:
Against: Councillor Woolley

PREVIOUS COUNCIL DIRECTION / POLICY

At the 2016 September 21 Meeting of Council, Council adopted the recommendation from the Sarcee Trail and Richmond Road Interchange Functional Planning Study – Project Update (TT2016-0757): “Direct Administration to report back to the SPC on Transportation and Transit no later than Q1 2018, with recommendations of the functional planning study including cost estimates and land requirements, if any.”

On 2015 December 7, Council adopted recommendations from the West and Southwest Ring Road Downstream Traffic Impacts (TT2015-0828), including: “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

Sarcee Trail and Richmond Road Interchange Functional Planning Study

SPC on Transportation and Transit on functional planning, local area improvements and next steps.”

BACKGROUND

Construction of the SWCRR has commenced with anticipated completion in Fall 2021. The timing of the West Calgary Ring Road (WCRR) from Highway 8 to the Trans-Canada Highway is still unknown. An interchange at Sarcee Trail and Richmond Road is part of The City’s long-term network plan. The Sarcee Trail and Richmond Road Interchange Functional Planning Study was initiated as an outcome of the previous study, West and Southwest Ring Road Downstream Traffic Impacts (DSTI). The DSTI study identified an interchange at Sarcee Trail and Richmond Road would provide significant benefits to the transportation network in the short and long term once the SWCRR opens, regardless of the WCRR timing.

In 2008, The City completed the Sarcee Trail Corridor Study that included an interchange plan at Sarcee Trail and Richmond Road (Figure ES.2 in Attachment 1). The corridor study was completed prior to the approval of the 2009 Calgary Transportation Plan (CTP) and prior to the update of the SWCRR functional planning study in 2013. A subsequent review of the 2008 interchange plan revealed challenges with the tie-in for Sarcee Trail to the SWCRR at Glenmore Trail.

An update to the previous 2008 interchange plan is required to determine access to adjacent properties, protect the right-of-way (ROW), and ensure proper tie-in to the new Glenmore Trail and Sarcee Trail interchange which will be constructed as part of the SWCRR project. There is also a need to ensure the interchange plans align with the long-term vision and principles as identified in the CTP while meeting Alberta Transportation standards within the Transportation Utility Corridor (TUC).

The interchange project is currently unfunded but will be included as a candidate project for evaluation and prioritization in the scheduled 2018 update of the 10-year Transportation Infrastructure Investment Plan (TIIP). An updated functional plan would allow the project to be considered for capital funding and construction over the period 2019-2021, in coordination with construction of the SWCRR.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

Sarcee Trail is a north-south skeletal road, and is part of the ultimate High Occupancy Vehicle (HOV) network serving communities in southwest Calgary. It is an alternate route to Crowchild Trail connecting 16 Avenue North (Trans-Canada Highway) and Glenmore Trail (Highway 8). As identified in the CTP, Richmond Road is classified as an Arterial street west of Sarcee Trail and a Neighbourhood Boulevard east of Sarcee Trail. Richmond Road is part of the Primary Cycling Network and Primary Transit Network.

Traffic analysis was completed using the 30-year (2048) forecast traffic volumes to test the suitability of design options. The 10-year (2024) forecast traffic volumes, with assumptions that the SWCRR is open but without the WCRR in place, were compared to ensure that the 2048 horizon traffic analysis results would govern. The 2048 forecast volumes assumed full build-out of the Westhills and Signal Hill shopping centres, a new daycare in London Place West Shopping Centre and the proposed Tsuut’ina Park developments.

Sarcee Trail and Richmond Road Interchange Functional Planning Study

Based on the traffic volumes and design features, seven preliminary interchange concepts were generated and assessed. Three short-listed interchange concepts were further developed and evaluated in detail based on a Triple Bottom Line approach that considered economic, social and environmental categories. Public and City stakeholder priorities and input were incorporated in the evaluation process to arrive at a recommended plan.

The number one public-ranked priority identified in the engagement process was vehicle accommodation in general. As such, traffic operation performance was evaluated in detail for each of the three short-listed interchange concepts. The results showed that while traffic operations differed between the interchange concepts, traffic volumes on Richmond Road beyond the interchange area were similar in all three concepts.

