



AGENDA

SPC ON TRANSPORTATION AND TRANSIT

July 19, 2018, 9:30 AM
IN THE COUNCIL CHAMBER
Members

Councillor S. Keating, Chair
Councillor J. Gondek, Vice-Chair
Councillor G. Chahal
Councillor S. Chu
Councillor J. Davison
Councillor J. Farkas
Councillor E. Woolley
Mayor N. Nenshi, Ex-Officio

1. CALL TO ORDER
2. OPENING REMARKS
3. CONFIRMATION OF AGENDA
4. CONFIRMATION OF MINUTES
 - 4.1 Minutes of the Regular Meeting of the SPC on Transportation and Transit, 2018 June 07
5. CONSENT AGENDA
6. POSTPONED REPORTS
(including related/supplemental reports)

None
7. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES
 - 7.1 National Trade Corridors Fund – Airport Trail Phase 2, TT2018-0856
 - 7.2 South Shaganappi Study Report, TT2018-0822
 - 7.3 Glenmore Trail East Functional Planning Study, TT2018-0827

8. ITEMS DIRECTLY TO COMMITTEE

8.1 REFERRED REPORTS

8.1.1 Bus Rapid Transit Network Marketing Strategy (PFC2018-0776), TT2018-0905

8.2 NOTICE(S) OF MOTION
None

9. URGENT BUSINESS

10. CONFIDENTIAL ITEMS

10.1 ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

10.2 URGENT BUSINESS

11. ADJOURNMENT



MINUTES

SPC ON TRANSPORTATION AND TRANSIT

**June 7, 2018, 9:30 AM
IN THE COUNCIL CHAMBER**

PRESENT: Councillor J. Gondek, Chair
Councillor S. Keating, Chair
Councillor G. Chahal, Acting Vice-Chair
Councillor S. Chu
Councillor J. Davison
Councillor J. Farkas
Councillor E. Woolley
*Councillor D. Farrell

ALSO PRESENT: General Manager M. Thompson
Acting City Clerk D. Williams
Legislative Assistant D. Ford

1. CALL TO ORDER

Councillor Gondek called the Meeting to order at 9:31 a.m.

2. OPENING REMARKS

Councillor Chahal was elected, by acclamation, as Acting Vice-Chair of the 2018 June 07 Regular Meeting of the SPC on Transportation and Transit.

Councillor Davison acknowledged today, 2018 June 07, as Alberta Motor Association (AMA) School Safety Patrol Day in Calgary.

3. CONFIRMATION OF AGENDA

Moved by Councillor Davison

That the Agenda for the 2018 June 07 Regular Meeting of the SPC on Transportation and Transit be confirmed.

MOTION CARRIED

4. CONFIRMATION OF MINUTES

4.1 Minutes of the Regular Meeting of the SPC on Transportation and Transit, 2018 May 03

Moved by Councillor Farkas

That the Minutes from the Regular Meeting of the SPC on Transportation and Transit, 2018 May 03, be confirmed.

MOTION CARRIED

5. CONSENT AGENDA

Moved by Councillor Farkas

That the Committee Recommendations contained in the following Reports be adopted in an omnibus motion:

- 5.1 Albert Park Radisson Heights Community Lands Parking Solution, TT2018-0557
- 5.2 Hyperloop Development and Testing in Calgary – Deferral Request, TT2018-0629
- 5.3 Status of Outstanding Motions, TT2018-0713

MOTION CARRIED

6. POSTPONED REPORTS

(including related/supplemental reports)

None

7. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

- 7.1 Improving Accessibility and Reducing Injuries through Snow and Ice Control, TT2018-0467

Distributions with respect to Report TT2018-0467:

- a PowerPoint presentation entitled "Improving Accessibility and Reducing Injuries through Snow and Ice Control", dated 2018 June 07;
- a letter from Brad Krizan, Downtown Calgary;
- a letter from Terry Wong, Chinatown District BIA, dated 2018 June 06;
- a letter from Colleen Huston, Disability Action Hall dated 2018 June 07;
- a letter from Agustin Louro, Bike Calgary, dated 2018 June 05;
- an email from Mary Salvani, dated 2018 June 06;
- a document from Lois Kelly, entitled "Snow and Ice Stories, Collected by seniors living in the East Village";
- a letter from the Bridgeland Forever Young Seniors Group, dated 2018 June 07;
- a letter from Ian T. McCabe, dated 2018 June 07;
- a letter from Annie MacInnis, Kensington Business Revitalization Zone, dated 2018 June 06;
- a letter from Melodie Lindsay, Manchester Community Group Chair, dated 2018 June 06; and
- a letter from Sarelle Azuelos, Women's Centre of Calgary, dated 2018 June 07.

Received for the Corporate Record, with respect to Report TT2018-0467:

- speaking notes from Barry Pendergast; and
- a letter from Celia Lee, Sustainable Calgary, dated 2018 June 07.

Speakers

1. Lois Kelly
2. Lauri Brunner
3. Ned Shillington
4. Brad Robertson
5. Mary Salvani
6. Ellen McGregor
7. Danny Antoine
8. Lloyd Thornhill
9. Joseph Portincasa
10. John Miller
11. Ian McCabe
12. Annie MacInnis
13. Terry Wong
14. Gie Roberts
15. Frank Anderson
16. Sarelle Azuelos
17. Susan High
18. Celia Lee
19. Barry Pendergast
20. D'Arcy Walsh
21. Larry Heather
22. Darren Taylor
23. Colleen Huston
24. Adriana De Lauw

Committee recessed at 12:00 p.m. and reconvened at 1:05 p.m. with Councillor Gondek in the Chair.

Councillor Gondek acknowledged members of the Calgary Transit Advisory Group, in attendance in the public gallery, and thanked them for their service to this Committee.

Moved by Councillor Chu

Subject to Section 6(1) of Procedure Bylaw 35M2017, Sections 77(c) and 109 be suspended, to allow Members additional time for questions to Administration and debate.

Against: Councillor Woolley

MOTION CARRIED

Moved by Councillor Farrell

That with respect to Report TT2018-0467, Recommendations 1, 3, 4, 5 and 6, be approved, **after amendment:**

1. File the Administration Recommendation contained in Report TT2018-0467.

3. Develop a funding strategy for the One Calgary 2019 to 2022 budget to further enhance service including the development of high priority pedestrian networks.

4. Prepare amendments to the Street Bylaw 20M88 to:

(a) Add minimum and specified penalties for offences related to owners or occupants failing to remove ice and snow from the required portion of the sidewalk or pathway within 24 hours after ice and snow has been deposited;

(b) Create an escalating fine schedule for offences indicated in subsection (1), that would increase the minimum and specified penalties for any second or third offence occurring within a 12-month period;

(c) Require owners or occupants of a private parcel of land adjacent to a sidewalk or pathway, where the sidewalk or pathway contains a curb cut or crosses a laneway, responsible for the removal of snow and ice on the sidewalk that crosses the laneway, proportionate to any other private parcel of land that is adjacent to same sidewalk; and

(d) Report back to Council on July 30 with respect to the Bylaw.

5. Organize an advisory panel that includes business improvement areas, accessibility groups, seniors, public health providers, and other stakeholders for feedback and continual improvement.

6. Direct Administration to provide Council with additional detail on the snow and ice control options related to the high-priority network that could be achieved this 2018/2019 winter season. This information would be made available to Council on 2018 June 25.

And further, that the distributions and documents received for the Corporate Record, from today's Meeting, be attached to the Report prior to being forwarded to Council.

MOTION CARRIED

Moved by Councillor Farrell

That with respect to Report TT2018-0467, Recommendations 2 be approved, as follows:

2. Direct Administration to enhance the one-time budget commitment from the Fiscal Stability Reserve through the One Calgary process for the 2018-2019 SNIC season:

E) Provide SNIC services to additional 100 km of pathway - \$0.5-1 million (operating)

Clear all sidewalks adjacent to City property within 24 hours - \$3-5 million (operating)

Plow windrows away from high priority wheelchair ramp locations. - \$2-3 million (operating).

Against: Councillor Woolley

MOTION CARRIED

7.2 RouteAhead Update, TT2018-0617

A document containing revisions to Attachment 1 and a PowerPoint presentation entitled "RouteAhead Update", dated 2018 June 07, was distributed with respect to Report TT2018-0617.

Moved by Councillor Woolley

That with respect to Report TT2018-0617, the following be approved:

That the SPC on Transportation & Transit recommend that Council:

1. Direct Administration to use the attached Fare and Revenue Framework in the development of transit fares as part of One Calgary 2019-2022.
2. Direct Administration to use the attached prioritization framework for major transit growth projects, and provide an update to Council through the SPC on Transportation & Transit by Q1 2019.

MOTION CARRIED

7.3 Complete Streets Policy and Residential Street Design Policy – Three Year Update, TT2018-0628

Distributions with respect to Report TT2018-0628:

- a PowerPoint presentation entitled "Complete Streets Policy and Residential Street Design Policy - Three Year Update" dated 2018 June 07; and
- a letter from Beverly Jarvis, BILD Calgary Region, dated 2018 June 07.

Speakers

1. Beverly Jarvis
2. Agustin Louro

Moved by Councillor Farkas

That with respect to Report TT2018-0628, the following be approved, **after amendment**:

That the SPC on Transportation and Transit recommends that Council direct Administration to report back to Council no later than Q4 ~~2019~~ on the effectiveness and implementation of the policies.

MOTION CARRIED

8. ITEMS DIRECTLY TO COMMITTEE

8.1 REFERRED REPORTS

None

8.2 NOTICE(S) OF MOTION

None

9. URGENT BUSINESS

None

10. CONFIDENTIAL ITEMS

10.1 ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

None

10.2 URGENT BUSINESS

None

11. ADJOURNMENT

Moved by Councillor Chu

That this meeting adjourn at 2:28 p.m.

MOTION CARRIED

The following Reports have been forwarded to the 2018 June 25 Regular Meeting of Council:

Consent:

Albert Park Radisson Heights Community Lands Parking Solution, TT2018-0557

Hyperloop Development and Testing in Calgary – Deferral Request, TT2018-0629

Improving Accessibility and Reducing Injuries through Snow and Ice Control, TT2018-0467

RouteAhead Update, TT2018-0617

Complete Streets Policy and Residential Street Design Policy – Three Year Update, TT2018-0628

The next Regular Meeting of the SPC on Transportation and Transit is scheduled to be held, 2018 July 19.

CONFIRMED BY COMMITTEE ON

CHAIR

ACTING CITY CLERK

UNCONFIRMED

National Trade Corridors Fund – Airport Trail Phase 2

EXECUTIVE SUMMARY

On July 6, 2018, the Federal Government announced a commitment of \$50 million towards funding Airport Trail – Phase 2 from the National Trade Corridors Fund. The project's scope includes an extension of Airport Trail from 36th St to 60th St, construction of two new grade separated interchanges at 19th St and Barlow Tr., and construction of a southbound to westbound ramp at Stoney Trail and Airport Trail. Additional funding was committed by The Government of Alberta (\$27.7 million). The Calgary Airport Authority will contribute \$20 million through a previous agreement with The City.

Airport Trail is planned as a vital east-west corridor in Calgary. The work under this project will complete the corridor from Deerfoot Trail to Stoney Trail, will support the unimpeded flow of goods and vehicles to and from the Airport, will support the growing logistics business around the Airport, and open up new areas for development in The City's growing northeast.

Approval for budget appropriation of the total project budget amount (\$153.35 million) is being requested at this time for an amount of \$38.15 million. This amount will allow administration to move forward with construction of the project and the outstanding land acquisition.

ADMINISTRATION RECOMMENDATION:

That the SPC on Transportation and Transit recommend that Council:

1. Approve the budget appropriation of \$153.35 million to Program 859 – Airport Trail N.E. Phase 2, as per Attachment 1.
2. Direct Administration to secure the remaining land needed for the interchanges on Airport Trail at 19th Street and Barlow Trail.
3. Keep Attachment 1 and the closed session discussions confidential pursuant to Sections 23, 24, and 25 of the *Freedom of Information and Protection of Privacy Act*.

PREVIOUS COUNCIL DIRECTION / POLICY

On 2014 May 26, Council reviewed the 2015-2024 Investing in Mobility Transportation Capital Plan (TT2014-0308), with the following directions.

1. "Approve the funded and unfunded transportation infrastructure lists outlined in Attachment 2;
2. Direct Administration to use Attachment 2 as the basis for developing the Transportation Department's capital budget for Action Plan 2015-2018"

The Airport Trail Phase 2 Corridor Project was included unfunded transportation infrastructure project list approved by Council.

On 2017 April 10, Council reviewed Report TT2017-0168 and agreed to

1. "Approve the Review and Update of the 2012 Airport Trail Functional Planning Study, including the cost estimate and recommendations as summarized in Attachment 1;
2. Direct Administration to acquire, on an opportunity base, the required right-of-way as shown on page 13 in Attachment 1; and

National Trade Corridors Fund - Airport Trail Phase 2

3. Direct Administration to continue to evaluate the Stage 2 Airport Trail Interchanges at 19 St NE and Barlow Trail NE as candidate projects within Investing in Mobility.”

On 2017 July 24 Council reviewed Report C2017-0614 and agreed to “approve the Airport Trail corridor project for submission to the National Trade Corridors Fund”.

BACKGROUND

Airport Trail serves as a key corridor in Calgary’s northeast communities, connecting Deerfoot Trail to Stoney Trail through the Airport Trail Tunnel. It is a key ‘Primary Goods Movement’ and ‘Primary Transit’ corridor and improves access in and out of the Calgary International Airport and adjacent lands.

The Airport Trail Tunnel, which opened in May 2014, was constructed as the first phase of this vital East – West Corridor within Calgary. The timing of the Airport Trail Tunnel construction coincided with the Airport’s new Runway, in order to reduce ultimate construction costs. The Airport Trail Tunnel Agreement, signed by The City and the Calgary Airport Authority, tied completion of the Corridor with the two new Interchanges at 19th St and Barlow Tr. Phase 2 construction completes the Corridor link.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

At the 2014 June 23 Regular Meeting of Council, Council directed Administration to submit the Airport Trail Phase 2 corridor project as part of a Goods Movement Improvement Package to the Government of Canada for funding consideration as part of the Building Canada Fund – National Infrastructure Component (BCF-NIC) program. Administration proceeded with the submission, which included the Airport Trail project as well as the Trans-Canada Highway / Bowfort Road Interchange and Glenmore Trail / Ogden Road Interchange projects. The application was unsuccessful. However, since that period, there have been ongoing, informal discussions on potential federal funding for the Airport Trail project. On November 6, 2017, the Airport Trail Phase 2 Project was submitted for formal consideration under the first round of National Trade Corridor Fund grant program; the submission was successful, and on July 6, 2018, the Federal Government announced a commitment of \$50 million.

With the recent federal funding approval for this project, the Government of Canada recognizes that the Airport Trail corridor project meets key NTCF evaluation criteria:

- Projects that align with regional priorities;
- Have approvals in place;
- Have secured funding; and
- Are ready to start in 2018.

The project is comprised of three main components which are at various stages of readiness to start construction as follows:

- Airport Trail, from 36th St to 60th St is designed and is tender-ready, permitting some construction to begin in 2018
- The Airport Trail interchanges at 19th St. and Barlow Tr. are entering into detailed design and tender preparation, and will be tendered for construction start in the spring of 2019
- The Stoney Trail southbound to Airport Trail westbound ramp will be designed in 2019 and tendered for constructed in 2020

National Trade Corridors Fund - Airport Trail Phase 2

All three components of the project have been designed with the ultimate LRT and Transit needs of the area taken into consideration.

Land acquisition needs have been identified, and discussions are ongoing with the landowner.

Stakeholder Engagement, Research and Communication

The Calgary Airport Authority is the primary Stakeholder and has participated as a 50/50 partner in both the original Airport Trail Functional Plan (2012), and the Airport Trail Functional Plan Update (2017). They have also committed \$20 million and half the needed land costs towards the cost of the interchanges.

Land is needed for the two interchanges. Engagement occurred during the initial Airport Trail Functional Plan and Airport Trail Functional Plan Update reports. Negotiations continue with adjacent land owners for land purchase. In July 2017, Council provided approval to proceed to expropriation if talks for the negotiated land purchase break down.

Strategic Alignment

This project is aligned with City priorities providing a City that moves, supporting Transportation and Transit, and supporting an Inland Port and Logistics District centered around the Airport.

Social, Environmental, Economic (External)

Social

Social benefits include providing a direct goods and transportation movement between Deerfoot Trail and Stoney Trail, improving goods and transportation movement to and from the Calgary Airport, supporting adjacent commercial development in the vicinity of the airport and along the Airport Trail corridor, and provides additional City fibre optic network redundancy.

Environmental

Environmental benefits include a reduction in Calgary's ecologic footprint, reducing vehicle emissions by eliminating delays at existing traffic signals at 19th St and Barlow trail, and reducing travel time for vehicle trips to and from The City's northeast communities.

Economic

Economic benefits include stimulating investment in the vicinity of the Airport and along the corridor between Deerfoot Trail and Stoney Trail; leveraging the previous investment in the Airport Trail Tunnel and providing the planned transportation and transit connections; stimulating job growth with the addition of an expected 406 construction jobs; and facilitating the movement of goods and services.

Financial Capacity

Current and Future Operating Budget:

Roads have been contacted to confirm operating and maintenance requirements for the new infrastructure. The following annual operational budget needs were identified in future budgets:

Bridge Structures - \$16,000 per bridge for a total of \$32,000

National Trade Corridors Fund - Airport Trail Phase 2

Roadways - \$9,500 per lane-km, for a total of \$92,340

Total annual operating costs of \$124,340 have been identified.

Current and Future Capital Budget:

The total project cost estimate is \$153.35 million, (refer to Attachment 1).

The City portion would be funded by existing corporate capacity identified in Report TT2017-0214 and will have no net impact on the tax rate.

Risk Assessment

The project has not been tendered and there are always construction pricing risks. The Calgary area construction market is still delivering competitive tender-pricing but delays to the project will potentially increase construction costs, as the economy strengthens.

Discussions are underway with the landowner for land needed for the Interchanges. There are risks to the schedule and budget when the land acquisition has not been completed.

REASON(S) FOR RECOMMENDATION(S):

The funding commitment from the Federal and Provincial Governments provides The City and our key partner, the Calgary Airport Authority, with the financial stimulus required to complete a key East – West Corridor in The City of Calgary. This investment will promote mobility and stimulate future commercial and residential investment in proximity to the Airport and the city's northeast.

ATTACHMENT(S)

1. Attachment - Airport Trail Phase 2 – Funding Source (confidential)

**Transportation Report to
SPC on Transportation and Transit
2018 July 19**

**ISC: UNRESTRICTED
TT2018-0822
Page 1 of 8**

South Shaganappi Study Report

EXECUTIVE SUMMARY

This report provides a summary of the South Shaganappi Study which includes the 16 Avenue N and Shaganappi Trail interchange, the Shaganappi Trail and Memorial Drive intersection and Memorial Drive and Bowness Road interchange. The study was warranted by the re-classification of Shaganappi Trail south of Crowchild Trail N from a Skeletal Road to an Arterial Street in the 2009 Calgary Transportation Plan (CTP).

The primary focus of Corridor Studies is to generate concepts that can be potentially implemented in 20 to 30 years and beyond. Developing concepts for infrastructure ahead of time helps to ensure land is protected for future infrastructure if needed or releasing land if not required. Having an approved concept also helps to achieve a land use vision for the area that complements the transportation vision.

The South Shaganappi Study has incorporated public engagement as a critical part of the study, following the Corridor Study Policy approved by Council in 2014. Working with residents of adjacent communities, local community associations, and key stakeholders, the study team has developed short-term and long-term concept plans for transportation infrastructure in the study area.

Concepts including a do-nothing option, a tight diamond interchange, a hybrid version with signals, an east-west couplet configuration, and at-grade intersections were evaluated for the long-term scenario. The Tight Urban Diamond interchange emerged as the preferred concept based on stakeholder input, safety, access and connectivity, multi-modal transportation, efficient traffic flow, land enhancement and financial capacity. A Class 5 cost estimate of the preferred concept is approximately \$105 million dollars. The recommended long-term plan will accommodate all turns between 16 Avenue N and Shaganappi Trail at a single intersection unlike the existing infrastructure which utilizes ramps at Bowness Road to make movements from the west. The recommended long-term plan also enables multimodal connectivity and minimizes the land requirement for transportation. The timeline for implementation is beyond 30 years.

A recommended short-term plan will improve the multimodal transportation experience for Calgarians while balancing community priorities and addressing community concerns. The recommended short-term plan includes minor modifications and additions to the existing infrastructure. A Class 5 estimate of the recommended short-term plan is approximately \$3.8 Million dollars (2018). The recommended short-term plan can be implemented within the next 5 years as funding becomes available.

South Shaganappi Study Report

ADMINISTRATION RECOMMENDATION:

That the SPC of Transportation and Transit recommends that council:

1. Approve the South Shaganappi Study report and the recommended short-term and long-term plans, as shown in Attachments 2 and 3.
2. Direct Administration to include the recommended short-term plan in the One Calgary Capital Budget process for the fall of 2018.

PREVIOUS COUNCIL DIRECTION / POLICY

On September 28, 2009, City Council approved a new Municipal Development Plan (MDP) and Calgary Transportation Plan (CTP) that were created through the Plan It Calgary process. Within the CTP, Shaganappi Trail south of Crowchild Trail N was reclassified from a Skeletal Road to an Arterial Street. The CTP also confirmed that the Bow River crossing of Shaganappi Trail was no longer part of the future transportation network.

On July 25, 2011, City Council approved the South Shaganappi Communities Area Plan (M2011-008). This report recommended The City undertake a future corridor study for Shaganappi Trail to assess opportunities for enhancing walking, cycling, transit, High Occupancy Vehicles (HOV), green infrastructure, and future land uses as a result of the reclassification of Shaganappi Trail from a Skeletal road to an Arterial street.

On July 28, 2014 City Council adopted the Transportation Corridor Study Policy (TT2014-0400). The Transportation Corridor Study Policy helps ensure that corridor studies are conducted in a consistent, open and transparent manner, and that citizens are engaged appropriately throughout a collaborative and iterative process.

On February 9, 2015, City Council approved the Shaganappi Trail Corridor Study (TT2015-0099). At the onset of the study, the corridor review included the 16 Avenue / Bowness Road NW interchange. This area was removed from this study, in consideration of the feedback from community members and recognition of the value of completing a separate study in the future. To achieve this, and to complete the vision for the entire corridor, the South Shaganappi Study was initiated in 2015.

BACKGROUND

The South Shaganappi Study was initiated in the summer of 2015 and established a clear process for working with a diverse range of community stakeholders to determine the best means of addressing the challenges and opportunities associated with the area. The study area includes the 16 Avenue N and Shaganappi Trail interchange, the Shaganappi Trail and Memorial Drive intersection and Memorial Drive and Bowness Road interchange. The scope of the study included developing short-term and long-term transportation plans for the study area. Both short-term improvements and long-term concepts were developed in collaboration with stakeholders. The CTP identified Shaganappi Trail and Bowness Road as part of the Primary Transit Network and Primary Cycling Network. The CTP also identified Bowness Road as a Regional Multi-Use Pathway Route and 16 Avenue as a Primary Goods Movement Corridor.

The recommended short-term and long-term plans accommodate all modes of transportation and align the study area with the CTP.

South Shaganappi Study Report

Study Process

The study was divided into three primary phases running from Fall 2015 to Spring 2018 (Attachment 1):

Phase 1 **Project Initiation and Definition** focused on introducing the project to stakeholders and defining goals and objectives. A Community Advisory Group was formally established that included representatives from adjacent community associations and key stakeholders. This phase provided an opportunity to voice concerns, values, issues, and expectations for the study area.

Phase 2 **Concept Development and Analysis** focused on developing and evaluating short and long-term concepts for the study area. Workshops were held to generate ideas on potential improvements in the study area.

Phase 3 **Preferred Concept Selection** focused on selecting and refining the preferred short term and long-term concepts. Several opportunities were provided during this phase to gather feedback from all stakeholders. Concepts were further developed and finalized based on stakeholder feedback and detailed technical analysis.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

The goals of the study were:

1. Review and recommend infrastructure that aligns the future corridor plans for Shaganappi Trail with the 2009 Calgary Transportation Plan (CTP), the Municipal Development Plan (MDP) and adjacent land uses.
2. Identify what land may no longer be required for transportation infrastructure.

Community Values and Project Objectives

Through the robust stakeholder engagement process, the following community values were heard:

- Enhance safety for those who use and/or live in the study area
- Enhance accessibility across and throughout the corridor, reconnecting the adjacent communities of Montgomery and Parkdale/Point McKay
- Accommodate all modes of transportation including walking, cycling, driving, HOV (High Occupancy Vehicles) and transit
- Move people and goods in an efficient way, providing continuous traffic flow and a reduction in greenhouse gas emissions
- Preserve and enhance land within the study area and identify where there are opportunities for land repurposing

These community values were incorporated as project objectives for the purposes of concept evaluation and selection. Two additional objectives were incorporated by the project team as follows:

- Reflect the values and priorities of the community in concept development
- Develop a cost-effective concept

South Shaganappi Study Report

Long-Term Concept Idea Generation Process

The project team worked closely with adjacent community stakeholders, the Community Advisory Group and public stakeholders through design workshops to generate ideas for how transportation infrastructure could be reimaged within the study area over the next 30 years. Attendees developed several ideas for potential design changes and improvements in the area. 21 different concepts emerged from these ideas. To further refine the concepts, common design elements that attendees hoped to see were identified and incorporated to meet the project objectives.