The Hybrid Parclo A interchange is recommended as the preferred alternative, as shown in Figure ES.4 in Attachment 1. The Hybrid Parclo A interchange concept ranked the best in the “Public - High Ranked Priority” evaluation criteria which included vehicle accommodation, community access, and shopping and business access. It also had the least number of evaluation criteria ranked as “least favourable”, and performed well in the “Public - Lower Ranked Priority” areas. Generally, the Hybrid Parclo A concept is a well-balanced solution that combines the best aspects of other concepts considered.

The Recommended Ultimate Plan is a Hybrid Parclo A interchange with diamond ramps in the northbound direction and single Parclo loop ramp in the NW quadrant as shown on Exhibits ES-5 and ES-6 in Attachment 1. The Recommended Ultimate Plan is designed to achieve proper tie-ins to both initial and ultimate configurations of the SWCRR. Some key features and benefits of the interchange include:

- Removal of at-grade intersection at Richmond Road allows for free-flow conditions along Sarcee Trail from Glenmore Trail to Bow Trail that will accommodate long term traffic volumes, and addresses safety and operational concerns due to proximity of the intersection to the SWCRR;
- Bridge structure carrying Richmond Road over Sarcee Trail allows for relatively flat grades along both Sarcee Trail and Richmond Trail. Sarcee Trail mainline is depressed to reduce noise impacts and matches current SWCRR design;
- Direct access to Signal Hill Shopping Centre is maintained from southbound Sarcee Trail, with additional measures to improve safety and road operations, and enhance transit access;
- Elimination of one traffic signal at the existing Sarcee Trail and Richmond Road junction improves weaving along Richmond Road in the interchange area;
- 4 m wide multi-use pathways on both sides of Richmond Road provide high quality connections to the shopping centres and to the Rotary/Mattamy Greenway, which is a network of parks and pathways that encircles the city;
- Transit queue jumps and signal priority measures at multiple locations to improve transit service and reliability;
- No property impact outside of City-owned land or existing right-of-way/TUC; no land acquisition is required;
- Travel time savings and overall reduction of greenhouse gas emissions from vehicles; and
- Reduction of short-cutting traffic through surrounding communities by encouraging use of Sarcee Trail.

Sarcee Trail and Richmond Road Interchange Functional Planning Study

A Class 4 cost estimate was conducted with quantifiable items including removals, grading, pavement, concrete, structures and utilities. The total cost for the Recommended Ultimate Plan has been estimated at approximately \$106 Million. Key considerations of the cost estimate included the realignment of Sarcee Trail to tie-in to the SWCRR, widening of Sarcee Trail to three core lanes from 26 Avenue SW to Glenmore Trail, two bridge structures and retaining walls, and relocation of major utilities including several ENMAX and AltaLink transmission towers.

Stakeholder Engagement, Research and Communication

Public stakeholders engaged included Community Associations, commercial property owners, and tenants on City-owned property in addition to the general public during Public Open Houses, Public Information Sessions and using The City's online Engage portal.

Public Stakeholder Engagement included two public open houses held in November 2016. Members of the public had an opportunity to learn about the project, and provide their feedback regarding the study and the short-listed interchange concepts. Approximately 300 people attended the two open houses. Information and opportunities for input were included on The City's online Engage portal following these open houses. Key outcomes of this phase included the prioritization of evaluation criteria, an understanding of specific stakeholder concerns, and confirmation that stakeholders were generally in favour of the need for an interchange at Sarcee Trail and Richmond Road.

During the Draft Recommended Plan Report Back phase, two public information sessions were held in May 2017 with approximately 300 people in attendance. The purpose of these sessions was to provide members of the public with an overview of the proposed recommended plan for the interchange, provide information regarding how input from the previous open houses impacted the proposed design, and gather feedback on any final issues or concerns. Information and opportunities for input were included on The City's online Engage portal following these information sessions. Key outcomes of this phase included confirmation that stakeholders, including the community associations, are generally supportive of the recommended plan. A letter of support from the Glamorgan Community Association is included in Attachment 2.

In addition to public stakeholders, City business units were engaged throughout the project. Key outcomes from Internal Stakeholder Engagement included confirmation of the recommended interchange concept, and implementation of pathway and transit enhancements and geometric design elements.