Preliminary Long-Term Concepts

Incorporating the feedback from Calgarians, a total of 11 concepts, in addition to a do-nothing concept, were developed. The concepts were then evaluated against community values and objectives of the study. The four potential concepts listed below were advanced for feasibility review and evaluation along with the do-nothing concept:

1. At-Grade Intersections - This concept consists of new at-grade intersections on 16 Avenue at Bowness Road and Shaganappi Trail. All existing interchange ramps located at these junctions would be removed.
2. East-West Couplet - This concept consists of a reconfiguration of 16 Avenue into an east-west couplet with at-grade intersections at Bowness Road and Shaganappi Trail. Similar to concept 1, this concept would include closure of all existing interchange ramps, and the existing 16 Avenue roadway.
3. Hybrid - This concept realigns both Shaganappi Trail and Bowness Road, complete with new grade separated structures on 16 Avenue at Shaganappi Trail and Bowness Road. All existing interchange ramps would be closed, and a new two-way road connection would be constructed between 16 Avenue and Shaganappi Trail to provide all of the turning movements between Shaganappi Trail and 16 Avenue.
4. Tight Urban Diamond - This concept consists of a new Tight Urban Diamond Interchange providing all turn movements at the Shaganappi Trail and 16 Avenue intersection. The intersection of 16 Avenue and Bowness Road would be grade separated but no turning movements would be provided.
5. Do-Nothing - This concept retains all infrastructure within the Study Area as it currently exists.

Multiple Account Evaluation of Concepts

Each of the preliminary concepts were evaluated using the community values and project objectives described above. The results of the evaluation of preliminary concepts completed by Calgarians are shown in Figure 1. The Tight Urban Diamond interchange emerged as the preferred concept.

South Shaganappi Study Report

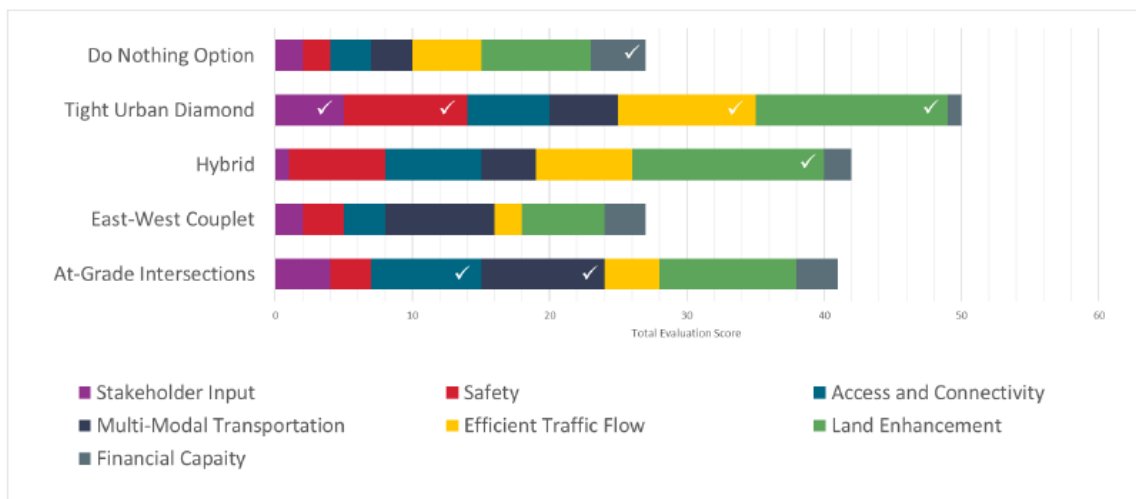


Figure 1: Multiple Account Evaluation of concepts

Preferred Long-Term Concept

The tight urban diamond interchange concept is the preferred long-term concept for the South Shaganappi Area. A Class 5, high level cost estimate for implementation is approximately \$104,200,000. The South Shaganappi Study Preferred Long Term Concept (Attachment 2) includes the following benefits:

- The concept will accommodate all turns between 16 Avenue N and Shaganappi Trail at a single intersection unlike the existing infrastructure which utilizes ramps at Bowness Road to make movements from the west. Enhances bicycle and pedestrian mobility and transit connectivity in the study area
- Minimizes land requirement for transportation
- Encourages through traffic to stay on 16 Avenue N, while discouraging neighborhood cut-through traffic

Recommended Short-Term Plan

Incorporating feedback from the Community Advisory Group, residents in the area and Calgarians, a short-term concept plan (Attachment 3) was developed to enhance safety, and to address concerns that were heard such as difficulty in making turning movements within the existing infrastructure and limited pedestrian and bicycle connectivity. Short-term investments can be implemented within the next 5 years as funding becomes available. The plan includes improvements to existing infrastructure as summarized below along with a Class 5 cost estimate:

- Constructing a new ramp and acceleration lane from southbound Shaganappi Trail to eastbound 16 Avenue (\$1,200,000)
- Installing a new traffic signal and dual lane entrance ramp to control northbound Bowness Road to Westbound 16 Avenue (\$650,000)
- Introducing connectivity enhancements along Bowness Road for people who walk and cycle (\$1,600,000)
- Realigning the ramp from eastbound 16 Avenue to Southbound Bowness Road (\$400,000)

South Shaganappi Study Report

For more information, the South Shaganappi Study Final Report is located on the City's webpage and can be accessed using the link: www.calgary.ca/southshaganappi

Stakeholder Engagement, Research and Communication

A thorough and participatory approach, as recommended by the Corridor Study Policy, was taken to develop, evaluate, and recommend the preferred short-term and long-term concepts for the South Shaganappi Study Area.

Priority throughout the study was building relationships with stakeholders and developing trust with the public. Engagement opportunities sought input from a wide range of people including residents and businesses in adjacent and surrounding communities, those who work in and/or commute through the study area, community associations and planning committees, special interest groups, institutions, and the general public. Targeted engagement with community members was held first to enable discussions with community members and the project team in a forum focused on their unique needs.

Throughout the study, the technical team was highly involved in the engagement process. Technical staff from a variety of backgrounds were on hand for all open house events to ensure stakeholders could ask questions and provide input about any aspect of the study. Technical staff also worked with stakeholders to help bring the community's ideas to life in design idea workshops. The core technical team was present at all engagement meetings and events to ensure stakeholder input was heard and brought back to the engineering table to directly inform design ideas and outcomes.

Communications

The communications strategy for the study focused on three main strategies:

1. Provide clear information about the study
2. Create a clear line of sight between public input and the outcomes of each phase
3. Widely promote public engagement opportunities

The engagement and communication activities undertaken as part of the project are summarized in Attachment 4 – South Shaganappi Study Engagement Summary Report.

Strategic Alignment

This study aligns with multiple policies in the CTP, Municipal Development Plan (MDP) and the 2020 Sustainability Direction including:

- 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 4: Transit, walking and cycling as preferred mobility choice for more people.
- MDP Policy 2.2.2.a: Increase development densities in proximity of Primary Transit.
- Sustainability Principle for Land Use and Mobility 2: Create walkable environments.
- Sustainability Principle for Land Use and Mobility 4: Provide a variety of transportation options.

South Shaganappi Study Report

Social, Environmental, Economic (External)

This report and recommendations included in this report were reviewed for alignment with The City of Calgary's Triple Bottom Line (TBL) Policy Framework. The following implications were identified.

Social

Developing a new transportation vision for the study area resulted in identifying land that may no longer be required for transportation infrastructure. A land repurposing exercise of the remnant land should be undertaken to enable vitality and opportunities for better connected communities.

Environmental

The proposed plan reconfirms that the Shaganappi Trail crossing of the Bow River is no longer required, protecting the environment and aquatic life. The concept also provides facilities for active modes thus encouraging environmentally friendly modes of travel.

Economic

The recommended short-term and long-term concepts support economic vitality and improve the movement of people, goods, and service in the area. The redevelopment of land no longer required to be protected for transportation infrastructure will support reinvestment in the adjacent communities.

Financial Capacity

Current and Future Operating Budget:

There are no immediate impacts to the current operating budget. Closer to the implementation of the plans in the future, any impacts to the operating budget will need to be identified.

Current and Future Capital Budget:

The short-term recommended plan, if approved will be included in One Calgary list of potential projects for funding.

Risk Assessment

If the short term recommended plan is not approved for funding during the One Calgary Budget Cycle for 2019-2022, there is a potential of losing community trust and support.

REASON(S) FOR RECOMMENDATION(S): The preferred concepts recommended in the Study for short-term and long-term implementation are a result of collaborative work between The City and Calgarians. The Study reinforces the importance and effectiveness of involving community and citizens in developing a vision for efficient and multimodal transportation infrastructure. The final recommendations align with the project's key objectives, incorporates feedback from citizens and are concepts that balance technical requirements with community priorities. The short-term investment plan will help improve safety, multimodal connectivity and traffic operations for all users. The long-term concepts help achieve flexible and sustainable

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South Shaganappi Study Report

infrastructure and provide certainty to residents in developing a new vision for complementing land use in the area.

ATTACHMENT(S)

1. Attachment 1 – South Shaganappi Study Executive Summary
2. Attachment 2 – South Shaganappi Study Preferred Long-Term Concept
3. Attachment 3 – South Shaganappi Study Recommended Short-Term Plan
4. Attachment 4 – South Shaganappi Study Engagement Summary Report



South Shaganappi Study

Technical Report

June 28, 2018

Prepared for:

The City of Calgary

Prepared by:

Stantec Consulting Ltd.

South Shaganappi Study Executive Summary

SOUTH SHAGANAPPI STUDY

Executive Summary

EXECUTIVE SUMMARY

BACKGROUND

Shaganappi Trail NW serves as a vital link in The City of Calgary's transportation network, providing connections to the Montgomery, Point McKay, Parkdale, Edworthy Park, and University Heights areas.

Historically, Shaganappi Trail NW was classified as an expressway as per the 1970 Shaganappi Trail Functional Planning Study. The study recommended a major systems interchange at the junction of 16 Avenue NW, Bowness Road NW, Memorial Drive NW, and Shaganappi Trail NW. It also recommended that Shaganappi Trail NW be extended across the Bow River through Edworthy Park to connect to Sarcee Trail NW.

The South Shaganappi Study Area is shown in **Figure E. 1** below.



Figure E. 1: South Shaganappi Corridor Study - Study Area

In 2009, Calgary City Council approved the Calgary Transportation Plan which then changed the classification of Shaganappi Trail NW to an arterial road and confirmed that the Bow River crossing of Shaganappi Trail NW was no longer part of the transportation network. The change in classification coupled with the removal of the planned river crossing introduced a requirement to review transportation infrastructure needs in the study area. The South Shaganappi Study was initiated following approval of the Shaganappi Trail Corridor and High Occupancy Vehicle Study in 2015, which defined the long-term corridor plan for Shaganappi Trail NW north of 16 Avenue NW.

v

South Shaganappi Study Executive Summary

SOUTH SHAGANAPPI STUDY

Executive Summary

STUDY PURPOSE AND OBJECTIVES

The goals of the South Shaganappi Study were:

1. **Review and recommend infrastructure that aligns the future corridor plans for Shaganappi Trail with the 2009 Calgary Transportation Plan, the Municipal Development Plan, and adjacent land uses.**
2. **Identify what land will no longer be required for transportation infrastructure.**

Seven study objectives were developed based on community input and technical review. These objectives were utilized to evaluate and select the preferred concept option.

- Address safety for those who use and/or live by the corridor;
- Address accessibility across and throughout the corridor, reconnecting the adjacent communities of Montgomery and Parkdale / Point McKay;
- Accommodate all modes of transportation including walking, cycling, driving, high-occupancy vehicles, and transit;
- Move people and goods in an efficient way, providing continuous traffic flow and a reduction in greenhouse gas emissions;
- Preserve and enhance land within the study area where there are opportunities;
- Reflect the values and priorities of the community; and
- Develop an affordable and cost-effective solution that provides good value for money.

PROJECT PROCESS

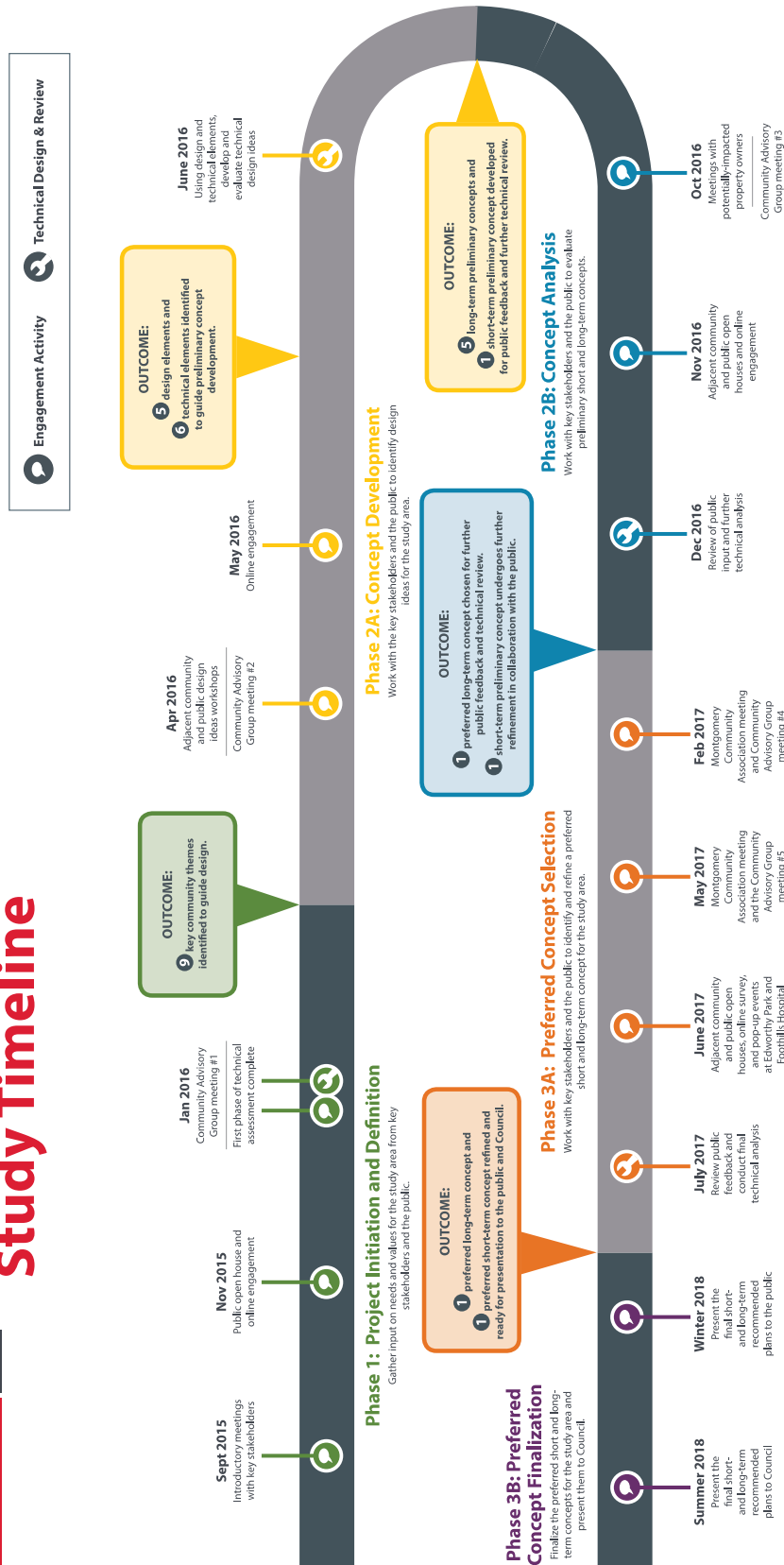
The study was divided into three primary phases running from Fall 2015 to Summer 2018 as shown in **Figure E. 2**.

Phase 1 was focused on initiating and defining the project. It provided area residents, businesses, and other stakeholders with an introduction to the study and an opportunity to identify concerns, values, issues, and hopes for the study area. A Community Advisory Group was formally established, whereby an introductory project meeting was held between The City and the Community Advisory Group. Relevant existing technical background data was also collected at this Phase.

Phase 2 was focused on developing and evaluating the short and long-term concepts for the study area. Design Idea Workshops were held for adjacent communities and the public to share ideas on changes in the study area. Five long-term concepts and a draft short-term concept were presented to adjacent community residents and the public, and were evaluated through a public open house, an online survey, and a detailed technical review. Results of the evaluation allowed for the selection of a preferred long-term concept, and the reconfiguration of the short-term concept.

Phase 3 focused on developing and refining the preferred short-term and long-term concepts. Draft short-term and long-term recommended concepts were reviewed with stakeholder groups during this phase. Calgarians were invited to provide final feedback on draft recommended concepts through engagement opportunities. Review of public feedback, detailed technical analysis, and refinement of draft recommended concepts were completed during this phase to refine and finalize the recommended concepts.

South Shaganappi Study Study Timeline



South Shaganappi Study Executive Summary

SOUTH SHAGANAPPI STUDY

Executive Summary

PUBLIC ENGAGEMENT

In conjunction with the technical analysis and design of the study area, the South Shaganappi Study undertook an extensive stakeholder and public engagement effort. The feedback received through the engagement process helped the technical team evaluate and refine short and long-term concepts. Stakeholder and public feedback was used to help:

- Create design and technical elements that formed the foundation for the short and long-term preliminary concepts
- Develop the short-term preliminary concept
- Develop the five long-term preliminary concepts
- Evaluate five long-term preliminary concepts
- Refine the final preferred short-term concept
- Refine the final preferred long-term concept

EXISTING CONDITIONS

Existing conditions within the study area were reviewed to help inform assessments and recommendations for both the Short-Term Investments and the Long-Term Concept.

SHORT-TERM INVESTMENTS

The City of Calgary's Transportation Corridor Study Policy requires the consideration for short-term investments that can be made to address existing issues and fulfill opportunities within the study area being examined for long-term transportation infrastructure changes. Short-term investments may be considered independently from long-term concepts, such that existing issues within the study area may be addressed prior to complete implementation of a long-term concept.

Short-term investments offer the benefit of addressing existing community concerns with minimal modifications to the existing infrastructure. Incorporating feedback from CAG, residents in the area and Calgarians, ideas were developed to enhance safety, and to address concerns that were heard such as difficulty in making turning movements within the existing infrastructure and limited pedestrian and bicycle connectivity. A short-term concept was developed and refined based on public input and extensive technical review and evaluation. The recommended short-term concept is shown in **Figure E. 3:** and **Figure E. 4.**

The recommended short-term concept consists of the following infrastructure changes:

- **Construct a new ramp and acceleration lane from southbound Shaganappi Trail NW to eastbound 16 Avenue NW.** Constructing a complete acceleration lane provides additional length for motor vehicle traffic from southbound Shaganappi Trail NW to merge onto eastbound 16 Avenue NW.
- **Install a new traffic signal and dual lane entrance ramp to control northbound Bowness Road NW to westbound 16 Avenue NW.** Installing a new traffic signal at the Bowness Road NW to 16 Avenue NW on-ramp will separate traffic movements at this location by using dedicated traffic signal phases for each vehicle movement. The dual lane entrance ramp will provide additional queuing space for vehicles.

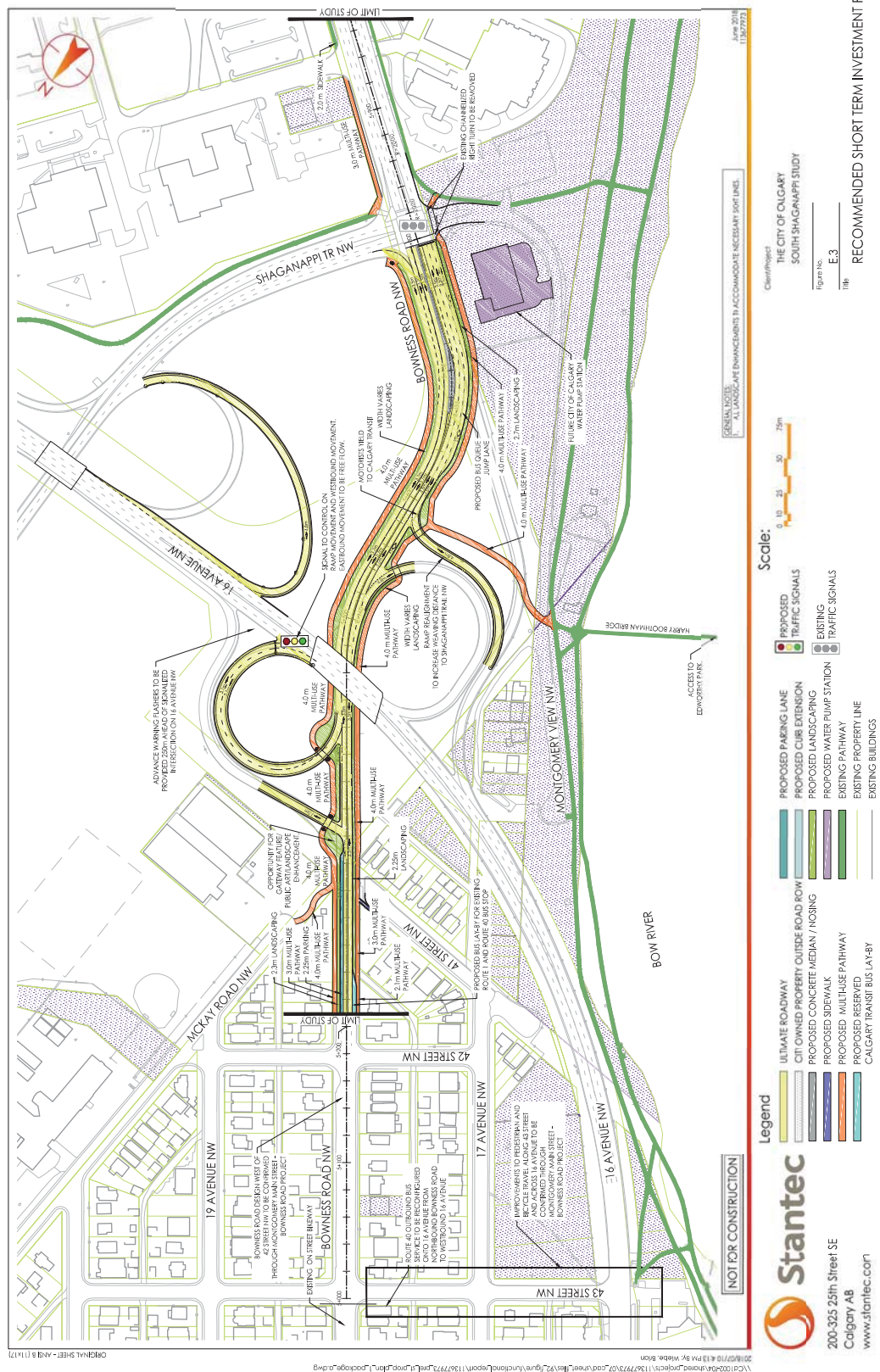
South Shaganappi Study Executive Summary

SOUTH SHAGANAPPI STUDY

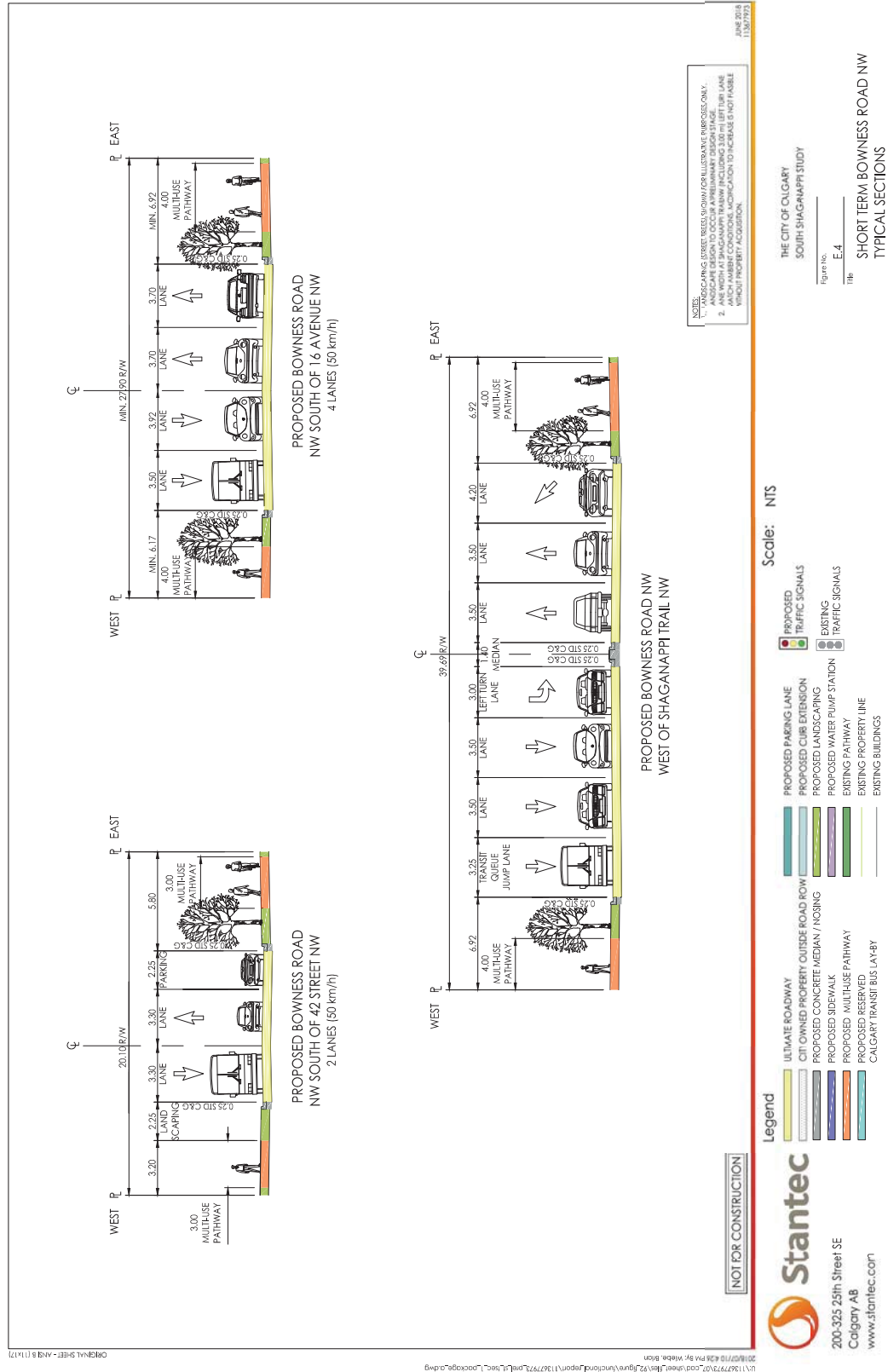
Executive Summary

- **Introduce connectivity enhancements along Bowness Road NW for people who walk and bicycle.** Introducing two new multi-use pathways along Bowness Road NW between Shaganappi Trail NW and 42 Street NW establishes new travel options for people to walk, roll, or bicycle along Bowness Road NW. Additional pathway connections to Mackay Road NW and the Harry Boothman Bridge ensures strong integration with the existing active transportation network. This investment is anticipated to support increased walking, rolling, and cycling activity along Bowness Road NW.
- **Realign the ramp from eastbound 16 Avenue NW to southbound Bowness Road NW.** Modifying the existing ramp geometry will result in a longer weaving distance for people who drive to more easily access northbound Shaganappi Trail NW from eastbound 16 Avenue NW, while maintaining the existing dedicated transit only lane. Realigning the existing ramp allows for extension of the dedicated transit only lane further south to the intersection of Bowness Road NW and Shaganappi Trail NW, thus creating a bus queue jump for Calgary Transit at the intersection. This investment is anticipated to improve motor vehicle connectivity and traffic operations.

South Shaganappi Study Executive Summary



South Shaganappi Study Executive Summary



South Shaganappi Study Executive Summary

SOUTH SHAGANAPPI STUDY

Executive Summary

The Class 5 cost estimate for each of the Short-term Recommended Investments is summarized in **Table E. 1**.

Table E. 1: Short-term Recommended Investments Opinion of Probable Costs

Investment	Cost*
Construct a new ramp and acceleration lane from southbound Shaganappi Trail NW to eastbound 16 Avenue NW	\$1,159,000
Install a new traffic signal and dual lane entrance ramp to control northbound Bowness Road NW to westbound 16 Avenue NW	\$644,000
Introduce connectivity enhancements along Bowness Road NW for people who walk and bicycle	\$1,587,000
Realign the ramp from eastbound 16 Avenue NW to southbound Bowness Road NW	\$380,000
Total	\$3,770,000

*Rounded to the nearest \$1,000. Opinion of probable cost based on a Class 5 cost estimate.

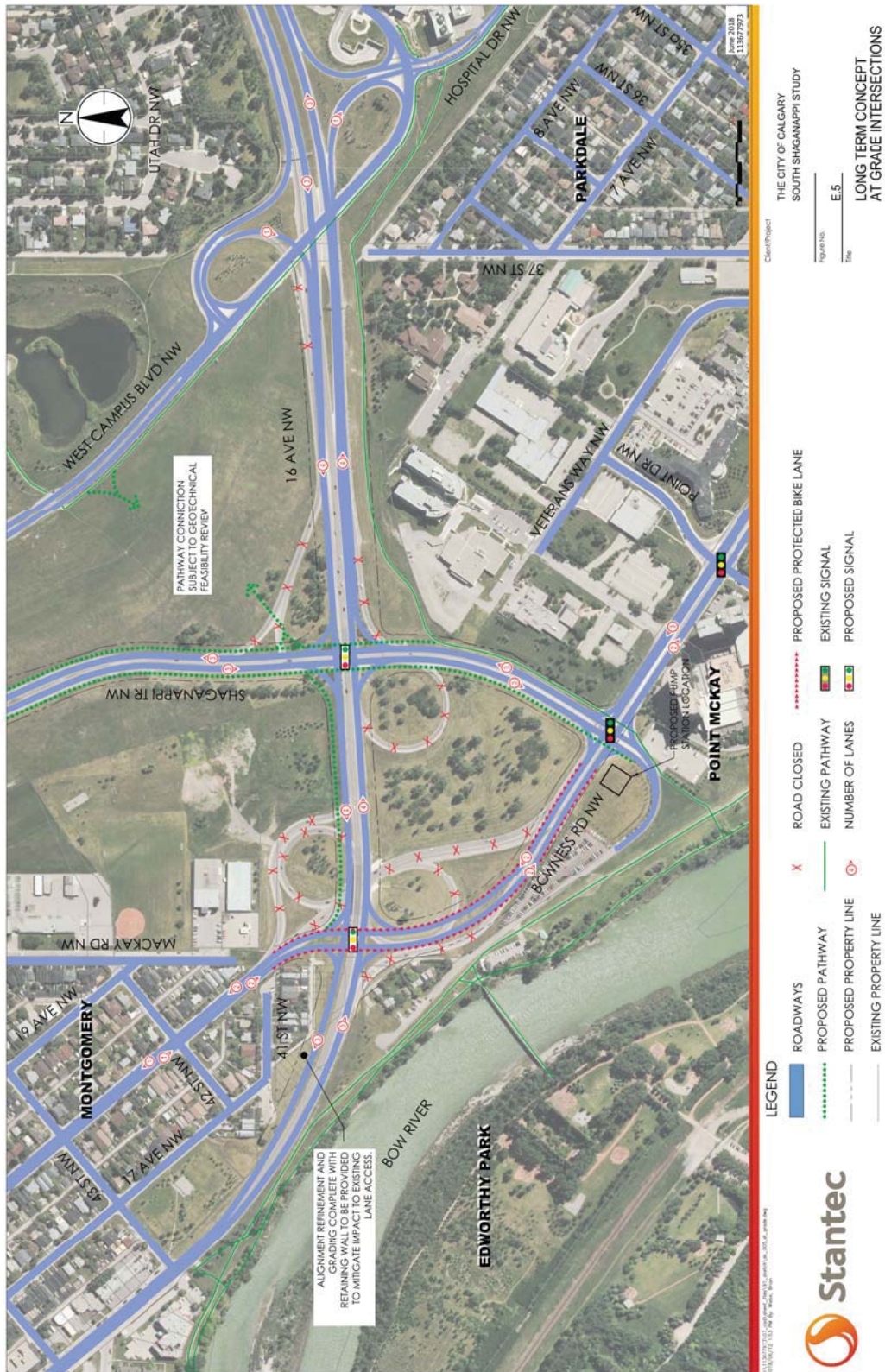
LONG-TERM CONCEPT DEVELOPMENT

A thorough and participatory approach was taken to develop, evaluate, and recommend a preferred long-term concept for the South Shaganappi Study Area. Stakeholders were involved in concept development through a range of engagement activities including face-to-face meetings, in-person events, online engagement opportunities, pop-up events in public spaces, design idea workshops, open houses, and information sessions. Five design concepts were developed and evaluated as described in **Table E. 2**, and shown in **Figure E. 5**, **Figure E. 6**, **Figure E. 7**, **Figure E. 8**, and **Figure E. 9**.

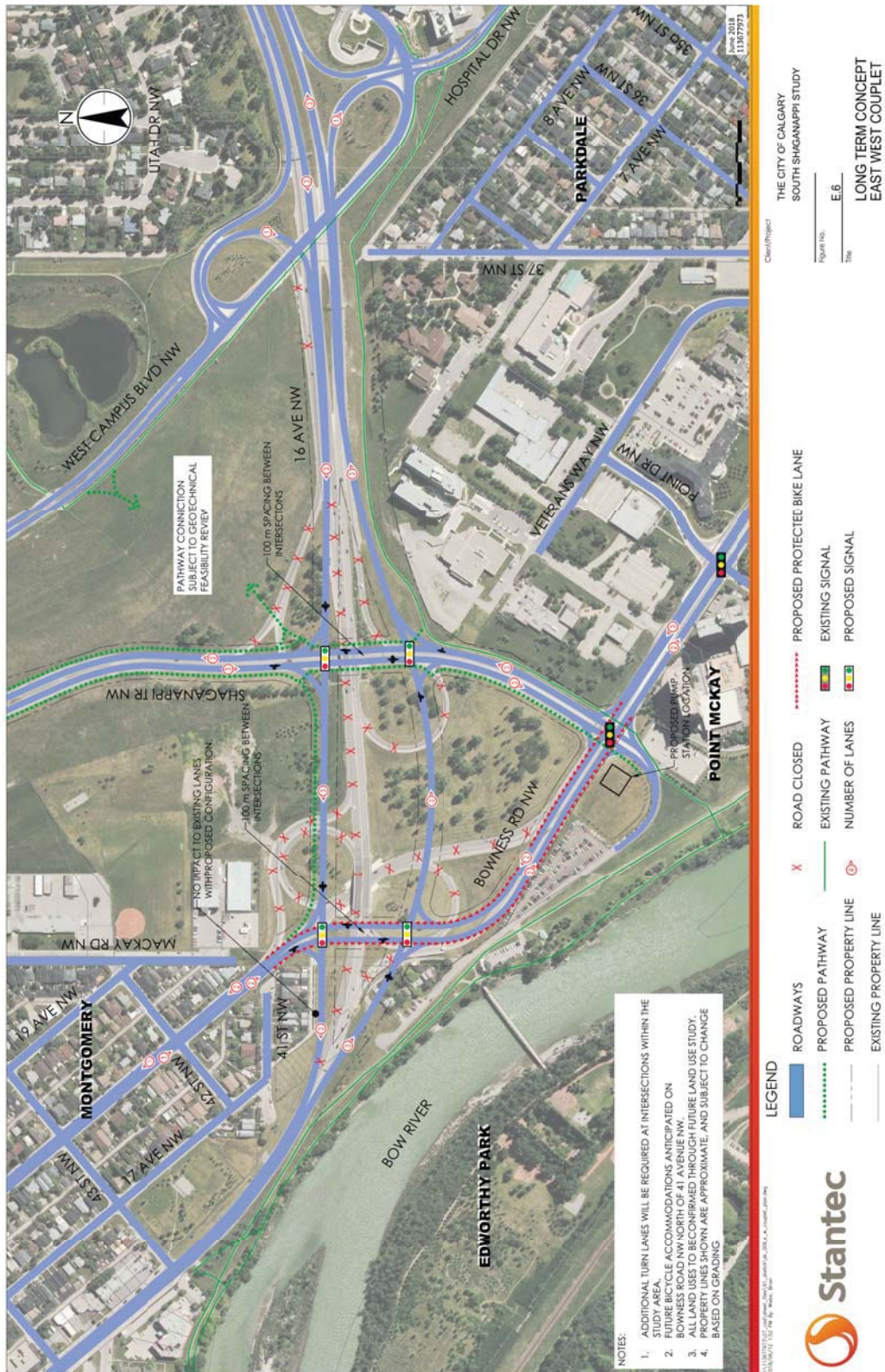
Table E. 2: Long-term Design Concepts Evaluated

Concept	Description
At-Grade Intersections	This concept consists of new at-grade intersections on 16 Avenue NW at Bowness Road NW and Shaganappi Trail NW. All existing interchange ramps located at these junctions would be removed.
East-West Couplet	This concept consists of a reconfiguration of 16 Avenue NW into an east-west couplet with at-grade intersections at Bowness Road NW and Shaganappi Trail NW. This concept would include closure of all existing interchange ramps, and the existing 16 Avenue NW roadway.
Hybrid	This concept realigns both Shaganappi Trail NW and Bowness Road NW, complete with new grade-separated structures on 16 Avenue NW at Shaganappi Trail NW and Bowness Road NW. All existing interchange ramps would be closed, and a new two-way road connection would be constructed between 16 Avenue NW and Shaganappi Trail NW to provide all turning movements between Shaganappi Trail NW and 16 Avenue NW.
Tight Urban Diamond	This concept consists of a new Tight Urban Diamond Interchange providing all turn movements at the intersection of Shaganappi Trail NW and 16 Avenue NW. The intersection of 16 Avenue NW and Bowness Road NW would be grade-separated, but no turning movements would be provided.
Do Nothing	This concept retains all infrastructure within the study area as it currently exists.

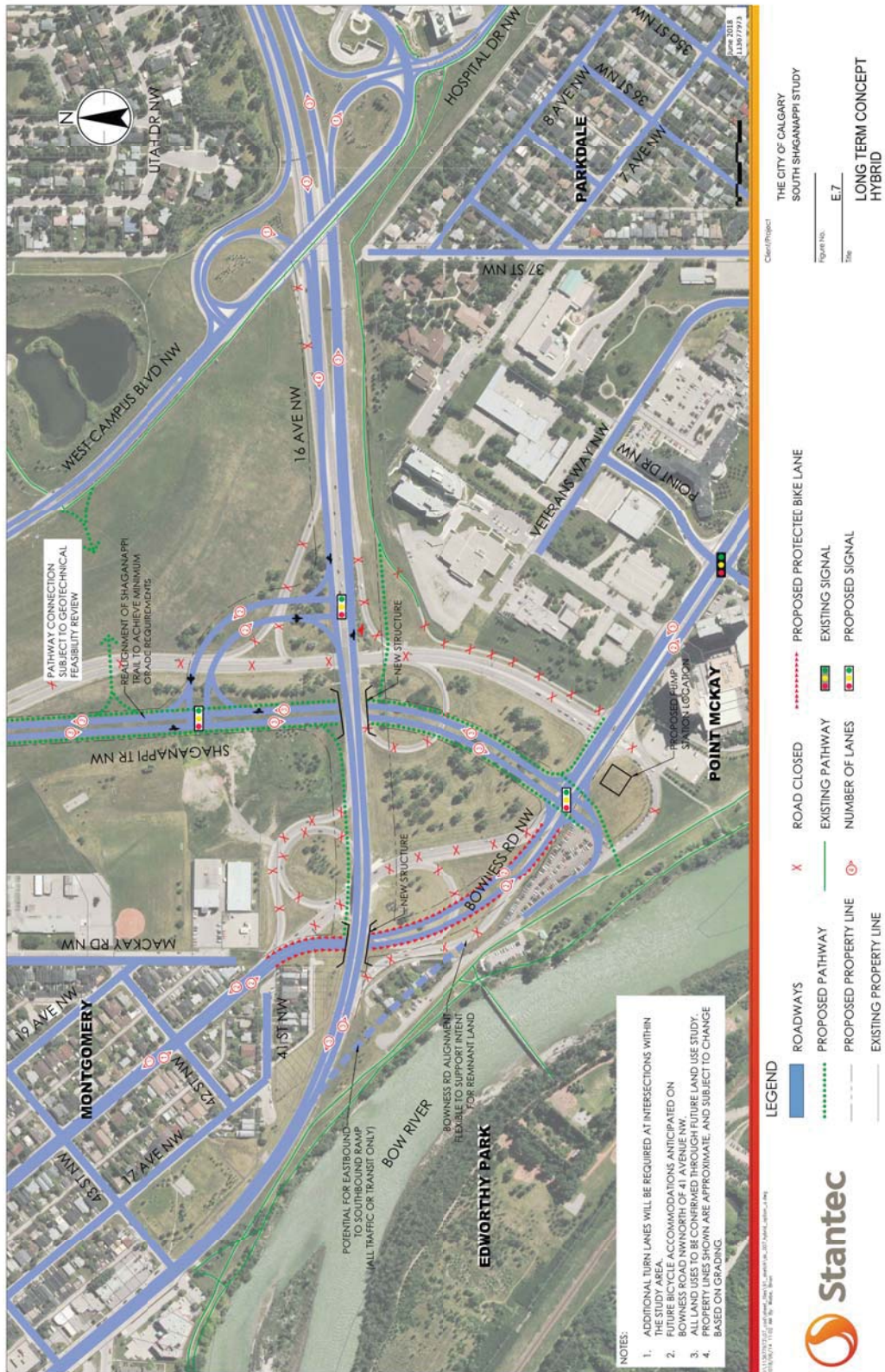
South Shaganappi Study Executive Summary



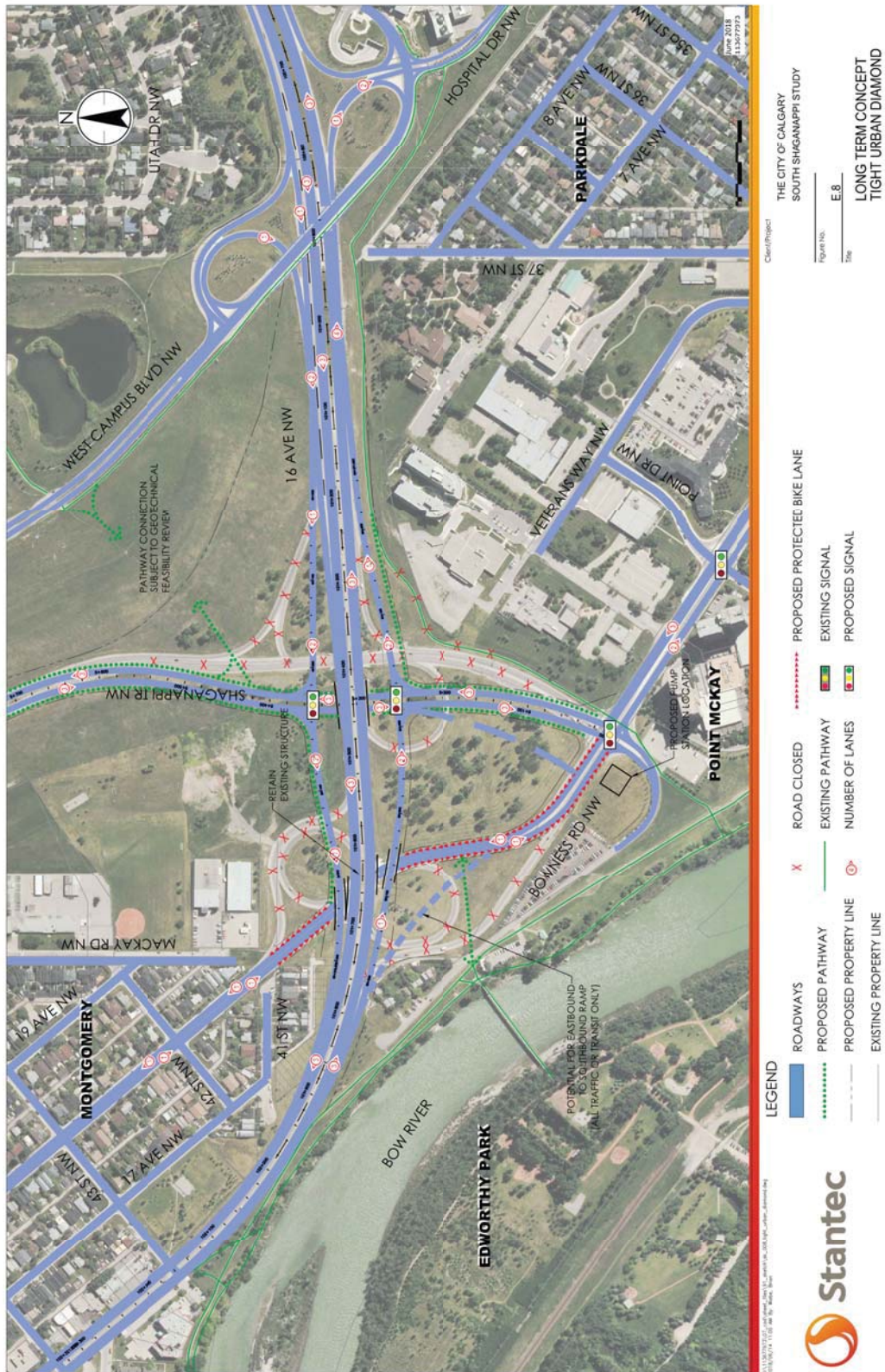
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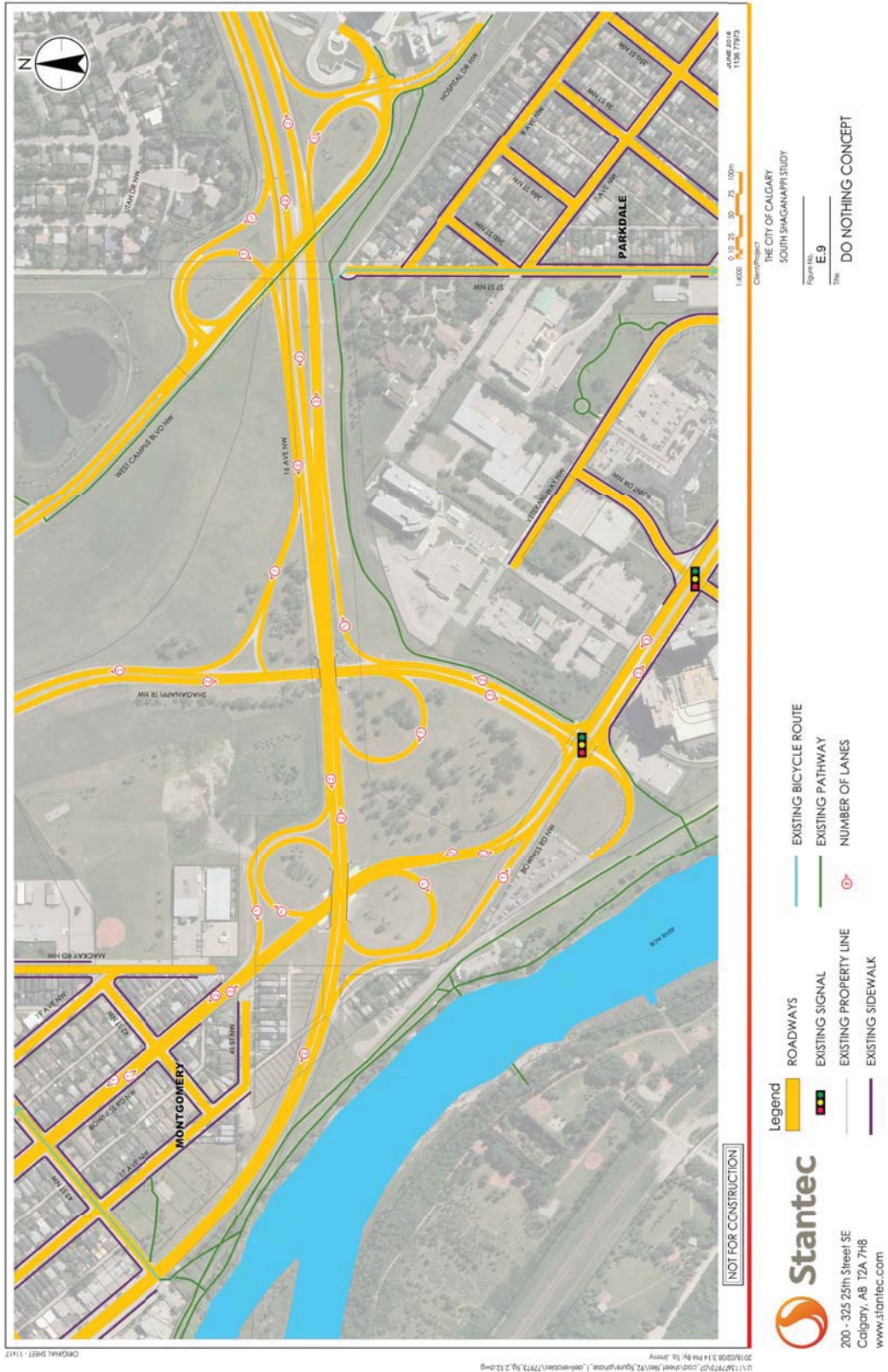
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South Shaganappi Study Executive Summary



South Shaganappi Study Executive Summary



South Shaganappi Study Executive Summary

SOUTH SHAGANAPPI STUDY

Executive Summary

Stakeholder and technical evaluation was undertaken using each of the seven project objectives to identify the preferred concept. The results of the evaluation are shown in **Figure E. 10**, with the highest performing concept for each objective identified with a check mark.



Figure E. 10: Summary of Evaluation

As shown, the Tight Urban Diamond performs the strongest across the seven project objectives. It performs the highest across the most number of objectives, and as a total of the evaluation scores across all objectives. Based on this evaluation, the Tight Urban Diamond is recommended as the preferred concept.