Alberta Transportation and their consultant (owner's engineer for the SWCRR) were engaged to coordinate the interchange design with the Glenmore Trail and Sarcee Trail interchange. At the time of this study, the SWCRR was in the design phase of P3 implementation. Additional review of the tie-in with the finalized SWCRR plans will be required when the interchange project moves on to detailed design.

Strategic Alignment

This study aligns with multiple policies in the CTP, MDP and the 2020 Sustainability Direction including:

Sarcee Trail and Richmond Road Interchange Functional Planning Study

- CTP Goal 1: Align transportation goals and infrastructure investment with city and regional land use directions and implementation strategies;
- CTP Goal 2: Promote safety for all transportation system users;
- CTP Goal 5: Promote economic development by ensuring the efficient movement of workers and goods;
- CTP Policy 3.1: Maintain automobile, commercial goods and emergency vehicle mobility in Calgary while placing increased emphasis on sustainable modes of transportation (walking, cycling, and transit); and
- Sustainability Principle for Land Use and Mobility 4: Provide a variety of transportation options

Social, Environmental, Economic (External)

This report has been reviewed for alignment with The City of Calgary's Triple Bottom Line (TBL) Policy Framework. The following implications were identified:

Social: Community traffic impact, facilitation of active modes and transit, and improvements to connectivity of adjacent communities and commercial/business areas were key considerations of the study. The proposed recommended plan has been developed to support transit, active modes and recommended land uses. Free-flow conditions on Sarcee Trail alleviate safety and operational challenges, and encourage use of Sarcee Trail, thereby improving community/business access in the area and reducing cut-through traffic on adjacent community roads.

Environmental: Provision of a 4 m regional multi-use pathway on both sides of Richmond Road encourages alternate modes of transportation by providing a high level of safety and comfort for pedestrians and cyclists connecting to the commercial areas and the Greenway. Transit priority measures at multiple locations are also identified which will improve transit operations in the area. The recommended interchange is estimated to reduce travel delay by over 60% within the interchange study area in both 2024 and over a 30-year period. These travel time savings translate to a reduction in greenhouse gas emissions by more than 50% within the study area, and a 0.04% city-wide reduction when compared to a no-build scenario.

Economic (External): The proposed recommendations have been developed to provide for the efficient movement of goods and services, and to accommodate commercial access. The interchange design was developed to support mixed-use intensification of adjacent commercial sites, including the proposed Tsuut'ina Nation developments. The recommended plan was developed with great effort to maintain and/or improve existing access to adjacent commercial properties and activity centres.

Financial Capacity

Current and Future Operating Budget:

There are no current or future operating budget impacts associated with this report. However, future operating budgets would require incremental increases as a result of the additional infrastructure investments outlined in this report, should future capital be allocated to this project.

Sarcee Trail and Richmond Road Interchange Functional Planning Study

Current and Future Capital Budget:

There are no current capital budget impacts associated with this report. A Class 4 construction cost estimate prepared as part of the functional planning study estimates the interchange cost to be \$106M. The recommendations from the study, once approved, will inform the next corporate capital investment plan prioritization process with anticipation that the interchange will be included as a candidate project.

The available road right-of-way (ROW) and City-owned land provide sufficient area for the recommended interchange plan, and no additional land is required. The City has a lease agreement in the NW quadrant of the intersection of Sarcee Trail and Richmond Road with a third party who operates a gas station (with associated car wash and convenience store). These lands are not readily available for construction, and the City would need to evaluate potential opportunities, implications and cost significances in the event funding becomes available.

Risk Assessment

An interchange at this location is anticipated to benefit overall mobility and safety, and assist in mitigating some of the downstream traffic impacts of the SWCRR regardless of the WCRR timing. Should the project be funded in the next budget cycle, design and construction of the interchange can potentially be advanced over the period 2019-2021 to coincide with construction of the SWCRR.

REASON(S) FOR RECOMMENDATION(S):

The recommended interchange plan addresses the deficiencies in the previous plan to tie in with the current SWCRR plans, and is a balanced plan that will effectively accommodate long-term demand, provide enhanced active mode connectivity, and minimize impact to surrounding communities and businesses.

ATTACHMENT(S)

1. Attachment 1 – Sarcee Trail/Richmond Road Interchange FPS Executive Summary
2. Attachment 2 – Letter of Support – Glamorgan Community Association