LONG-TERM RECOMMENDED CONCEPT

The final recommended concept is shown in **Figure E. 11** through **Figure E. 16**. The primary aspects of the recommended plan are summarized as follows:

- Accommodates all turns between 16 Avenue NW and Shaganappi Trail NW at one intersection unlike the existing infrastructure with loop ramps.
- Enhances bicycle and pedestrian mobility in the area.
- Maximizes land that is no longer required for transportation.
- Encourages through traffic to stay on 16 Avenue NW discouraging neighbourhood cut-through traffic.
- Enables multimodal mobility along Shaganappi Trail NW.

Legend

- ULTIMATE ROADWAY
- PROPOSED BRIDGE DECK
- CITY OWNED PROPERTY OUTSIDE ROAD ROW
- PROPOSED CONCRETE MEDIAN / HOVING
- PROPOSED SIDEWALK
- PROPOSED MULTISECT PATHWAY
- PROPOSED CYCLE TRACKS
- PROPOSED BICYCLE LANE
- PROPOSED PARKING LANE
- PROPOSED CURB EXTENSION
- PROPOSED LANDSCAPING
- PROPOSED WATER PUMP STATION
- PROPOSED RETAINING WALL
- PROPOSED RESERVED CALGARY TRANSIT BUS LAY-BY
- PROPOSED PATHWAY / SIDEWALK
- EXISTING PROPERTY LINE
- EXISTING BUILDINGS

Scale:

- PROPOSED TRAFFIC SIGNALS
- EXISTING TRAFFIC SIGNALS

NOT FOR CONSTRUCTION

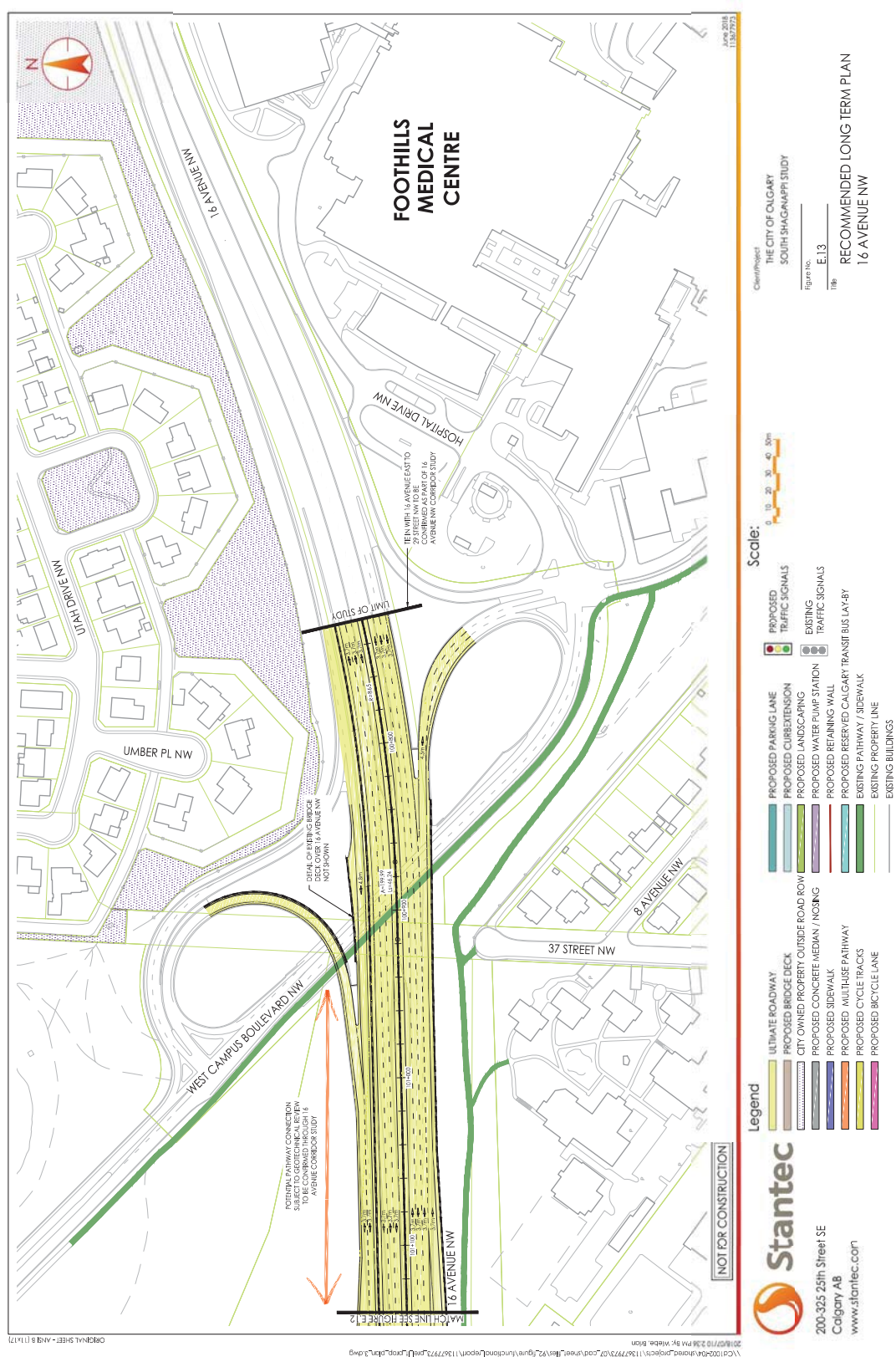
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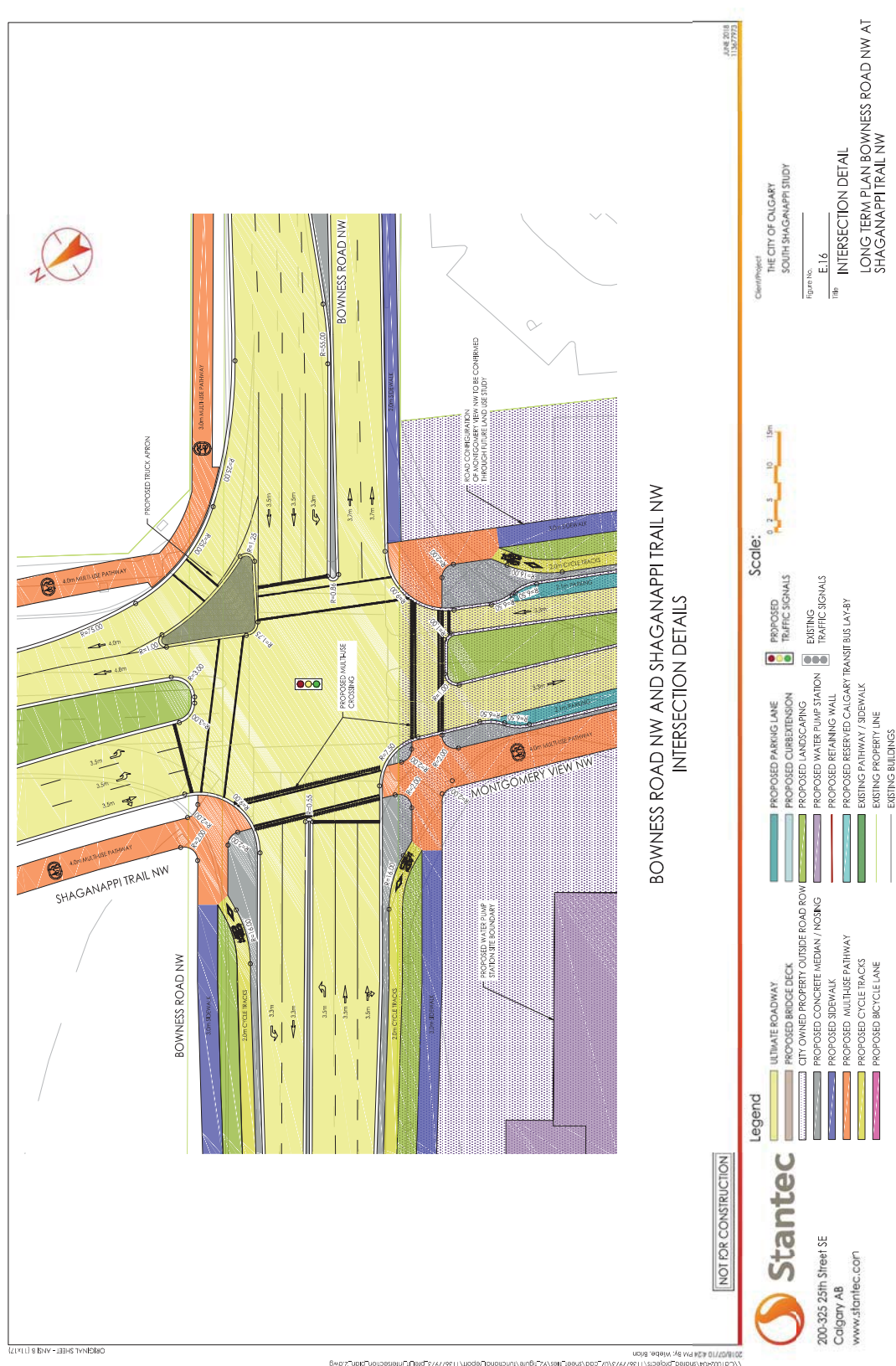
Figure No.
E.11

Title
RECOMMENDED LONG TERM PLAN
16 AVENUE NW

Scale:
0 10 20 30 40 50m

Map Labels:
19 AVENUE NW
BOWNESS ROAD NW
42 STREET NW
43 STREET NW
44 STREET NW
45 STREET NW
46 STREET NW
17 AVENUE NW
16 AVENUE NW
BOWNESS ROAD NW
MCCAY ROAD NW
LIMIT OF STUDY
PROPOSED BUS LANE FOR ROUTE 69 BUS STOP
PROPOSED FUTURE FOOTBRIDGE AS PER APPROVED PALMVIEW DEVELOPMENT PLAN
4m SIDEWALK
2m BIKE LANE
4m TRANSIT LANE
LANE WIDTHS TO BE REVIEWED THROUGH FUTURE CORRIDOR STUDY
EXISTING BUS STOP TO REMAIN
EXISTING BUS STOP TO REMAIN
IMPROVEMENTS TO TRAVEL ALONG 43 STREET AND ACROSS 16 AVENUE TO BE MONITORING AREA PROJECT - BOWNESS ROAD PROJECT - 16 AVENUE NW TO MONITORING AREA
POINT 69 OUTBOUND BUS STOP ON 16 AVENUE FROM NORTH ONTO 43 STREET FROM 43 STREET TO MONITORING AREA
AS PER MONITORING AREA REDEVELOPMENT ALLOWED FOR FUTURE IN LANE OF 16 AVENUE NW THROUGH MONITORING AREA A 10.00m SOUTH-BIT LANE FOR FUTURE BUS STOP





South Shaganappi Study Executive Summary

SOUTH SHAGANAPPI STUDY

Executive Summary

A preliminary Class 5 cost estimate was prepared for the Long-Term Concept. This is summarized in **Table E. 3**.

Table E. 3: Long-term Concept Opinion of Probable Cost Summary

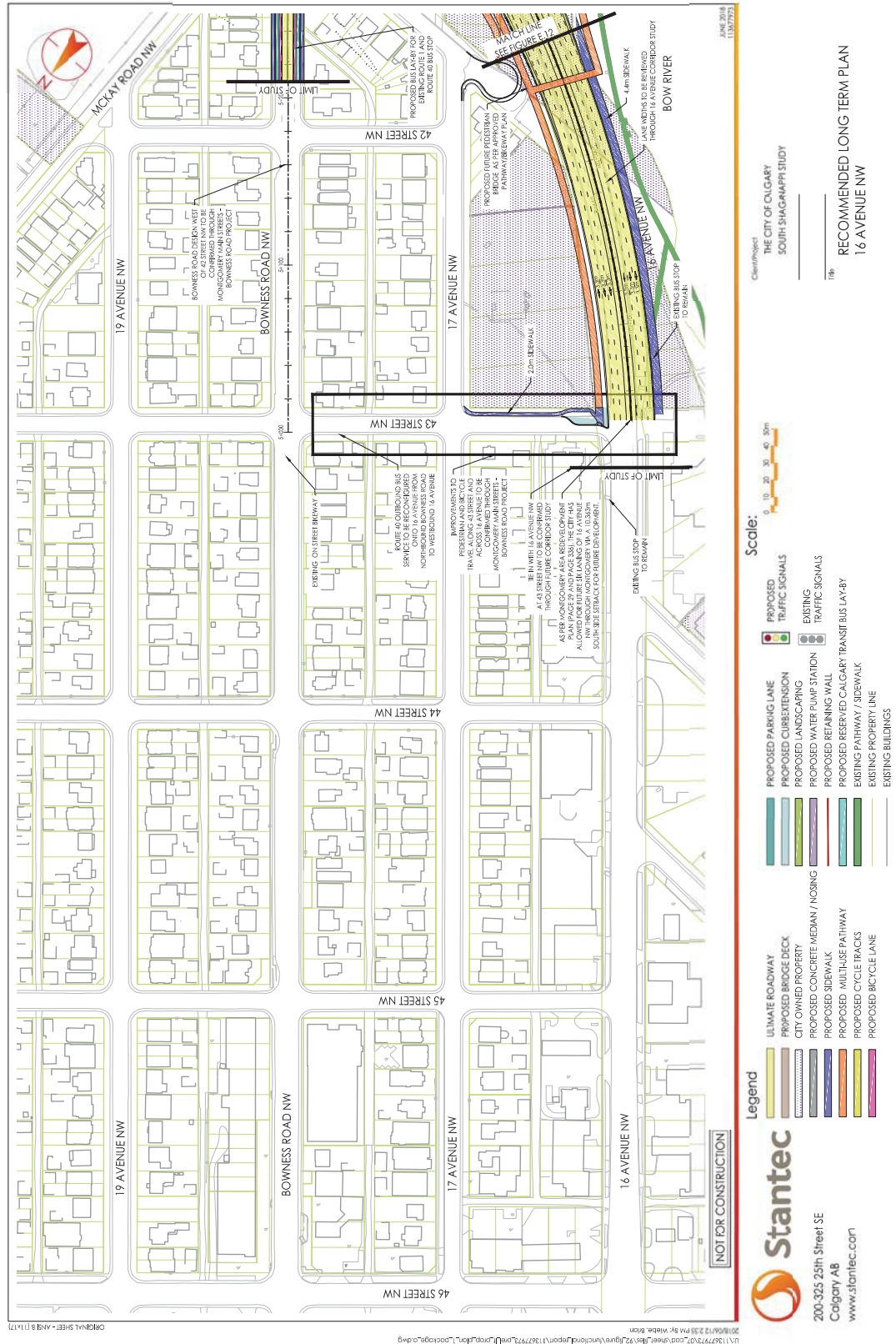
Category	Cost*
Roadways	\$11,650,000
Earthworks	\$3,350,000
Bridges	\$29,220,000
Retaining Walls	\$1,850,000
Removals, Stormwater, Utilities, and Landscaping	\$14,180,000
Sub-Total	\$60,250,000
Contingency (30%)	\$18,070,000
Engineering / Testing (12%)	\$9,400,000
City Administration and Traffic Control (20%)	\$15,660,000
Public Art (1%)	\$800,000
Total	\$104,180,000

*Rounded to the nearest \$10,000. Opinion of probable cost based on a Class 5 cost estimate.

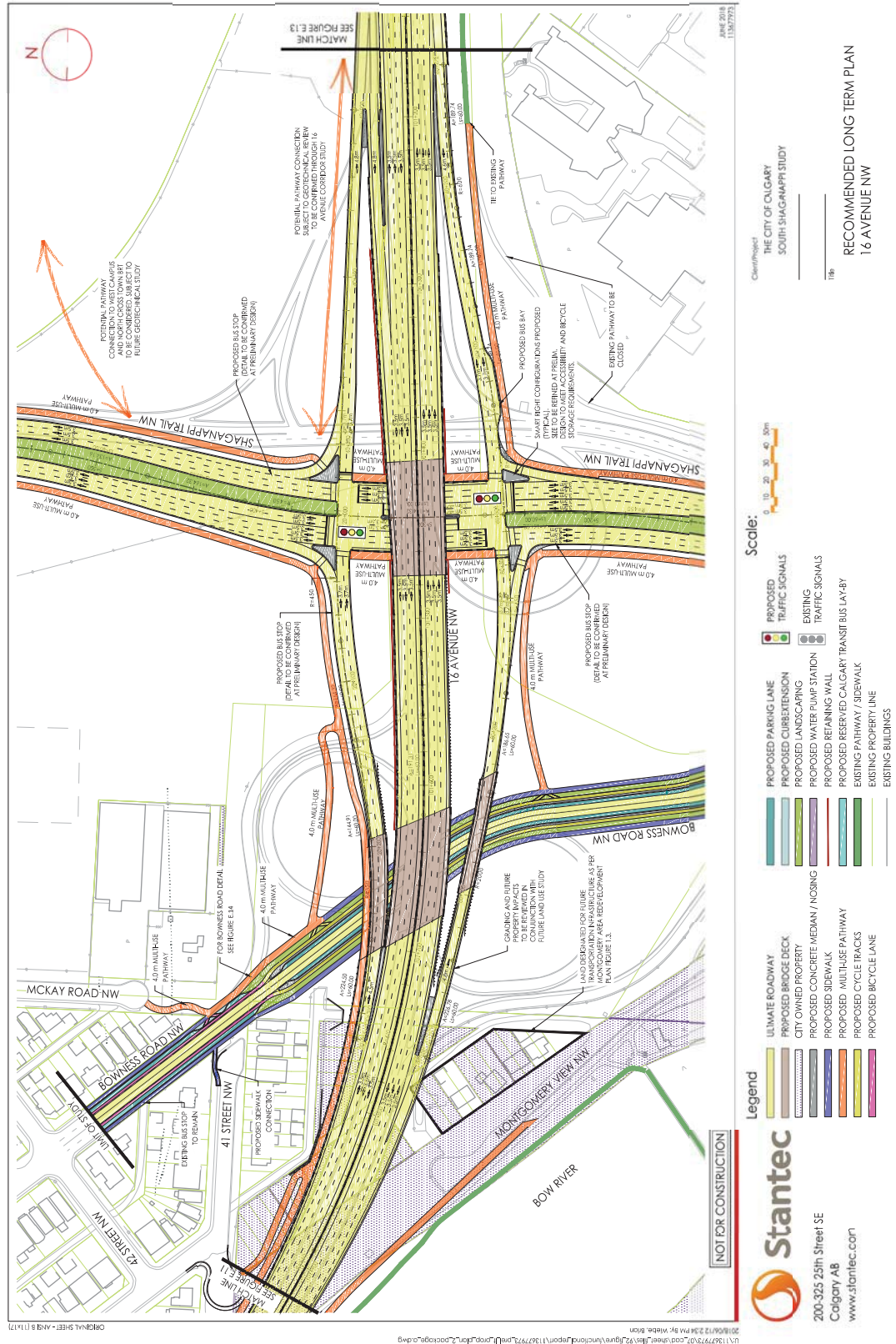
IMPLEMENTATION

Implementation of the Recommended Short-Term Investments and Long-Term Concept are subject to The City's infrastructure investment prioritization process, and should be coordinated and prioritized amongst the different transportation needs within the transportation network of The City.

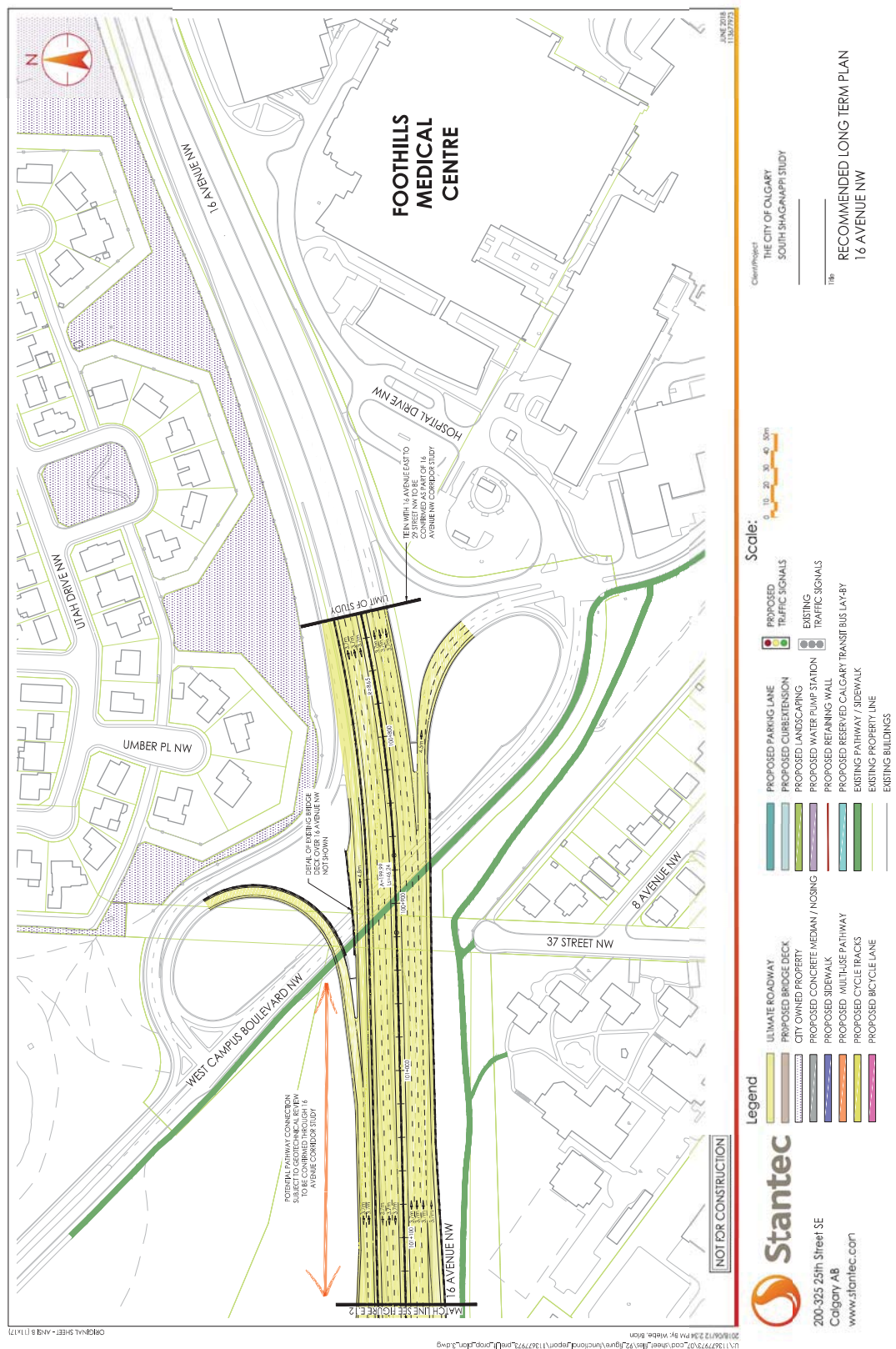
It is recommended that the Short-term Investments be considered independently from the Long-Term Concept. It is further recommended that the Long-Term Concept should not be implemented before the Medium Term Crowchild Trail Study improvements are completed. It is also noted that the existing 16 Avenue NW bridge structures at Shaganappi Trail NW and Bowness Road NW are anticipated to provide a useful lifespan through to 2045.



South Shaganappi Study Preferred Long-Term Concept



South Shaganappi Study Preferred Long-Term Concept



Legend

- ULTIMATE ROADWAY
- PROPOSED CURB/EXTENSION
- CITY OWNED PROPERTY
- PROPOSED CONCRETE MEDIAN / HOVING
- PROPOSED SIDEWALK
- PROPOSED BIKEWAY
- PROPOSED CYCLE TRACKS
- PROPOSED BIKEWAY

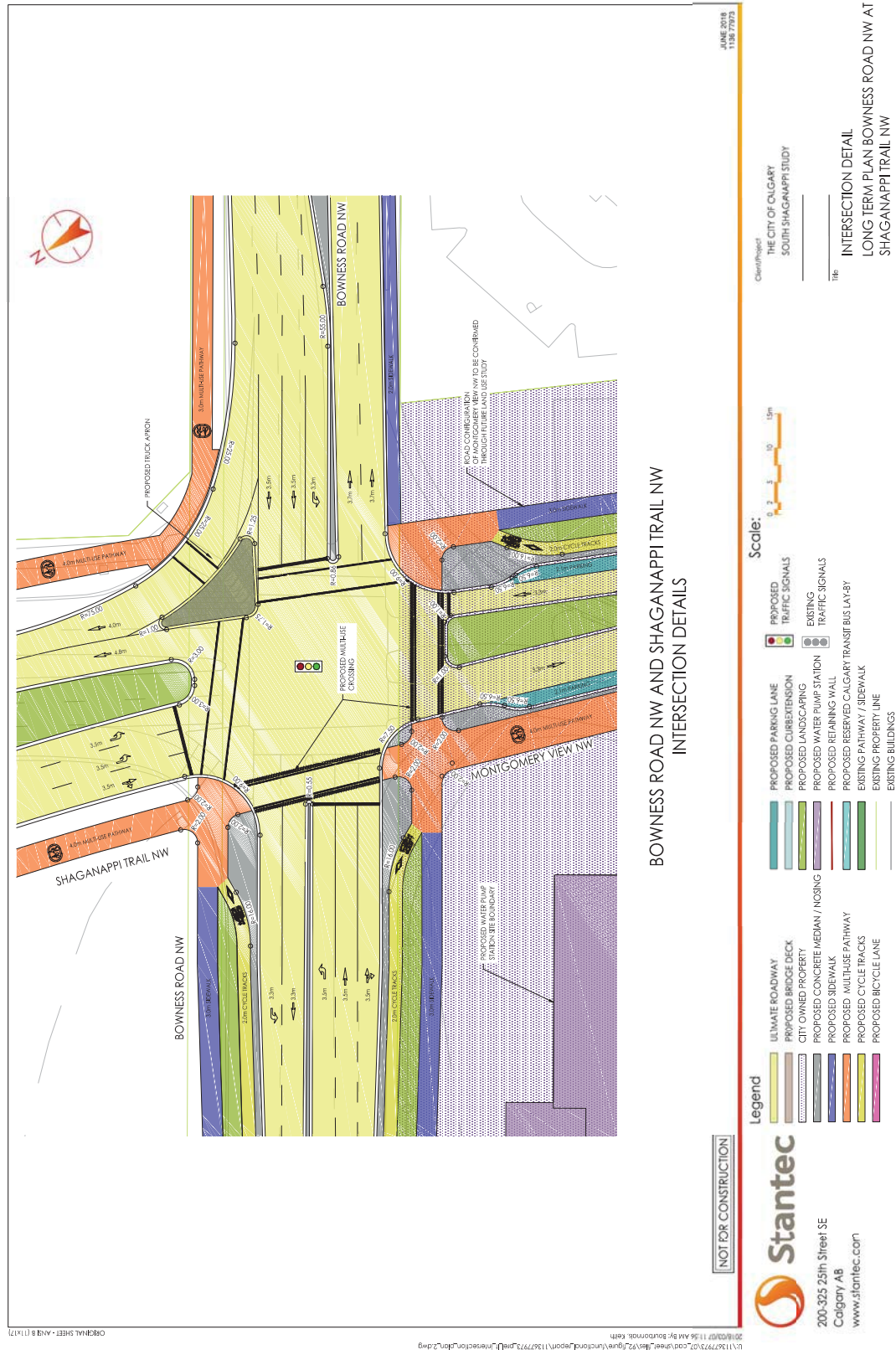
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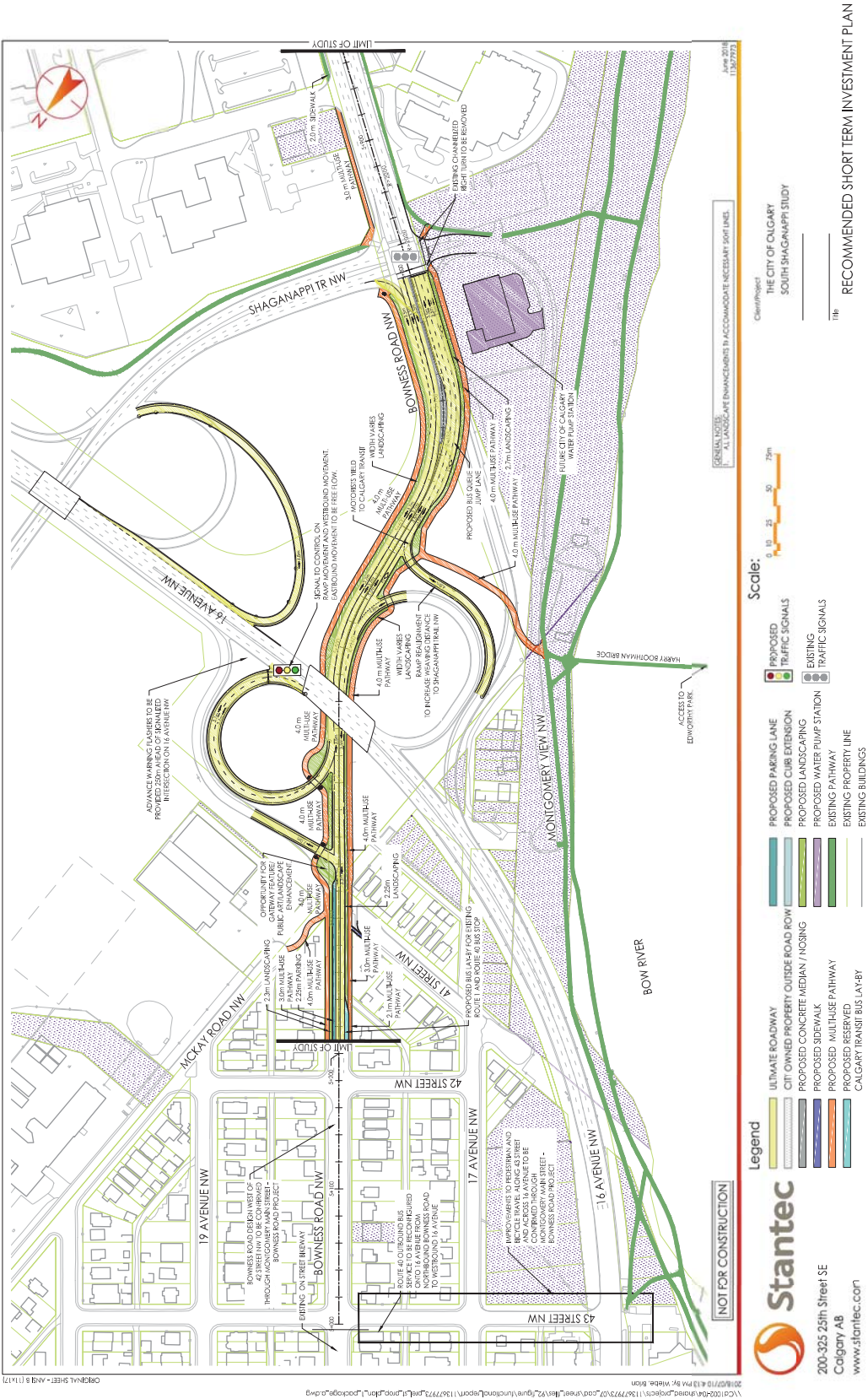
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SOUTH SHAGANAPPI STUDY

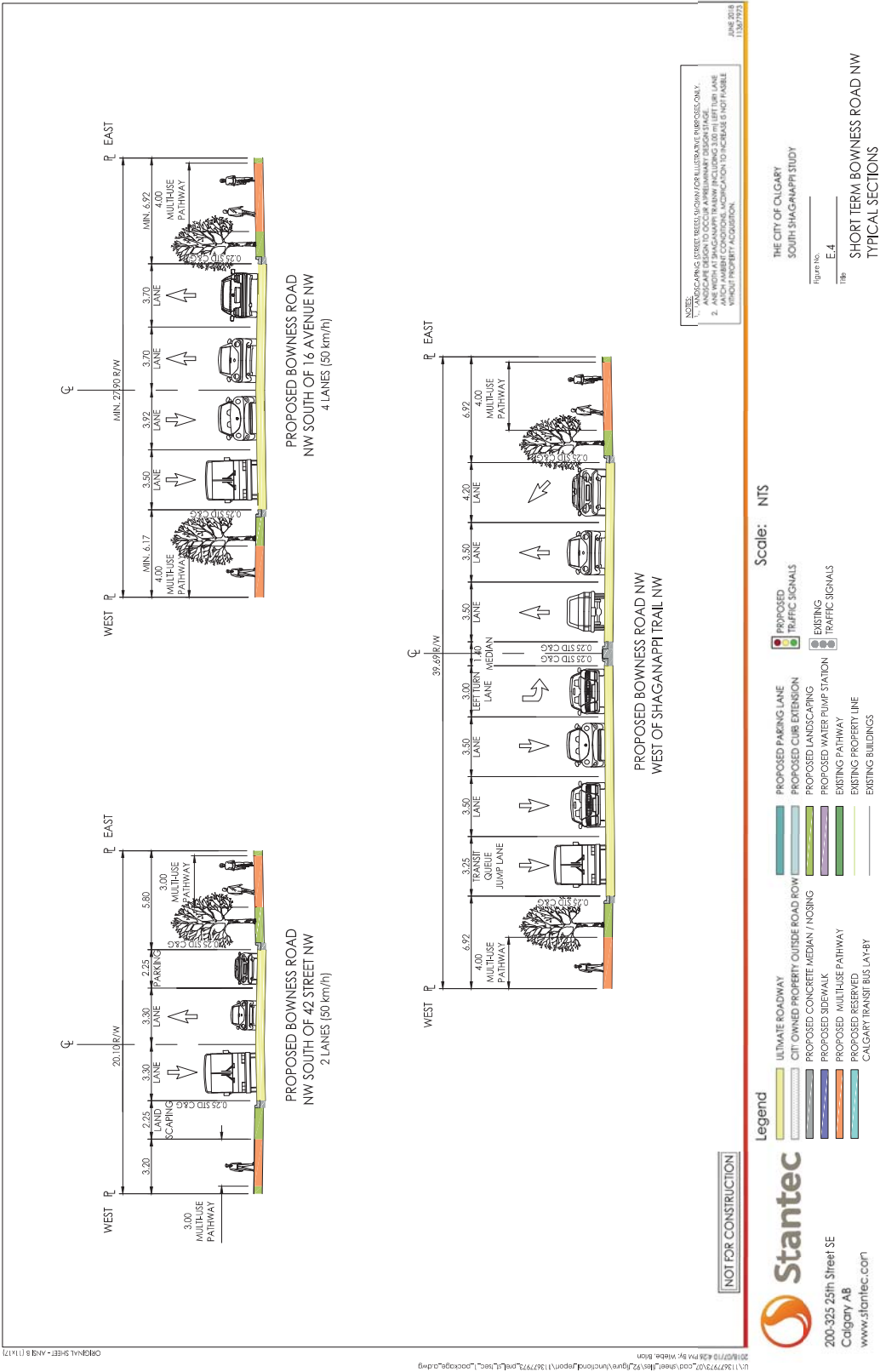
RECOMMENDED LONG TERM PLAN
BOWNESS ROAD NW

TT2018-0822 South Shaganappi Study - Att 2.pdf
ISC: Unrestricted





South Shaganappi Recommended Short-Term Plan



South Shaganappi Study 2015 - 2018 Engagement Summary Report



Report completed: April 2018

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Executive Summary

In 2009, Council approved the Calgary Transportation Plan (CTP) which reclassified Shaganappi Trail to an Arterial Street. Based on this reclassification, the South Shaganappi Study was initiated with stakeholders and the public to reimagine Shaganappi Trail. The Study was specifically interested in exploring the most effective ways of supporting community connections in the area, enhancing the safety and efficiency of the corridor, and providing easy movement through the corridor for all modes of transportation. The goal of the Study was to develop short- and long-term recommended plans that would guide the design of south Shaganappi Trail in the coming years.

The study included three phases that focused on gathering stakeholder and public input to inform and shape the design of the study area:

- Phase 1 – Project initiation and definition
- Phase 2 – Concept analysis and development
- Phase 3 – Preferred concept selection and finalization

Throughout these phases a range of engagement activities were held including face-to-face meetings with specific stakeholders, in-person events for stakeholders and the public, online engagement opportunities, and pop-up events in public places. These engagement opportunities sought input from a wide range of people including residents and businesses in adjacent and surrounding communities, those who work in and/or commute through the study area, community associations and planning committees, special interest groups, institutions, and the general public.

As the design of south Shaganappi Trail would have the greatest impact on the adjacent communities of Montgomery, Parkdale, and Point McKay, one of the focal points for the study team was ensuring the ongoing involvement of residents and businesses in these communities. Specific adjacent-community-only events were held to ensure community members had dedicated time to discuss their unique perspectives, and to review plans as they progressed from draft through to final stages.

A Community Advisory Group was also established to bring representative stakeholder and public voices to the design process. This group met regularly with the project team. As the project progressed, the project team also met regularly with the Montgomery Community Association.

Throughout the course of the study, the technical team worked closely with stakeholders and the public to ensure that short- and long-term recommendations met the needs and vision of those who would be most impacted by the plans. This integrated and responsive approach to engagement resulted in recommended plans that meet the study's objectives while reflecting the unique character of the communities they serve.

1.0 Background and Overview

1.1 Study background

Shaganappi Trail has long been identified as an important link in Calgary's transportation network.

In 1970, The City completed the Shaganappi Trail Functional Planning Study. At that time, Shaganappi Trail was classified as an expressway. The study recommended a major interchange at the junction of 16 Avenue, Bowness Road, Memorial Drive, and Shaganappi Trail. It also recommended Shaganappi Trail be extended across the Bow River through Edworthy Park to connect commuters to Sarcee Trail.

In 2009, Council approved the Calgary Transportation Plan (CTP). The CTP reclassified Shaganappi Trail to an Arterial Street and identified the corridor as a primary route for transit, cycling and HOV (high-occupancy vehicles). In addition, the CTP confirmed that the Bow River crossing recommendation included in previous transportation plans for Shaganappi Trail would be removed. As an Arterial Street, the function of Shaganappi Trail would be to provide reasonably direct connections between communities and major destinations rather than the major north-south connection that had previously been planned.

In light of this reclassification, the South Shaganappi Study was established to work closely with stakeholders and the public to reimagine Shaganappi Trail as an Arterial Street. The Study was specifically interested in exploring the most effective ways of supporting community connections in the area, enhancing the safety and efficiency of the corridor, and providing easy movement through the corridor for all modes of transportation.

Working with stakeholders and the public the study identified both short- and long-term recommendations that accommodate all modes of transportation and align the study area with the CTP, the Municipal Development Plan (MDP), and adjacent land use plans.

1.2 Engagement strategy

Engagement for the South Shaganappi Study occurred in phases and focused on gathering specific stakeholder and public input to inform and shape the design of the study area. The three phases of engagement are outlined below and discussed in more detail in subsequent sections of this report.

Phase	Objectives
1: Project initiation & definition	<ol style="list-style-type: none">1. Introduce stakeholders and the public to the study2. Learn about stakeholder and public needs, values, and vision for the study area.

South Shaganappi Study Engagement Summary Report

2A: Concept Analysis	1. Collaborate with stakeholders and the public to generate potential design ideas for the study area
2B: Concept Development	1. Develop preliminary short- and long-term design concepts for the study area
3A: Preferred Concept Selection	1. Review and refine short- and long-term recommended plans with stakeholders and the public
3B: Preferred Concept Finalization	1. Present final short- and long-term recommended plans to stakeholders and the public

1.3 Building relationships

A priority on building relationships with stakeholders and developing trust with the public was a focus throughout the study. The project team connected with a broad range of stakeholders, and through this process identified a variety of needs and desires with regards to engagement. This led to a tailored engagement approach that respected the needs of different stakeholders and public users. With a focus on working together with stakeholders, the project team's effective relationships led to the creation of recommendations for the short- and long-term design of South Shaganappi Trail that incorporate a wide range of perspectives.

Engagement with adjacent communities

After the first public engagement opportunity it became clear that the communities adjacent to the study area, i.e. Montgomery, Parkdale, and Point MacKay, had concerns related to the safety and comfort of their residents that were not necessarily shared by other Calgarians. It was clear that the impacts of the study would be felt most directly by these communities. To ensure that community members had an opportunity to receive information and provide their unique input on the study, the project team split engagement activities into two separate streams for Phases 2 and 3.

In Phases 2 and 3 all in-person engagement activities were held twice. The first event was open only to adjacent community members, while the second event was open to all Calgarians. This split provided those living and doing business in adjacent communities a chance to have in-depth discussions with fellow community members and the project team in a forum focused on their unique needs.

Bringing public input and technical expertise together

Throughout the study, the technical team was highly involved in the engagement process. Technical staff from a variety of backgrounds was on hand for all open house events to ensure stakeholders could ask questions and provide input about any aspect of the study. Technical staff also worked with stakeholders to help bring the community's ideas to life in design idea workshops. The core technical team was present at all engagement meetings and events to ensure stakeholder input was heard, and also brought back to the engineering table to directly inform design ideas and outcomes.

Short-term recommendation input

The short-term recommendations for the study area were of particular interest to stakeholders because they are anticipated to be implemented within five years (pending funding). When the short-term recommendations were first presented, the project team received feedback from stakeholders about concerns and questions related to the impacts of the recommendations on adjacent communities. In response, the project team revised their engagement plan and added two meetings each with the Montgomery Community Association and the Community Advisory Group. In these meetings technical experts participated with stakeholders to review each modification that was being suggested within the short-term recommendations and then worked to refine the modifications to better meet stakeholder needs. This led to some modifications being eliminated from consideration, while others were added or refined based on the feedback



Adding a public engagement opportunity

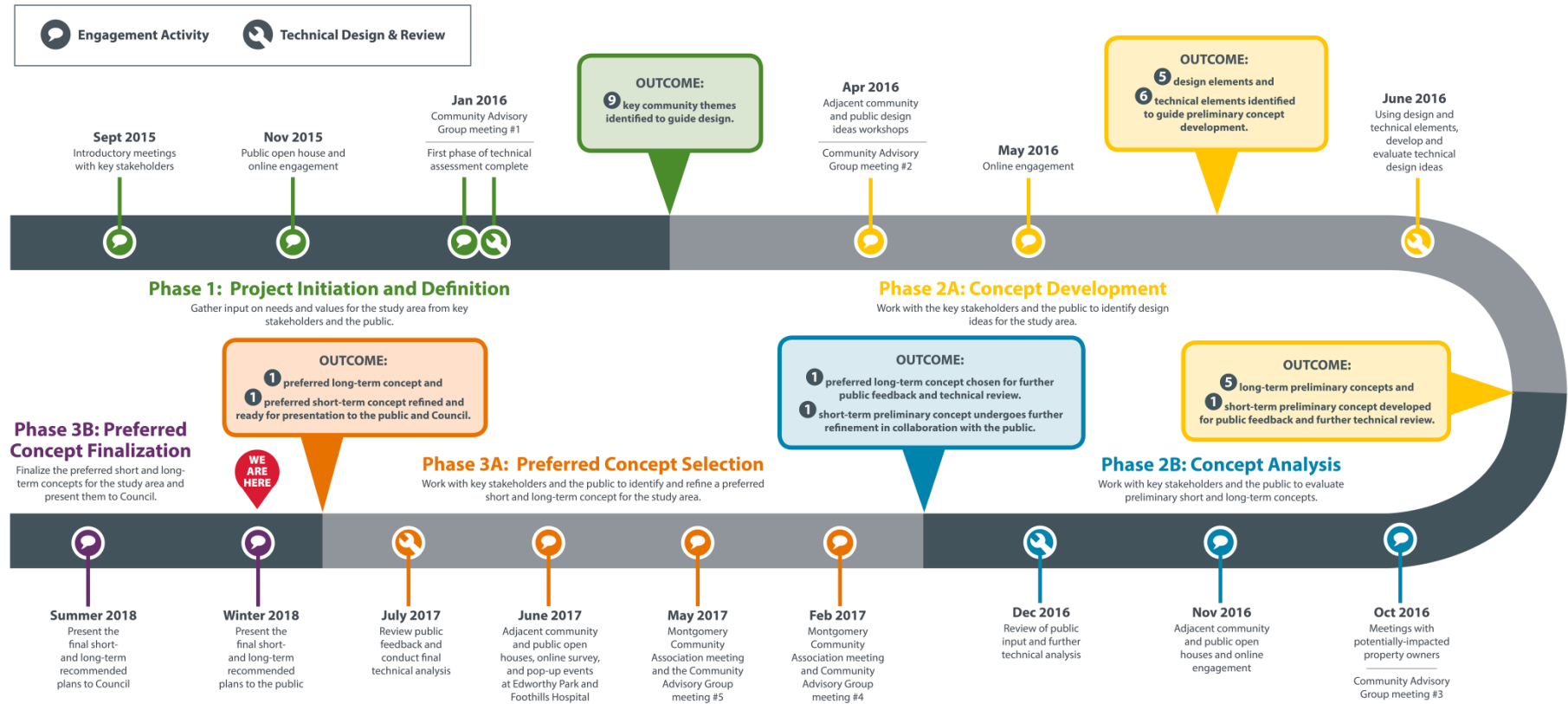
After refining short-term recommendations with key stakeholders, the project team wanted to ensure that both the short- and long-term recommendations fully considered community needs. To give stakeholders an additional opportunity to provide feedback, the project team added a public engagement opportunity to the original plan. During this engagement, adjacent communities and the public were presented with the refined short-term recommendations and the preferred long-term recommendation for review. By adding this opportunity for stakeholders and the public to learn about the changes and provide feedback on the plans, the project team was able to make final adjustments to the designs to ensure they reflected community needs as much as possible.

1.4 Engagement Activities

The table below provides an overview of the engagement activities used to gather feedback from stakeholders and the public over the course of the study

Phase	Engagement Activity	Date	Participants
1	Pre-engagement stakeholder meetings	October 7 – November 23, 2015	6 stakeholder groups
	Public open house	November 19, 2015	115
	Online feedback	November 19 to December 3, 2015	11
2A	Design idea workshops	April 9, 2016	60
	Online feedback	May 11 – 25, 2016	171
2B	Adjacent communities and public open houses	November 23 & 24, 2016	68
	Online feedback	November 23 – December 12, 2016	272
3A	Adjacent communities and public open houses	June 13 & 14, 2017	69
	Online feedback	June 14 – July 4, 2017	74
	Pop-up events (Edworthy Park and Foothills Hospital)	June 26, 2017	118
3B	Public information session	March 17, 2018	54
	Public information session at Montgomery Main Streets Open House	March 21, 2018	168

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1.5 Stakeholders

Engagement events were promoted to a broad group of stakeholders including:

- Residents and businesses in the adjacent communities of Montgomery, Parkdale, and Point McKay
- Residents and business in surrounding communities e.g. Bowness, St. Andrews Heights, University Heights
- Calgarians – General Public
 - People who work in and walk, bike, drive, or take transit through the area, e.g. employees at Foothills Medical Centre, and Edworthy Park users
- Community associations, e.g. Montgomery Community Association, Bowness Community Association, Parkdale Community Association, etc.
- Planning committees, e.g. South Shaganappi Area Strategic Planning Committee
- Special interest groups, e.g. Bike Calgary, Business Revitalization Zones, Calgary River Valleys
- Large institutions in the area, e.g. schools, universities, health care services
- City Councillors
- City of Calgary staff

Communication with stakeholders included a variety of strategies and tactics, which are described in more detail in Section 5.0 of this report.

1.6 Community Advisory Group

In addition to broad stakeholder communications, a Community Advisory Group (CAG) was established in December 2015 to provide ongoing advice to the project team about community needs and interests. Members were chosen through an expression of interest process that asked Calgarians to submit an application for membership to the CAG. The City of Calgary in consultation with the project team selected 17 members to represent a variety of community interests, including:

- Surrounding businesses and business associations
- Surrounding communities and community associations
- Community non-profit organizations
- Community services
- General public

The CAG was instrumental in developing relationships and maintaining an ongoing dialogue between the project team and the stakeholder groups associated with the south end of Shaganappi Trail. The CAG met throughout the study to provide advice to the project team on:

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- Community ideas, interests and needs;
- Opportunities to connect with the public and obtain public input;
- Evaluation criteria for design concepts;
- Design elements;
- Preliminary long-term design concepts;
- Short-term recommended plans; and
- Striking an appropriate balance between community, public and transportation network needs

Community Advisory Group members

CAG members included representatives from:

Organization / Representatives
Bowness Community Association
St. Andrews Heights Community Association
Varsity residents
University of Calgary, Facilities Development
University of Calgary, West Campus, Senior Development Manager
Alberta Health Services, Planner
Bike Calgary
Montgomery Community Association
Montgomery Business Revitalization Zone
University Heights Community Association
Point McKay Community Association
Parkdale Community Association
Northwest Storage
Parkdale residents
Montgomery residents
Calgary River Valleys
Study area commuters

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Community Advisory Group meetings

Six meetings were held with the Community Advisory Group on the following dates:

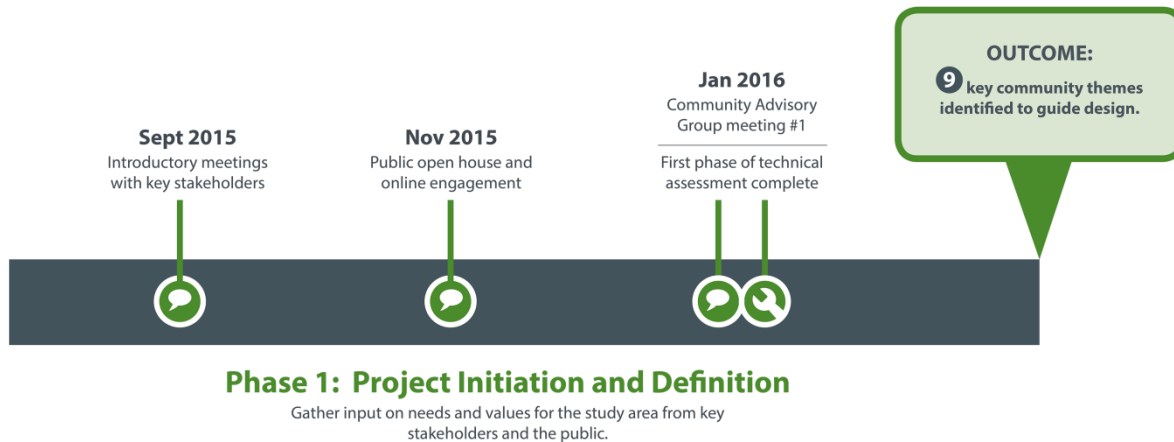
Meeting	Date	Time	Location	Topic
1	January 20, 2016	6:30 to 8:30pm	Montgomery Community Association	Review Terms of Reference, and assist with the development of evaluation criteria
2	April 26, 2016	6:30 to 8:30pm	Foothills Academy, Wellness Centre	Review design ideas and technical elements to inform development of preliminary design concepts for the study area
3	October 25, 2016	6:30 to 8:30pm	Foothills Academy, Wellness Centre	Review preliminary design concepts for the study area
4	March 7, 2017	6:30 to 8:30pm	Foothills Academy, Wellness Centre	Review short-term recommendations for the study area
5	May 31, 2017	6:30 to 8:30pm	Foothills Academy, Wellness Centre	Review the revised long-term and short-term recommendations for the study area.
6	March 15, 2018	6:30 to 8:30pm	Foothills Academy, Wellness Centre	View the finalized long-term and short-term recommendations for the study area

In addition to the Community Advisory Group meetings, the project team met specifically with the Montgomery Community Association on three occasions to review design impacts for their community:

Meeting	Date	Time	Location	Topic
1	March 1, 2017	6:30 to 8:30pm	Montgomery Community Association	Review short-term recommendations for the study area
2	May 30, 2017	6:30 to 8:30pm	Montgomery Community Association	Review the revised long-term and short-term recommendations for the study area.
3	March 14, 2018	6:30 to 8:30pm	Montgomery Community Association	View the finalized long-term and short-term recommendations for the study area

2.0 Phase 1: Project Initiation and Project Definition

Phase 1 involved introducing the study to stakeholders and the public, and working to better understand specific community interests and values surrounding the study area. This phase involved broad communications to ensure a variety of viewpoints and perspectives were heard. This phase also included establishing and hosting the first meeting of the Community Advisory Group.



2.1 Engagement activities – What we asked

In Phase 1, engagement activities focused on working with stakeholders and the public to understand their interests, values, challenges, and to identify issues that they felt needed to be addressed. Engagement activities explored stakeholder and public values and their vision for the future of the area, by asking questions like:

- What areas of your community are most important to you and why?
- What areas of your community would you like to see changed and why?
- What do you envision for the future of the south end of Shaganappi Trail?
- What is the one most important thing the project team needs to know about your community and why?

Calgarians were invited to provide input on the study during a number of engagement opportunities, including:

Stakeholder meetings

The study team met with business groups and community associations to introduce the South Shaganappi Study and to better understand valued places, as well as the communities' values and vision for the future.

Meetings were held with the following groups:

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Group	Date
South Shaganappi Area Strategic Planning Group (SSASPG)	October 7, 2015
Montgomery Business Revitalization Zone	October 30, 2015
Bowness Community Association	November 4, 2015
Montgomery Community Association	November 10, 2015
St. Andrews Heights Community Association	November 16, 2015
Bowness Business Revitalization Zone	November 23, 2015

Public Open House

A public open house was held on November 19, 2015 to introduce stakeholders and public to the study, gather feedback on the community's values and vision for the study area, and to give participants an opportunity to meet and ask questions of the study team. 115 people attended the event. This event included opportunities for open dialogue and a written comment form to rate the value of the open house and for participants to provide additional comments. The event also included two interactive engagement displays:



- **A scrawl wall** – The scrawl wall provided participants with a place to answer the questions ‘When you think about the future, what do you envision for the south end of Shaganappi Trail?’ and ‘What is the one most important thing the project team needs to know about your community?’
- **An interactive community values map** – This aerial map of the study area provided participants with an opportunity to ‘Tell us what matters to them in their community’ by marking important places and routes on the map using string, pins, and sticky notes.

Online Feedback

An online feedback opportunity was made available between November 19 and December 3, 2015 for those who had additional comments to share or were unable to attend the open house. 11 people provided comments via the online feedback. Participants were asked about the areas

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in need of change and/or preservation, their ideas for the future of the south end of Shaganappi Trail, and the most important thing for the project team to understand about the study area.

Community Advisory Group Meeting #1

The first Community Advisory Group meeting was held on January 20, 2016 and focused on establishing the Terms of Reference for the group and gathering input on evaluation criteria for the study. In particular, members were asked to:

- Review and comment on the Terms of Reference
- Provide input on how to include important community considerations in the study's evaluation criteria

Participants were asked to provide input during group discussions through:

- **Round table discussion:** A group discussion provided participants with an opportunity to comment on and ask questions about the proposed Terms of Reference for the group.
- **Table exercise:** The group broke into two to review the study's goals and objectives and to provide feedback on how the study's evaluation criteria could best reflect community values and needs.

2.2 What we heard

Input from meetings, the open house, the online survey, and the Community Advisory Group revolved around eight main community considerations:

Safety

Safety was a dominant theme with study participants. Traffic turns and pedestrian crossings were repeatedly mentioned as areas of concern.

Traffic flow & connectivity

Participants expressed interest and concern over traffic flow; specifically how the south study connects to the north study and how traffic flows onto 16th Avenue particularly westbound but eastbound as well. There were discussions around turning times and ease of access along Shaganappi Trail.

Pedestrian and bicycle access

Participants expressed concerns about access points for pedestrians and bicycles and noted interest in building those access points while keeping their destination in mind. There was some interest in separating bicycles from other pathways but a general consensus to ensure connectivity to the community.

Community connectivity

Participants reflected the need to join the communities on either side of Shaganappi Trail. Montgomery was mentioned numerous times as being separated by 16 Avenue, and

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participants saw Shaganappi Trail as an opportunity to unite the communities of Montgomery, Point McKay, and Parkdale.

Accessibility to businesses

Accessibility to area businesses was noted as an important consideration. This included access to the West Campus development, Alberta Children's Hospital, Foothills Medical Centre, Market Mall, and businesses in the Point McKay area.

Land use – parks, pathways and parking lots

Participants indicated that the Bow River Pathway parking lot is well utilized by businesses and other Calgarians. A number of participants expressed interest in maintaining and enhancing this space. There was interest in integrating more park, environmental and recreational uses for the land as well as creating a more walkable area. Participants also felt that parking should be considered.

River crossing

Participants reflected that the removal of the river crossing puts more pressure on Crowchild Trail. There was also some relief that a bridge would not be built to run into Edworthy Park. In addition, participants expressed concerns over flooding and public safety.

Open house organization

Generally, participants were satisfied with the layout of the room, the information that was provided and the staff that was available to answer questions. There was reference to appreciating the historical information that was displayed, and some interest in seeing more tangible ideas such as design concepts, although the mapping activities were mentioned numerous times as being a good idea.

Quotes from participants

"Would be nice to have pedestrian connection along Bowness Rd. connecting Montgomery and Parkdale in addition to the River pathway."

"Would love to have a walkable community of restaurants boutiques and service centers around the east side of Shaganappi and south of 16 Avenue."

"I do not want more traffic cutting through Montgomery."

2.3 How we used the input

The input gathered through Phase 1 was used to develop nine key community themes. These themes were used to guide the development and evaluation of design ideas and preliminary concepts in Phase 2.

The nine key community themes developed through Phase 1 were:

1. Safe movement for all modes of transportation through the study area
2. Efficient traffic flow through the study area
3. A balance between the needs of people who walk, bike, take transit, and drive
4. Easy access to local businesses
5. Connections between communities
6. Quality of life in adjacent communities
7. Environmental health
8. Planning for future growth in the area
9. Seeing the study area as part of the City's transportation network (an integrated view of the study area)

2.4 Key outcomes of Phase 1

The key outcomes of Phase 1 included:

1. The project team identified and began to establish relationships with key stakeholders.
2. The Community Advisory Group was established and met for the first time.
3. The project team engaged with stakeholders and the public to identify community interests, values, and challenges, and to identify issues that need to be addressed.
4. The project team identified nine key community themes to guide the development of design ideas.
5. The project team adjusted the engagement approach for Phases 2 and 3 to ensure adjacent communities were able to provide input in a forum that met their unique needs.

2.5 Lessons learned

The project team took valuable communication and engagement lessons away from Phase 1 including:

Interactive activities can create positive conversation about the things that matter most to stakeholders and the public

The interactive mapping exercise used at the first public open house was positively received by participants and helped them identify the areas of their community that were most important to them. The exercise also allowed participants and the project team to visualize the areas of greatest value in relation to the study area and opened discussions about the ways in which the study could benefit or impact adjacent communities. This activity provided insight into ideas and values, and provided an opportunity for the project team to open important dialogue with stakeholders and the public.

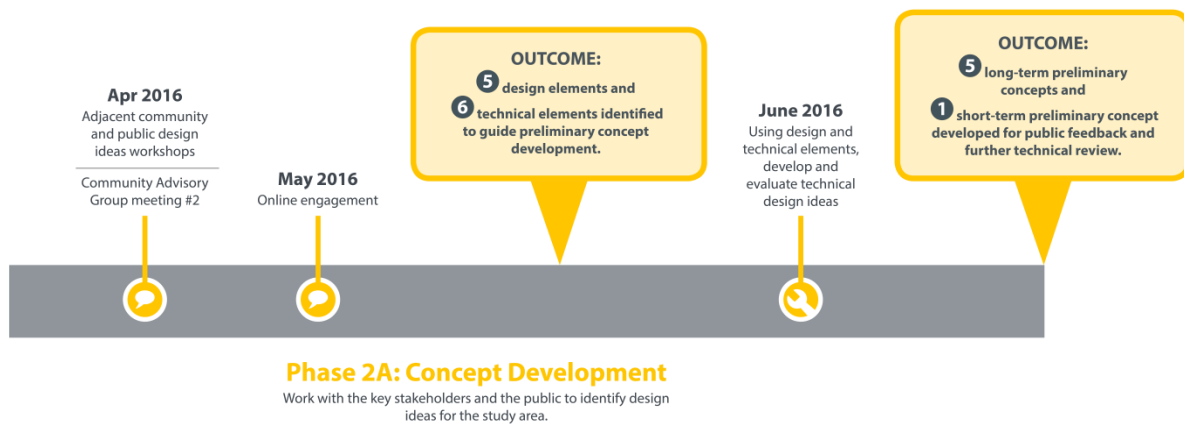
Stakeholders appreciate a personal and proactive approach to communications

Postcards were developed to invite businesses in the study area to the first public open house. Postcards were hand delivered to businesses throughout adjacent communities, providing an opportunity for the project team to speak directly with business owners and managers. This approach was well received and effective relationships were developed with many owners expressing their gratitude for the proactive and personal outreach, and for the opportunity to ask questions of a project team member. By reaching out directly and early in the engagement process, the project team communicated to stakeholders that their perspectives were valued and desired. This tactic created a connection and helped develop relationships with the project team that generated interest in the engagement process and helped to bring a variety of stakeholder voices to the study.

3.0: Phase 2: 2A Concept Development & 2B Concept Analysis

3.1 Phase 2A: Overview

Phase 2A Concept Development involved the creation of different potential design concepts with the community. Design idea workshops brought the public and technical staff together to begin sketching out potential designs. The 11 designs created in the workshops were then distilled into common design and technical elements that were used by the technical team to design four preliminary long-term concepts and one preliminary short-term concept that were reviewed by the public in Phase 2B.



3.2 Phase 2A: Engagement activities – What we asked

Design Idea Workshops

On April 9 2016, the project team held two design idea workshops with adjacent community members and the general public to create potential design ideas for the study area. Workshops were divided into two sessions: one in the morning for the adjacent community residents of Montgomery, Parkdale, and Point McKay, and an afternoon session that was open to all Calgarians. 60 people participated in these sessions.



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Participants worked in groups of five-seven people. Each group had three project team members assisting in the design process: a facilitator, a note-taker, and a technical illustrator. The workshop sessions produced 11 different design idea drawings. In addition, participants also provided comments on the design idea drawings of other groups noting what they liked or did not like and why. Notes were also captured detailing each group's thought process and their considerations in designing the study area.

Community Advisory Group Meeting #2

The second Community Advisory Group Meeting was held on April 26, 2016 to review and provide input on the design and technical elements that came out of the design idea workshops and subsequent technical analysis.

Online Feedback Opportunity

After the CAG reviewed the design and technical elements, online engagement was developed to validate the elements and gather broad public input on any refinements stakeholders and the public wanted to see. The online opportunity also provided participants with information about the benefits and trade-offs of each element, and drew attention to important considerations for each. The survey ran from May 11 – 25, 2016 with a total of 171 responses.

3.3 Phase 2A: What we heard

The project team reviewed the 11 design idea drawings and all comments provided by workshop participants. During this review, the project team identified that nearly all the design idea drawings contained six common design elements. For example, many groups noted a desire to change the junction at Shaganappi Trail and 16th Avenue N.W., to address the way traffic flows along 16th Avenue N.W., and to create better connections for people who walk and bike. The project team decided to focus on these elements to ensure they were working with the best representation of the community's input.

In addition to the design elements, the project team identified four technical elements that were not developed by the public. It was also important to gather feedback on these in order to ensure effective concept creation. After reviewing the technical elements identified by the project team, CAG members identified one additional technical element for inclusion in the online feedback opportunity, bringing the total number of technical elements to five.

Quotes from participants

“There needs to be a clearly defined space for cyclists (bike lane) with equal access to spaces vehicles can travel.”

“Shaganappi and 16th functions well for what it is but if either were asked to take on additional traffic they would quickly become congested.”

“Walking paths are vital!”

3.4 Phase 2A: How we used the input

The input gathered through Phase 2A was used to finalize the six design elements and five technical elements that would guide the development of preliminary concepts in Phase 2B.

The six design elements developed and validated through Phase 2A were:

1. Change the design of the junction at Shaganappi Trail and 16th Avenue N.W. to improve the safety and traffic flow for all modes of transportation.
2. Encourage people who drive to take 16th Avenue N.W. by revisiting how the road functions within the study area.
3. Improve access and reduce traffic volume and speed on Bowness Road to better accommodate people who walk, bike, and take transit.
4. Explore how land within the study area could be used to improve the area.
5. Design safe and efficient movement for all modes of transportation through any at-grade intersections that may be developed.
6. Improve connections to surrounding communities, key destinations, and pathways for people who walk and bike.

The five technical elements developed and validated through Phase 2A were:

1. Improve access, amenities, and travel time within the study area for people who take transit and carpool.
2. Change the role of Shaganappi Trail south of 16th Avenue N.W. to support local and community traffic on Bowness Road.
3. Change how the roads connect to draw the communities of Montgomery, Parkdale, and Point McKay together.
4. Realign Shaganappi Trail to reduce the footprint of the roadway and free land for other uses.
5. Provide easy access to all roads in the study area so emergency vehicles can get to their destinations efficiently.

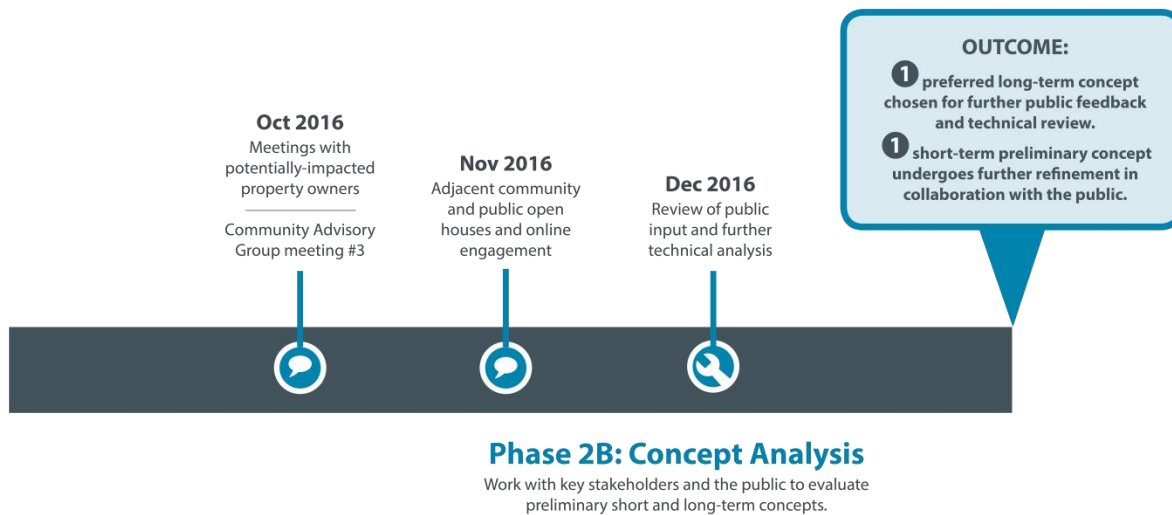
3.5 Key outcomes of Phase 2A

The key outcomes of Phase 2A included:

1. The Community Advisory Group met for the second time.
2. The project team engaged with stakeholders and the public to develop design ideas for the study area.
3. The project team finalized the six design elements and five technical elements they would use to guide the development of preliminary concepts in Phase 2B.

3.6 Phase 2B: Overview

Phase 2B Concept Analysis involved the evaluation of four preliminary long-term concepts and one preliminary short-term concept. This phase included meetings with property owners who may have been potentially impacted by the preliminary concepts, as well as an open house, online engagement, and technical analysis that led to the identification of one preferred long-term concept and further evaluation of the preliminary short-term concept.



3.7 Phase 2B: Engagement activities – What we asked

Meetings with Potentially Impacted Property Owners

In line with the priority of developing relationships and thorough communications, at the beginning of Phase 2B the project team met with property owners along Montgomery View to introduce them to the four preliminary long-term concepts and confirm the impacts to their homes were understood. The meeting focused particularly on the East-West Couplet preliminary concept. This concept, if chosen, could lead to property acquisition along Montgomery View, an impact the project team wanted to alert property owners to. In addition to discussing and answering questions about the preliminary long-term concepts, the project team explained the planning process, including how a preferred concept would be chosen, and the process and timelines for implementation.

Community Advisory Group Meeting #3

The Community Advisory Group met on October 26, 2016 to review the four preliminary long-term concepts for the study area. The short-term preliminary concept was not presented at this meeting, as it was still in development. During this meeting, CAG members were asked to review the concepts in detail with a project team member and to provide feedback about the concepts. The group also offered feedback about the way in which preliminary concepts were

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being presented and offered suggestions for improvements prior to the next in-person and online engagement opportunities.

Open Houses

Two open houses were held on November 23 and 24, 2016 to gather input on the preliminary concepts for the South Shaganappi Study. The first open house was for adjacent community residents of Montgomery, Parkdale and Point McKay and was attended by 31 people. The second open house was for all Calgarians and was attended by 37 people.

At the open house participants viewed display panels that presented the four preliminary long-term concepts:

- At-Grade Intersection concept
- Tight-Diamond Interchange concept
- Hybrid concept
- East-West Couplet concept

Participants were also presented with a no-build concept and a preliminary short-term concept for the study area.

Participants were provided with feedback forms and asked to evaluate the different concepts against the study's objectives and community themes. For the preliminary short-term concept, participants were asked to provide feedback on post-it notes about what benefits, challenges and changes they noted for the recommendations.

Online engagement

In addition to the open houses, an online engagement opportunity was provided between November 24 and December 9, 2016. The online tool included the same information and requested the same feedback as the open house. There were 2465 unique visits to the online tool that generated a total of 272 comments on the concepts.

3.8 Phase 2B: What we heard

Through Phase 2B, stakeholders and the public identified benefits, challenges, and potential



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changes to each of the preliminary long-term concepts, the no-build concept, and short-term preliminary concept as follows:

Concept	Benefits	Challenges	Changes
At-Grade Intersections	<ol style="list-style-type: none"> 1. An expected lower cost for infrastructure; 2. Potential future uses for land that is not used; 3. Connections for people who walk and bike; 4. A reduction in vehicle traffic speed and equal flow in all directions. 	<ol style="list-style-type: none"> 1. Additional signalized intersections are generally viewed as negative; 2. Additional signalized intersections contribute to slower commute times and less flow; 3. Intersections may be intimidating for people who walk to cross. 	<ol style="list-style-type: none"> 1. Continue to look at possible infrastructure to enhance safety for people who walk and bike.
Tight-Diamond Interchange	<ol style="list-style-type: none"> 1. Traffic flow on 16th Avenue because there are no signalized intersections; 2. It is a safe and efficient concept for all modes 	<ol style="list-style-type: none"> 1. Higher cost of infrastructure; 2. Increased number of signalized intersections on Shaganappi Trail; 3. Connections for people who walk and bike; 4. Preference to maintain an exit from 16th Avenue eastbound to Bowness Road. 	<ol style="list-style-type: none"> 1. Look at all possible options for Shaganappi Trail intersections, concern of congestion and reduced safety with two signalized intersections so close in proximity.
East-West Couplet	<ol style="list-style-type: none"> 1. The concept is easy to understand for people who drive and provides some flow; 2. Vehicle speeds are reduced by signalized intersections; 3. There may be a lower infrastructure cost. 	<ol style="list-style-type: none"> 1. Too many signalized intersections leading to traffic congestion and lack of flow; 2. Some impact to Montgomery property owners; 3. There may be less land for potential future use. 	<ol style="list-style-type: none"> 1. Signalized intersections would have to be optimally timed to limit congestion.
Hybrid	<ol style="list-style-type: none"> 1. Traffic flow for people who drive; 2. Connections for people who walk and bike 	<ol style="list-style-type: none"> 1. Traffic flow for people who drive; 2. Difficulty crossing 16th Avenue for people who walk and bike; 3. Potential higher cost of infrastructure. 	<ol style="list-style-type: none"> 1. Explore additional safe infrastructure for crossings of 16th Avenue for people who walk and bike.

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No-build	<ol style="list-style-type: none"> 1. Lowest cost option short-term; 2. The current design is understood by frequent users. 	<ol style="list-style-type: none"> 1. There were many perspectives based on different uses. 	<ol style="list-style-type: none"> 1. There were many perspectives based on different uses.
Short-term preliminary concept	<ol style="list-style-type: none"> 1. Removal of 16 Avenue westbound to Shaganappi Trail southbound; 2. Attention and willingness to integrate connections for people who walk and bike. 	<ol style="list-style-type: none"> 1. May add traffic in Montgomery through Bowness Road; 2. Addition of signalized intersections may reduce traffic flow; 3. Clarity on the cost/benefit for short-term; is it worth it? 	<ol style="list-style-type: none"> 1. Information about the benefits and impact considerations of the 43rd Street and 16th Avenue signalized intersection; 2. Look at optimal alignment for a safe merge from eastbound 16th Avenue to northbound Shaganappi Trail.

With regards to the short-term preliminary concept, Community Advisory Group members and members of the Montgomery Community Association expressed concern that the concept could have significant impact on the amount of cut-through traffic being directed through the Montgomery community. In response, an additional engagement opportunity was added to Phase 3 to ensure CAG members and Montgomery Community Association members could meet with the project team to review the plans and suggest modifications as necessary (See Phase 3A in the following section of this report).

Quotes from participants

“Significantly less traffic on Bowness Road is a benefit.”

“This [tight-urban diamond] seems to be the best option at achieving the desired goals. Free flow 16th; reasonable access on/off Shaganappi; limited. Bowness traffic. Looks good!”

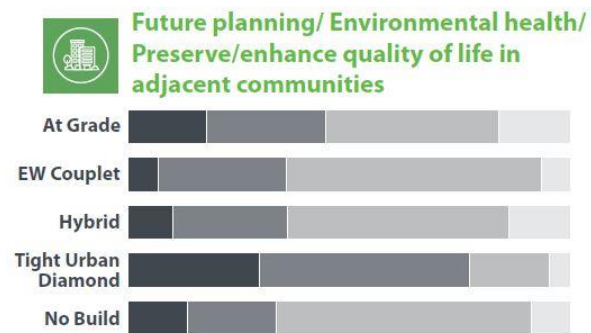
“It seems to me that traffic at these intersections will back up significantly. As a cyclist I would feel less safe when drivers are impatient and urgent in making left turns.”

3.9 Phase 2B: How we used the input

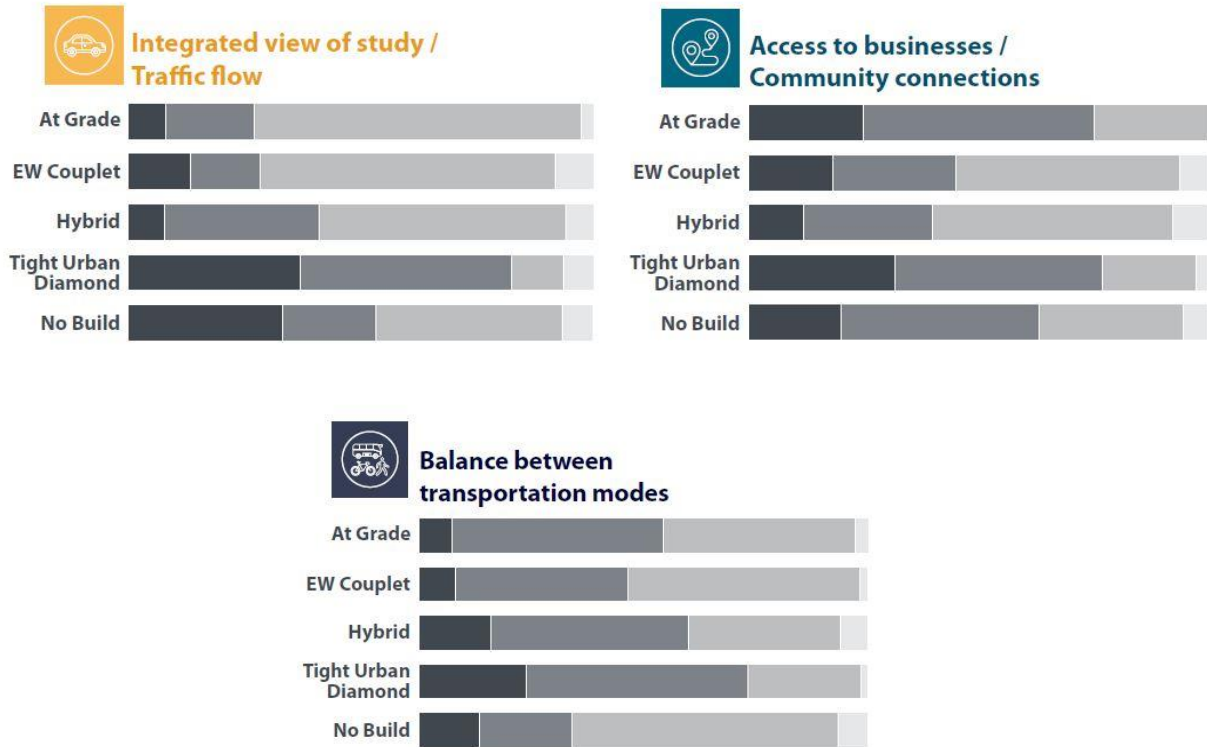
The input gathered through Phase 2B was used to identify the preferred long-term recommended plan. The evaluation of the five concepts (four preliminary concepts and the no-build concept) was done using a multiple accounts evaluation (MAE). The MAE included public input as one of the accounts.

Feedback on long-term preliminary concepts

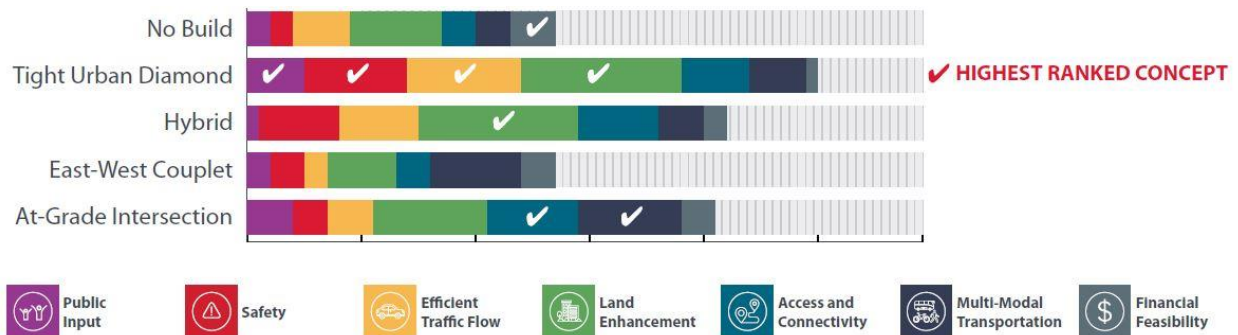
Public evaluation of the different concepts identified the Tight-Urban Diamond concept as the preferred concept. The results below reflect the public's evaluation of the different concepts against community values and project objectives:



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Within the overall MAE, the Tight-Urban Diamond was also the highest ranked concept, and moved forward for final review and refinement in Phase 3B.



Feedback on preliminary short-term concept

The preliminary short-term concept was identified as needing a detailed review in collaboration with specific stakeholders, and was moved forward for further engagement in Phase 3A.

3.10 Key outcomes of Phase 2B

The key outcomes of Phase 2B included:

1. The Community Advisory Group met for the third time to provide feedback on the four preliminary concepts.
2. The project team engaged with stakeholders and the public to gather feedback on four preliminary concepts, a no-build concept, and a short-term preliminary concept for the study area.
3. The project team identified the Tight-Urban Diamond concept as the preferred preliminary long-term concept.
4. The project team initiated additional engagement with the Montgomery Community Association and the Community Advisory Group to evaluate and modify the short-term preliminary concept to better meet community and stakeholder needs.

3.11 Lessons learned from Phases 2A & B

The project team took valuable communication and engagement lessons away from Phases 2A&B including:

Bringing technical experts together with stakeholders and the public helps to create design options that are truly reflective of community needs and values.

In the design idea workshops, transportation engineering staff was brought together with stakeholders and members of the public to develop potential designs for the study area. This process resulted in the creation of multiple design options for the study area. When compared against each other, the designs were revealing. Although each design was different, they all had common elements that attempted to deal with the same community needs and values in different ways. By identifying these common design elements, the project team was able to better understand the core needs and values of the community and ensure those were top of mind during the creation of the preliminary design concepts.

Bringing technical experts together with stakeholders and the public can develop relationships and lead to improved communication about the project.

In addition to ensuring the preliminary design concepts were reflective of community needs and values, the designs generated by the workshops were also helpful in understanding how to better communicate to the public about the project. The workshop designs revealed common technical elements that were missed by workshop participants during the design exercise, and

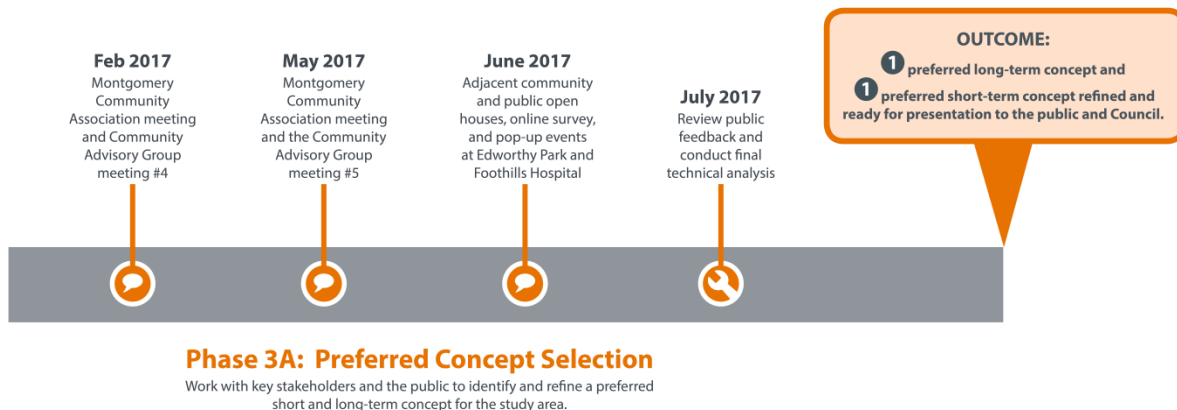
South Shaganappi Study Engagement Summary Report

those needed to be considered during the development of preliminary design concepts. It was clear that more effective communication about the technical needs of the project were needed. In response, the project team developed a list of technical elements and ensured these were included in Phase 2B communications. By identifying these technical elements, the project team was able to communicate back to the public about the key technical considerations that were also guiding design of the study area in a way that made sense to everyone.

4.0: Phase 3: 3A Preferred Concept Selection & 3B Preferred Concept Finalization

4.1 Phase 3A: Overview

Phase 3A Preferred Concept Selection involved presenting the preferred long-term concept to stakeholders and the public, and working with stakeholders to modify the preliminary short-term concept and shape it into a final preferred concept. Using the feedback provided through this phase, the technical team refined the preferred long-term and short-term concepts for final presentation to the public and Council in Phase 3B.



4.2 Phase 3A: Engagement activities – What we asked

Community Advisory Group Meeting #4 and Montgomery Community Association Meeting #1

The Montgomery Community Association met with the project team on March 1, 2017 for the first time to provide feedback on the preliminary short-term concept for the study area. The Community Advisory Group met on March 7, 2017 for the fourth time to also provide feedback on the preliminary short-term concept. These meetings were the result of concerns raised through Phase 2B about the impact of the short-term recommended plan on adjacent communities.

The short-term recommended plan was presented to the groups and existing problem areas were highlighted. Each modification being suggested was then presented and discussed individually. The groups were asked to provide feedback on each modification and to suggest any areas of concern the project team may have missed.

Community Advisory Group Meeting #5 and Montgomery Community Association Meeting #2

The Montgomery Community Association met with the project team on May 30, 2017 to provide feedback on the revisions that were made to the preliminary short-term concept based on their feedback, and to review the draft long-term recommended plan. The Community Advisory Group met for the fifth time on May 31, 2017 to also provide input on the revised preliminary short-term concept, and to review the draft long-term recommended plan.

The revised short-term recommended concept was presented to the groups and once again, each modification was addressed and discussed individually. Groups were asked to validate the changes that had been made and to make suggestions for further improvements. The draft long-term recommended plan was also presented to the groups for feedback.

Open Houses

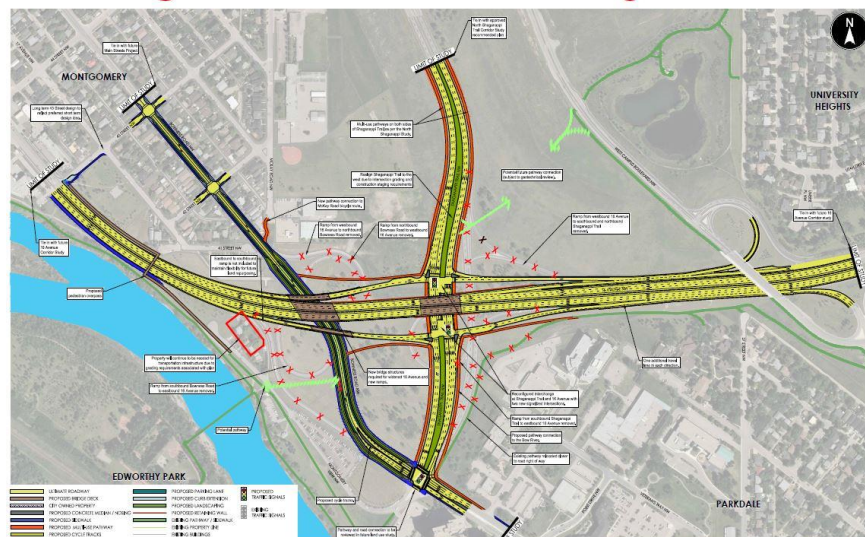
Two open houses were held on June 13 and 14, 2017 to gather feedback on the draft short- and long-term recommended plans for the study area. In addition, as a result of further consultation with stakeholders on the short-term recommended plans, potential options for the redesign of 43rd Street were also presented in the interest of improving travel for people who walk and bike along this corridor.

The first open house was for adjacent community residents of Montgomery,

Parkdale and Point McKay and was attended by 30 people. The second open house was for all Calgarians and was attended by 39 people. Participants were presented with the short- and long-term recommended plans along with information on the evaluation process used to arrive at the recommended plans, the estimated costs, and infrastructure funding process.

Participants were provided with a feedback form and asked to identify any improvements they saw for the short- and long-term recommended plans. The form also asked them to identify the benefits and challenges they saw to each of the options for the 43rd Street configurations that were presented, and to comment on the value of the open house.

Draft Long-term Recommended Plan: Tight Urban Diamond



Online Engagement

An online engagement opportunity was available on The City's Engage website at engage.calgary.ca from June 14 to July 4, 2017. It included the same information and requested the same input as the open house events. There were a total of 1515 public visits to the engage website with 42 public that contributed feedback.

Community Pop-up Events

Two pop-up events were held, at Foothills Medical Centre and Edworthy Park, to capture input from hospital employees, patients and visitors, and those using the Bow River Pathway, Edworthy Park, and South Shaganappi parking lot. These events were held on June 26, 2017. A total of 94 people visited the pop-ups, and were provided with an overview of the draft recommended plans and directed to the online engagement to provide their input.

4.3 Phase 3A: What we heard

Community Advisory Group and Montgomery Community Association Meetings

During the review of the proposed and revised preliminary short-term concept, the Montgomery Community Association and the Community Advisory Group discussed several key considerations including:

- The capacity of the design to handle traffic volumes at peak times
- Safety for people who walk and bike through the study area, using a variety of methods including sensors and raised crossings
- The mitigation of cut-through traffic in Montgomery
- The configuration of the intersection of 43rd Street and 16th Avenue to ensure safety for those who walk and bike through this area, and to maintain the safety of families utilizing the playground near this intersection

When reviewing the draft long-term recommended plan, the groups discussed considerations that included:

- Ensuring ramps from 16th Avenue will accommodate increases in traffic volumes
- Monitoring for future traffic growth and needs
- River bank stability

Open House, Online Engagement, and Community Pop-up Events

The draft short- and long-term recommended plans generated comments regarding the impact of plans on residents and those who drive through and use the amenities and services in the area. In particular, participants noted considerations around:

- The impact of additional signals on traffic flow through the study area
- Ensuring plans provide easy access to communities and businesses from Bowness Road

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- The possibility that people who drive will use residential streets in the Montgomery community to bypass areas of congestion
- Ensuring plans provide easy connections for people who walk and bike through the study area

Participants noted a desire for more information on historical decisions about the study area (i.e. the removal of the bridge crossing), construction timing and potential impact to nearby residents, and some of the design decisions made within both the draft short- and long-term plans.

Regarding the three ideas for the design of 43rd street, the majority of participants who responded noted the 'right-out only' design had the most benefits. Benefits included the potential reduction in traffic volumes along 43rd Street and the fact that the design maintains bus routes and convenience of access to the area for residents

Generally participants provided positive feedback regarding the engagement process, including appreciation that the study has given the public an opportunity to comment on many elements and scenarios. Participants also noted they felt community feedback had been well integrated in the decision-making process.

Quotes from participants

"Instead of using button activated pedestrian lights, use non button, automatic lights. This way when a pedestrian or cyclist arrives after a light change, they won't have to wait until a whole cycle of light changes or be tempted to cross without a walk light."

"I live at the corner of Bowness Road and 43rd Street. The number of near misses with vehicles and pedestrians, cars driving around south turning vehicles without consideration for the high pedestrian and bicycle traffic has been a concern for the 17 years we have lived here."

"This plan works well and addresses the issues and preferences from locals at the workshops."

"Not sure that there is enough benefit from this [short-term] proposal to be worth the cost of construction."

4.4 Phase 3A: How we used the input

The input gathered through Phase 3A was used to make refinements and finalize the short- and long-term recommended plans. The refinements arising from the feedback gathered in Phase 3A included:

- Identifying a suggested right-out-only modification at 43rd Street and Bowness Road to ensure safety for those who walk and bike through this area, and to maintain the safety of families utilizing the playground near this intersection (this modification to be considered as part of the Montgomery Main Streets - Bowness Road N.W. project)
- Adding infrastructure to support the safe movement of people who walk and bike through the study area (e.g. pedestrian overpasses, multi-use pathways etc.)
- Modifying ramp configurations to better accommodate future traffic volume growth
- Identifying potential future modifications to ensure traffic flow is maintained through the study area

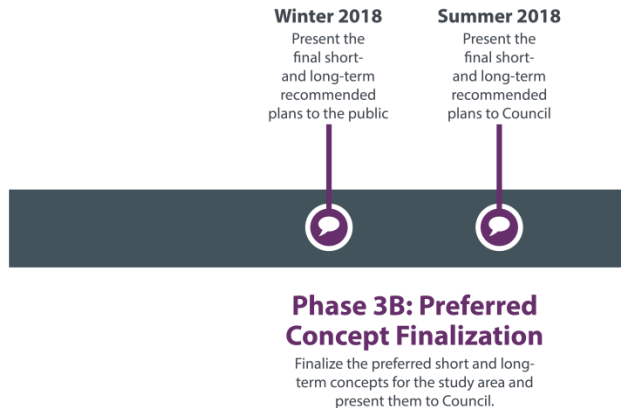
4.5 Key outcomes of Phase 3A

The key outcomes of Phase 3A included:

1. The Community Advisory Group met for the fourth and fifth time.
2. The Montgomery Community Association met with the project team twice.
3. The project team gathered feedback on the draft short- and long-term recommended plans from stakeholders and the public.
4. The project team refined and finalized the short- and long-term recommended plans for presentation to stakeholders and the public in Phase 3B.

4.6 Phase 3B: Overview

Phase 3B Preferred Concept Finalization involved completing final technical analysis and refinements, and presenting the final short- and long-term preferred concepts to the public and Council.



4.7 Phase 3B Engagement activities – What we asked

Community Advisory Group Meeting #6 and Montgomery Community Association Meeting #3

At these meetings members reviewed and asked questions about the final short- and long-term recommended plans. The groups particularly focused on the most recent changes to the plans, including improved accommodations for people who walk and bike, as well as adjustments to ensure future traffic volumes are accommodated.

Members also reviewed the engagement process for the study and were introduced to the related projects that are overlapping with or occurring close to the South Shaganappi Study.

Information Session Overview & Montgomery Main Streets Open House

The information session introduced participants to the final recommended short- and long-term plans. Participants at the information session were asked to review the final short- and long-term recommended plans and ask questions of the project team. They were also asked to comment on the success of the information session and the overall engagement process for the study.

As an extension of the information session, the project team also attended the Montgomery Main Streets open house, introducing



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participants to the final recommended short- and long-term plans and inviting them to ask questions of the project team.

4.8 Phase 3B: What we heard

Montgomery Community Association Meeting and Community Advisory Group Meetings

These groups noted a few considerations for the short- and long-term recommended plans moving forward, including:

Short-term considerations:

- Ensuring crossings for people who walk and bike through study area are safe and easy to use
- Discouraging cut-through traffic with the design
- Installing pedestrian-scale lighting along the multi-use pathways
- Providing better drainage along the pathway at the south side of 16 Avenue

Long-term considerations:

- Ensuring easy movement for all modes through the study area
- Plans for land repurposing
- Ensuring that the design of the study area is built to be human-scale, safe, and walkable, and that it helps create community connections

Information Session & Montgomery Main Streets Open House

Feedback from respondents at the information session generally felt that the session provided clear information and that staff was able to answer their questions. The majority of participants felt they could see public input reflected in both the short and long-term recommended plans.

Other suggestions for future improvements to the engagement process included:

- Extending the time the information session was open and/or adding an additional date to give people more opportunities to participate
- Providing a digital rendering of the plans to allow people to experience it in 3D
- Providing information about how the plans go from the final recommended plan to final engineering design

Quotes from participants

"Thanks for giving residents of this community an opportunity for input! Always remember we live here and have to live with these changes."

"There needs to be increased parking for car-bike commutes from the west and north communities, especially with the water plant taking up space."

"Traffic lights controlling access off ramp from Parkdale Blvd west bound onto 16th Ave westbound are of questionable value."

4.9 Phase 3B: How we used the input

The input gathered through Phase 3B will be used to inform future engagement activities and where relevant, will be provided to other City of Calgary project teams working in and around the South Shaganappi study area. The information gathered will also be kept on file with the City of Calgary to inform the implementation of the recommended short- and long-term plans in the future.

4.10 Key outcomes of Phase 3B

The key outcomes of Phase 3B included:

1. The Community Advisory Group met for the final time.
2. The Montgomery Community Association met with the project team for the final time.
3. The project team presented the final recommended short- and long-term plans to stakeholders and the public.

5.0 Communications Strategies and Tactics

The communications strategy for the study focused on supporting the phased engagement approach. Tactics were designed to create awareness and understanding of the project, and to encourage participation in engagement activities. Communications focused on three main strategies:

1) Provide clear information about the study

Ensuring that stakeholders and the public had a clear understanding of the project was central to the communications strategy, because accurate information is the basis of meaningful engagement. This strategy included providing information such as the project background, goals, and objectives, and developing materials that met specific stakeholder needs. For example, a related projects map and information sheet.

Several tactics supported this strategy, including:

- **A project webpage and a project page on the Engage! platform** that provided clear and concise project information as well as ongoing information about engagement activities and outcomes
- **Project information sheets** including a general project information sheet, and a map providing information on related projects happening close to the study area
- **Engagement display boards** that were used at engagement events and posted online to explain the project, the engagement process, and to convey technical information about the study and concept development
- **A project email address and the 311 information line** were used to ensure that people could contact the project team or ask questions at any time throughout the study

2) Create a clear line of site between public input and the outcomes of each phase

Public input played a central role in the South Shaganappi Study, and significantly influenced the outcome of each phase. For this reason communications focused on ensuring that stakeholders and the public could clearly see where and how their input was being used.

Several tactics supported this strategy, including:

- **Project timeline infographics** that showed how and where public input and technical analysis were working together to produce outcomes and move the study towards preferred short- and long-term concepts
- **Icons and charts** that helped to clearly explain the benefits and challenges of different preliminary concepts using community-identified priorities
- **If-not-why-not explanations** that identified key community ideas that would not move forward in the study, and why the ideas would not be used

South Shaganappi Study Engagement Summary Report

- **What We Heard reports** to provide comprehensive reports on the input that was provided, including summaries of input and verbatim recordings of the feedback provided

3) Widely promote public engagement opportunities

Another important communications strategy was to ensure that engagement opportunities were widely promoted in the adjacent communities and beyond. In some cases this involved staff going out into the community to inform and engage people directly.

Several tactics supported this strategy, including

- **Hand-delivered postcards** to businesses in adjacent communities to create awareness of the project and promote the first open house event.
- **Postcards mailed to adjacent communities** to invite residents to attend adjacent-community-only events including the design idea workshops in Phase 2A, and the open houses in Phases 2B and 3A.
- **Signs in adjacent and surrounding communities** including Bold Signs in key locations and A-frame signage in Edworthy Park to promote public engagement events.
- **Community association newsletters** for communities near the study area were used to disseminate information about upcoming engagement events and encourage participation.
- **Emails to stakeholders and members of the public** who signed up for project updates provided information about upcoming events and encouraged participation.
- **Social media posts** including Facebook and Twitter posts on The City of Calgary's channels promoted event dates and times.
- **Website updates** ensured that the latest information about engagement opportunities were available to all Calgarians.

Combined together these strategies and tactics provided a strong support for engagement processes by ensuring that stakeholders and the public were well informed about the project, could clearly see how they were influencing the process and its outcomes, and understood exactly how and where they could be involved.

Glenmore Trail East Functional Planning Study

EXECUTIVE SUMMARY

The purpose of this study is to modify and replace the previous approved 2007 Alberta Transportation Highway 560 Functional Planning Study from Stoney Trail to Rainbow Road (Range Road 283). Modifying the long-term transportation plan will allow Administration to protect the required long-term right-of-way to provide full-access connectivity to accommodate the future land use plans in this area. The future land uses were identified from the previously approved area structure plans (ASP) prepared by The City - Shepard Industrial ASP (2009, amended 2013), and Rocky View County - Janet ASP (2014).

Glenmore Trail is part of the provincial Highway 560 operated by Alberta Transportation (AT), and is the border between The City of Calgary and Rocky View County (RVC). The Planning study was a collaborative project between AT, RVC, and The City of Calgary to ensure that all three governments objectives were accomplished. A major landowner to the south of Glenmore Trail, Ronmor Holdings Inc. also played a key role in the study. Throughout the study, all parties collaborated on the creation and design of concepts ensuring alignment with provincial and municipal guidelines and policies. The study area of the entire corridor from Stoney Trail East to Rainbow Road is shown in Attachment 1. 100 Street S.E. and 116 Street S.E. are located within The City of Calgary boundary, whereas Rainbow Road is outside city jurisdiction and located solely in the RVC.

Based on the technical evaluation and input from public engagement, the project team recommended three full-access diverging diamond interchanges (DDI) at 100 Street S.E., 116 Street S.E. and Rainbow Road as shown in Figures E.7 to E.9 in Attachment 2, Glenmore Trail East Functional Planning Study Executive Summary. In the previously approved 2007 AT Highway 560 Functional Planning Study, there was no access provided to 100 Street S.E. off Glenmore Trail. It is anticipated that the interchanges will not need to be constructed for over 20 years, based on the current land use and development assumptions in The City's Regional Transportation Model (RTM).

Once approved by Council, the required right-of-way for the long-term plan shall be protected and can be acquired on an opportunity basis in the future, as shown in Attachment 3, Long-term Property Requirements. There is no immediate need to purchase the additional required properties. A total of four distinct construction stages for delivering the recommended plan are identified, as shown in Figures E.11 to E.14 in Attachment 2.

ADMINISTRATION RECOMMENDATION:

That the SPC on Transportation and Transit recommends that Council:

1. Approve the Glenmore Trail East Functional Planning Study Report including the recommended interchange plans located within Calgary city limits identified in Figures E.7 and E.8 in Attachment 2.
2. Direct Administration to protect the required right of way for the long-term plan identified in Attachment 3.

PREVIOUS COUNCIL DIRECTION / POLICY

N/A

Glenmore Trail East Functional Planning Study

BACKGROUND

In 2007, AT completed the Highway 560:02 Functional Planning Study. The Study recommended the upgrade of Highway 560, known as Glenmore Trail in Calgary city limits, to a high-speed, six-lane divided highway with diamond interchanges at 116 Street S.E. and Rainbow Road, with no access to 100 Street S.E. The two originally-planned interchanges were located 400 metres west of 116 Street S.E. and along the existing alignment of Rainbow Road.

In 2009, AT agreed to The City's request to plan a half diamond interchange at 100 Street S.E. This request was made due to the closure of the intersection at 84 Street S.E. after the opening of Southeast Stoney Trail and the potential future developments in The City's Shepard Industrial Area Structure Plan on the south side of Glenmore Trail.

In 2013, AT agreed to the request to consider realigning the interchange at 116 Street S.E. Both approvals were subject to completion of an updated functional planning study for Glenmore Trail.

In 2014, RVC approved the Janet Area Structure Plan which outlines increased industrial / commercial land uses and long term plans for a regional business center north and east of the study area.

Since 2014, The City has taken the lead to conduct this functional planning study to plan interchanges at 100 Street S.E., 116 Street S.E. and Rainbow Road. Even though Rainbow Road is outside of Calgary's city limits, the previous interchange plan requires modifications due to the spacing distances required to accommodate full interchanges at 100 Street S.E. and 116 Street S.E.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

Road Network Classifications:

Glenmore Trail is a two-lane paved provincial highway, which is owned, operated and maintained by AT. It has a posted speed limit of 80 km/h west of 116 Street S.E. and 100 km/h east of 116 Street S.E. . It currently carries 19,000 vehicles per day east of Stoney Trail.

South of Glenmore Trail, 100 Street S.E. is under the jurisdiction of The City. It is a two-lane paved Industrial Arterial Road with a posted speed limit of 80 km/h. The traffic volumes are approximately 5,000 vehicles per day, of which 44% are trucks during morning peak hour. North of Glenmore Trail, 100 Street S.E. is under the jurisdiction of RVC.

South of Glenmore Trail, 116 Street S.E. is a two-lane gravel Rural Local Road with a posted speed of 80 km/h and is classified as an Industrial Arterial Road in The City's Glenmore Industrial Area Structure Plan. Today, the traffic volumes on the south leg of 116 Street S.E. are very minimal as only local traffic uses this road. North of Glenmore Trail, 116 Street S.E. is a two-lane paved Rural Road, under the jurisdiction of RVC.

Rainbow Road is under the jurisdiction of RVC and is a two-lane paved Rural Local Road with a posted speed of 80 km/h. It is classified as a Major Roadway in RVC's Janet ASP.

Glenmore Trail East Functional Planning Study

Existing Traffic Analysis and Future Prediction:

Based on the existing traffic volumes and signal timings, eastbound traffic and northbound traffic have travel delays during AM and PM peak hours at the 100 Street S.E. intersection. Vehicles making an eastbound left turn can be delayed approximately 290 seconds before completing their turn movement. Vehicles making a northbound left turn are delayed by approximately 113 seconds before completing their turn movement.

For the future traffic prediction, the 2039 horizon year was used from The City's RTM. The assumed land uses were taken from the information documented in the previous ASPs and Traffic Impact Assessments (TIA), including the Shepard Industrial Park TIA, Glenmore Business Park TIA and Janet ASP. Future trips were then generated based on the land use assumptions and distributed to the road network in this study area.

Corridor and Interchange Planning:

At the beginning of the project, seven corridor improvement options were developed and evaluated to compare the different traffic operation scenarios. The second phase was to confirm the corridor configuration by analyzing different interchange configurations in detail, including a simple diamond interchange, a half diamond interchange, a diverging diamond interchange and a modified parclo interchange. Then a set of evaluation criteria was developed to compare the traffic operations, property impacts, accessibility, environmental impact and utility impact between these options. According to the evaluation results, the recommended shortlisted options included either a simple diamond interchange or a diverging diamond interchange at both 100 Street S.E. and 116 Street S.E.

The shortlisted options were further evaluated using a Multiple Account Evaluation (MAE) process. This method followed The City's Triple Bottom Line framework which considers social, environmental and economic aspects in the evaluation process. Based on the results, The City, AT and RVC made the decision to select the diverging diamond interchange for a full functional design.

Implementation Staging

Four distinct stages were identified in which the recommended long-term plan could be delivered over a number of years as shown in Figures E.11 to E.14 in Attachment 2.

Stage 1: Short-Term Improvements: An at-grade signalized intersection at 100 Street S.E. is recommended in the short-term as shown in Attachment 3. The short-term improvements help facilitate the adjacent development, and construction costs are the responsibility of the surrounding future developers. The class 4 cost estimate for the short-term improvement is approximately \$4.7 million in 2017 Canadian dollars.

Stage 2: Glenmore Trail Twinning:

Glenmore Trail will be twinned to the south to accommodate a minimum of two lanes in each direction and include a new bridge across the Western Irrigation Canal. Additionally, each intersection will be required to be upgraded to signalized intersections with slotted left-turn lanes. The timing of twinning and future upgrades of Glenmore Trail from four lanes to six lanes will be determined in the future by Alberta Transportation and is within the jurisdiction of the province. The class 4 cost estimate for this scope of work is approximately \$132.4 million. The

Glenmore Trail East Functional Planning Study

sequence of intersection upgrades and twinning of Glenmore Trail will best be determined as land is developed.

Stage 3: Grade Separation:

As adjacent lands are developed, traffic demand will increase resulting in the at-grade intersections reaching capacity. Similar to Stage 2, a future traffic review and analysis along Glenmore Trail will be required to determine the timing of which intersection(s) requires grade separation. Stage 3 could extend over a number of years with each intersection grade-separated individually or grouped together as determined by traffic demand. The class 4 construction cost estimates for the interchanges at 100 Street S.E. and 116 Street S.E. is approximately \$118 million. The class 4 construction cost estimate for the interchange at Rainbow Road outside of Calgary city limits is approximately \$57.4 million.

Stage 4: Westbound Basketweave:

The long term recommended plan also included a basketweave option. This option will provide grade separation for the on-ramp from 100 Street S.E. on Glenmore Trail and the off-ramp to Stoney Trail from Glenmore Trail. The basketweave provides for more efficient access accommodation and egress between Stoney Trail and 100 Street S. E, given the proximity between these two interchanges. The need for the basketweave will be re-evaluated in the future and be constructed if future traffic volumes and adjacent land use necessitate it. The class 4 cost estimate for the basketweave is approximately \$19.2 million.

A Class 4 cost estimate was conducted with quantifiable items including removals, grading, pavement, concrete, structures and utilities. The Corporate Project Management Framework (CPMF) class 4 estimate includes a variance of -40% to +75%.

For more information, please refer to the full Study report at the following link:

<http://www.calgary.ca/Transportation/TP/Pages/Projects/Current-Planning-Projects/Glenmore-Trail-East-Study.aspx>

Stakeholder Engagement, Research and Communication

The engagement approach reflected and upheld the guiding principles established in The City's 2014 engage! Policy. A communication strategy was developed to share information and notify adjacent residents and stakeholders about the project and engagement opportunities.

A three-phase engagement process was developed to provide stakeholders and the general public with multiple opportunities to provide feedback throughout each phase of the project. The goals of the engagement process and highlights of each phase included:

Phase 1 - Understand stakeholder and public issues:

- Information Session (June 15, 2015) – introduced the project team, provided information about the study and discussed any issues or concerns about the proposed interchange at 100 Street S.E. 64 people attended, and 64 comment forms were submitted, either in-person or online.
- Issues Scoping Workshop (June 25, 2015) – technical representatives from The City, RVC, AT and utility companies were invited to identify issues, concerns and constraints prior to concept development.

Glenmore Trail East Functional Planning Study

Phase 2 - Develop options recognizing stakeholder and public identified issues:

- Landowner Meetings (August and September of 2016) – all adjacent landowners, seven groups in total, were invited to review the preliminary interchange options. Landowners were most interested in minimizing right-of-way requirements, providing a full interchange at 100 Street S.E. and keeping 116 Street S.E. on the current alignment.
- Information Session (November 16, 2016) – held to gather feedback on the short-term improvements at 100 Street S.E. and the proposed interchange options for 100 Street S.E. and 116 Street S.E. 52 people attended and 63 comment forms were collected. 83 percent of respondents' feedback indicated that the proposed short-term improvements at 100 Street S.E. would improve traffic flow.

Phase 3 - Recommend a plan that considered stakeholder and public input:

- Information Session (April 24, 2018) – held at the HeatherGlen Golf Course (and online from April 24 – May 4, 2018). 61 people attended the Information Session and 39 feedback comments were received. The majority of the participants felt their input was used to develop the study recommendations, and that they were provided with enough information and opportunity to effectively share their feedback throughout the project.

As a partner and major adjacent developer in this project, Ronmor Holding Inc. is fully in support with the project recommendations as shown in Attachment 5.

Strategic Alignment

The study objectives were in alignment with the Calgary Transportation Plan (CTP) and the 2020 Sustainability Direction including:

1. Transportation Goal #1 by providing better connectivity for the future developments to accommodate the future land use plan;
2. Transportation Goals #2, #3 and #4 by providing the public pathway connectivity in the Shepard Industrial Area Structure Plan and Janet Area Structure Plan areas;
3. Transportation Goal #5 to promote economic development by providing a full-access interchange at 100 St SE and efficient movement of people and goods;
4. CTP Objective 3.2 through the planned regional pathway in the study area;
5. CTP Objective 3.4 by improving road network connectivity to reduce travel time for all road users;
6. CTP Objective 3.10 by planning future grade-separated interchanges to improve safety; and,
7. 'Improving Goods Movement' 2020 objective by providing free-flow operations on Glenmore Trail.

Social, Environmental, Economic (External)

The recommendations will improve auto and goods movement, improve the connectivity and accessibility for a variety transportation modes including pedestrians and cyclists, and align infrastructure planning with future land use. The anticipated benefits include travel time reduction, congestion reduction, safety improvements and reduced vehicle emissions.

Glenmore Trail East Functional Planning Study

Financial Capacity

Current and Future Operating Budget:

There are no current or future operating budget impacts associated with this report. Once the interchanges are constructed, Alberta Transportation will assume ownership of the corridor, along with the operations, maintenance and future replacement of the structures.

Current and Future Capital Budget:

There are no current capital budget impacts associated with this report. Future discussion regarding cost-sharing with Rocky View County and Alberta Transportation is recommended prior to construction of the two interchanges within The City's Limits. The required right-of-way for the long-term plan shall be protected and can be acquired on an opportunity basis. There will be opportunities to negotiate with surrounding landowners for the additional required lands when they apply for future developments, working with RVC for development on the north side of Glenmore Trail.

Risk Assessment

There will be negotiations in the future to acquire the long-term required lands within The City's limits. There is a potential concern of not having sufficient capital funds to acquire the lands in the future needed to build the interchanges. Engaging and collaborating directly with the adjacent landowners, south of Glenmore Trail, will assist in mitigating this risk.

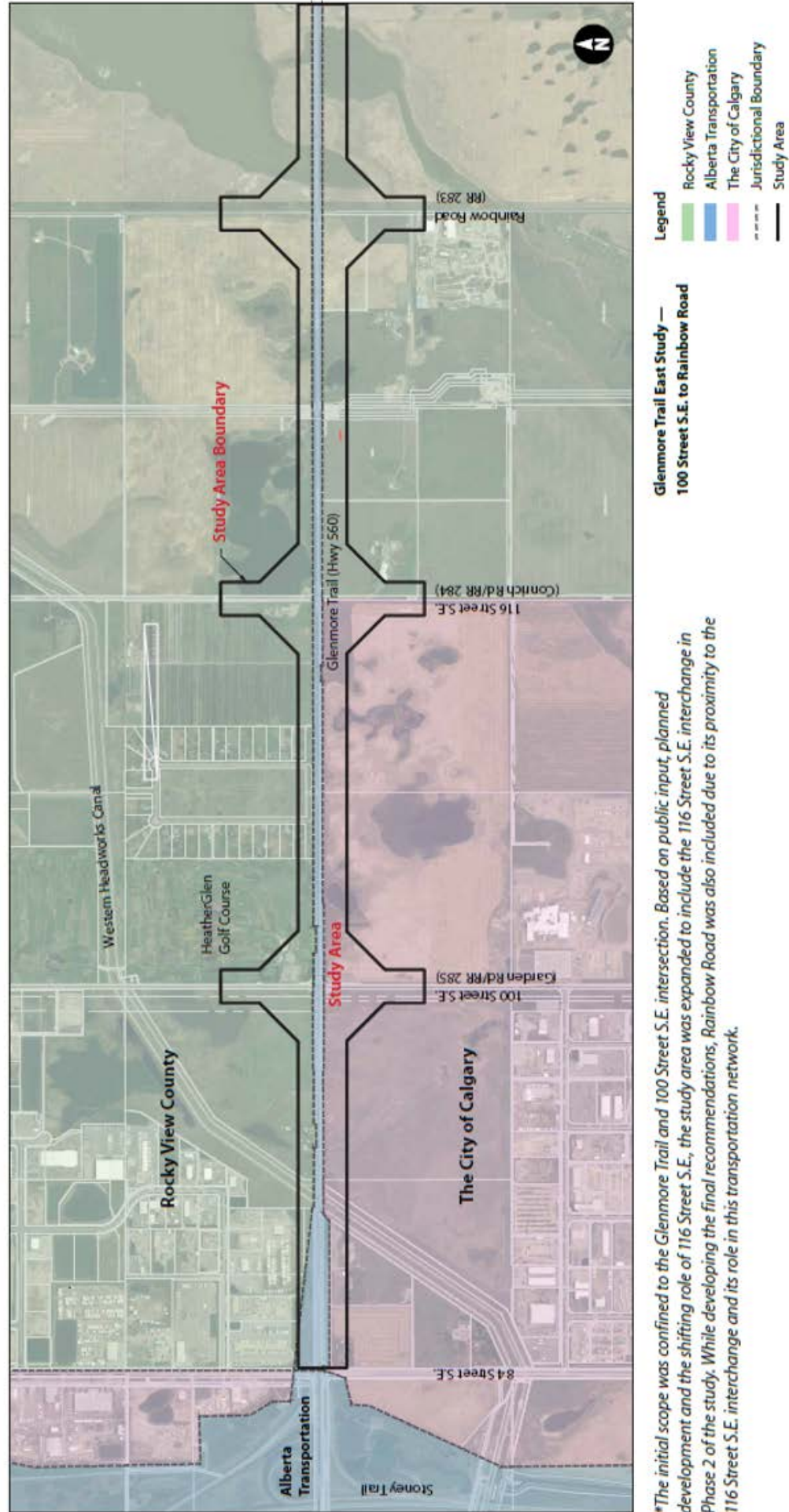
REASON(S) FOR RECOMMENDATION(S):

The recommended plans will accommodate future land uses and allow required future right of way to be protected for and acquired based on an opportunity basis. The recommendations are supported in partnership between The City, Rocky View County and Alberta Transportation, with the assistance from the current landowner of the future Glenmore Business Park. The objectives of this study are in alignment with The City's Calgary Transportation Plan and Municipal Development Plan.

ATTACHMENT(S)

1. Attachment 1 – Site Plan – Glenmore Trail East Functional Planning Study
2. Attachment 2 – Glenmore Trail East Functional Planning Study Executive Summary
3. Attachment 3 – Long-term Required Right of Way Plans
4. Attachment 4 – Short-term Improvement Plan
5. Attachment 5 – Letter of Support from Ronmor Holdings Inc

Study Site Plan





Glenmore Trail East

Functional Planning Study Report | Executive Summary

12 July 2018



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List of Acronyms and Abbreviations

ASP	Area Structure Plan
AT	Alberta Transportation
AADT	Annual Average Daily Traffic
CTP	Calgary Transportation Plan
DDI	Diverging Diamond Interchange
DGSS	Design Guidelines for Subdivision Servicing
EB	Eastbound
ESA	Ecological Screening Assessment
FPS	Functional Planning Study
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HGDG	Highway Geometric Design Guide
ITE	Institute of Transportation Engineers
LOS	Level of Service
LUN	Land Use Network
MAE	Multiple Account Evaluation
MDP	Municipal Development Plan
PDO	Property Damage Only
PV	Present Value
RRHPA	Ring Road and Highway Penetrators Agreement
RVC	Rocky View County
TIA	Transportation Impact Assessment
The City	City of Calgary
TUC	Transportation Utility Corridor
TZ	Transportation Zone
VPD	Vehicles Per Day
WB	Westbound
WB36	Double Trailer Transport Truck Design Vehicle
WID	Western Irrigation District

Executive Summary

E.1 Introduction

The primary objective of the study is to determine the ultimate access and land acquisition requirements along Glenmore Trail, that align with the area structure plans prepared by The City - Shepard Industrial ASP and RVC - Janet ASP and since AT prepared the Highway 560:02 study in 2007. This study was also prepared in response to existing operational and safety deficiencies associated with the corridor and the impediment these deficiencies place on planned growth within the area. The functional outcomes of the study provide improvements for the transportation network operation by reducing delays and improving capacity of the intersections within the study area. Moreover, the project recommendations will improve safety while minimizing impacts to road users, land owners, and the environment.

The recommendations of this study have been developed with a multi-jurisdictional review team which included The City of Calgary (The City), Rocky View County (RVC) and Alberta Transportation (AT).

The purpose of this report is to document the process and recommendations of the Glenmore Trail East Functional Planning Study along Glenmore Trail (Highway 560) from Stoney Trail to Rainbow Road. This report replaces the westerly 6 km of the previously proposed 17 km transportation infrastructure improvements documented in AT's 2007 Functional Planning Study for Highway 560:02 from Calgary to Highway 797.

STUDY BACKGROUND

The 2007 Highway 560 Functional Planning Study completed by AT is the approved long-term plan for the corridor. The plan calls for the upgrade of Highway 560 to a high-speed, six-lane divided highway with diamond interchanges. The 2007 Study provided no access to 100 St SE and the two originally-planned interchanges were located 400 m west of 116 St SE and along the existing alignment of Rainbow Road. Based on an updated assessment by The City, a half diamond interchange at 100 St SE was reviewed and tentatively approved by AT in 2009.

Later, based on assessment by area landowners, a Parclo A-B interchange at 116 St SE with a 100 m realignment to the west was reviewed and tentatively approved by AT in 2013. Both approvals were subject to completion of an updated functional planning study in the area, which has now been addressed by the findings of this report.

STUDY PROCESS

The functional planning study process included four phases with stakeholder and public engagement completed throughout the project. The four phases are Identify, Develop, Evaluate, and Refine and Recommend.

Phase 1: Identify

- A review of the strategic transportation context for the Glenmore Trail East corridor including the intersections with 100 St SE and 116 St SE;
- The identification of site constraints and challenges within the study area;
- The development of a comprehensive engagement plan that allowed key stakeholders and the general public to provide critical input at key study intervals to inform the study team with respect to community needs, impacts, and improvement considerations for all modes of travel;



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- A review and assessment of current and future traffic conditions within the study area;
- Stakeholder workshop to identify issues, opportunities and constraints; and
- Public information session to introduce the study and establish existing conditions.

Phase 2: Develop

- The development of multiple preliminary options to take to a preliminary evaluation;
- The development of an appropriate evaluation framework to be applied to the options in order to determine a short-list of potential solutions that accommodate all modes of travel; and
- Public information session on short-term improvements for 100 St SE and long-term improvements for 100 St SE and 116 St SE.

Phase 3: Evaluate

- The completion of a Multiple Account Evaluation (MAE) process, informed by stakeholder and public engagement feedback;
- The inclusion of the Triple Bottom Line framework that considers social, economic and environmental themes in the evaluation process;
- Development of a conceptual layout at Rainbow Road to allow an evaluation of traffic and safety performance east of 116 St SE (see note below);
- The recommendation of a preferred option based on the evaluation results; and
- The documentation and summation of the evaluation process and results.

Phase 4: Refine and Recommend

- The preparation of a functional design of the recommended solution, including horizontal and vertical geometry, active transportation infrastructure, stormwater management, construction staging, right-of-way requirements, property acquisition, and implementation costs;
- The documentation of the study findings in a comprehensive report; and
- Public information session on the recommended plan and conversations with stakeholder groups.

INCLUSION OF RAINBOW ROAD INTERCHANGE

It is important to note, that due to the close spacing of the proposed interchanges from Rainbow Road to Stoney Trail, it was necessary to include Rainbow Road in the analysis in determining the overall recommended configuration for the corridor. The decision to include Rainbow Road occurred after the MAE and adoption of the DDI as the recommended plan for 100 St SE and 116 St SE.

Glenmore Trail East Functional Planning Study Executive Summary

STUDY AREA

The study area, shown in **Figure E.1**, consists of the Glenmore Trail corridor from Stoney Trail to about 800 m east of Rainbow Road.



FIGURE E.1: GLENMORE TRAIL EAST FUNCTIONAL PLANNING STUDY AREA

E.2 Engagement Summary

From the outset, public engagement was identified as a priority for the Glenmore Trail East Study and the project team made the commitment to engage with impacted stakeholders and the public early and often throughout the process. The engagement approach reflected and upheld the guiding principles established in The City's 2014 engage! Framework & Tools, and in the Engagement/Communications Standards for Consultants provided by Transportation Planning.

The project team developed a three-phase engagement process which provided stakeholders and the broader public with multiple opportunities to provide feedback throughout each phase of the project. The goals of the engagement process and highlights of each phase included:

- Phase 1 - Understand stakeholder and public issues:
 - Information Session (June 15, 2015) – introduced the project team, provided information about the study and discussed any issues or concerns about the proposed interchange at 100 St SE. Sixty-four people attended, and 64 comment forms were submitted, either in-person or online.
 - Issues Scoping Workshop (June 25, 2015) – Technical representatives from The City, RVC, AT and power transmission utilities (AltaLink, Alberta Electric System Operator and ENMAX) were invited to identify issues, concerns and constraints prior to concept development.
 - Scope Expanded to include 116 St SE – During the initial public consultation, stakeholders asked the project team to investigate the possibility of a full interchange at 116 St SE as well as identify possible short-term improvements to reduce congestion at the intersection.

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- Phase 2 - Develop options recognising stakeholder and public identified issues:
 - Landowner Meetings (August and September of 2016) – all adjacent landowners – seven groups in total – were invited to review the preliminary interchange options. Landowners were most interested in minimizing right-of-way requirements, providing a full interchange at 100 St SE and keeping 116 St SE on the current alignment.
 - Information Session (November 16, 2016) – held to gather feedback on the short-term improvements at 100 St SE and the proposed interchange options for 100 St SE and 116 St SE. Eighty-three per cent of respondents' feedback indicated that the proposed short-term improvements at 100 St SE would improve traffic flow and responses varied for which interchange configuration (diamond or diverging diamond) was best suited for 100 St SE and 116 St SE.
- Phase 3 - Recommend a plan that considered stakeholder and public input:
 - Information Session (April 24, 2018) – held at the HeatherGlen Golf Course (and online from April 24 – May 4, 2018). Received 30 feedback comments and 61 people attended the Information Session. Over 80% of participants felt their input was used to develop the study recommendations, and that they were provided with enough information and opportunity to effectively share their feedback throughout the project.

E.3 Existing Conditions

Glenmore Trail – AT controlled Glenmore Trail, is currently a two-lane paved Skeletal Road with posted speed limit of 80 km/h approximately 550 m west of 116 St SE and 100 km/h to the east.

100 St SE – This road is currently a two-way, two lane paved Industrial Arterial road with a posted speed of 80 km/h. South of Glenmore Trail, 100 St SE is under the jurisdiction of The City. North of Glenmore Trail, 100 St SE is under the jurisdiction of the RVC.

116 St SE – This road north of Glenmore Trail is currently a two-way, two lane paved Rural Road, under the jurisdiction of RVC. South of Glenmore Trail, 116 St SE is currently a two-lane unpaved Rural Local Road with a posted speed of 80 km/h, providing access to a small number of rural residences.

Rainbow Road – Under the jurisdiction of the RVC, Rainbow Road is a two-lane paved Rural Local road with a posted speed of 80km/h.

INTERCHANGE AND INTERSECTION SPACING

The distance between the Stoney Trail interchange centreline and the centreline of the 100 St SE intersection is 2,200 m. The spacing between the intersections located within the study corridor are shown in **Table E.1**.

TABLE E.1: INTERSECTION SPACING

INTERSECTION SEGMENTS	DISTANCE (M)
Stoney Trail SE – 100 St. SE	2,200
100 St. SE – 116 St. SE	1,600
116 St. SE – Rainbow Rd	1,600
Rainbow Road – Hwy 791	4,900

Glenmore Trail East Functional Planning Study Executive Summary

EXISTING TRAFFIC CONDITIONS

Traffic congestion at the existing intersection of 100 St SE forms part of the justification for this study. A level of service assessment and safety review was conducted for the 100 St SE and Glenmore Trail intersection to identify deficiencies and to determine possible short and long-term solutions. It is noted that a similar short-term assessment of 116 St SE or Rainbow Road was not within the scope of the study, due to the longer-term nature of the planning at those locations. **Figure E.2** and **Figure E.3** show the existing traffic volumes and truck volumes for the AM and PM peak hours as provided by The City. The LOS analysis results summary for the AM and PM peak hours follow in **Table E.2**.

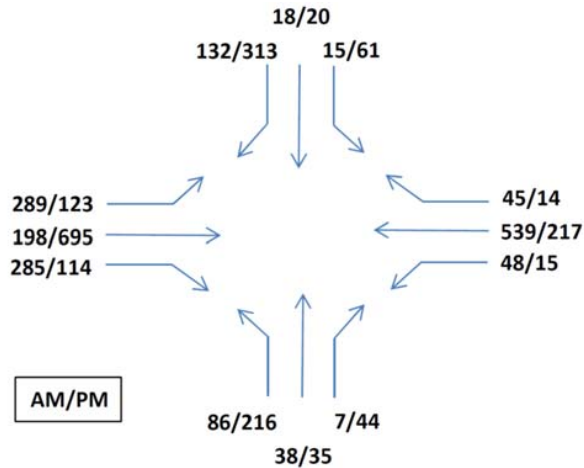


FIGURE E.2: 100 ST SE - ALL VEHICLE VOLUMES

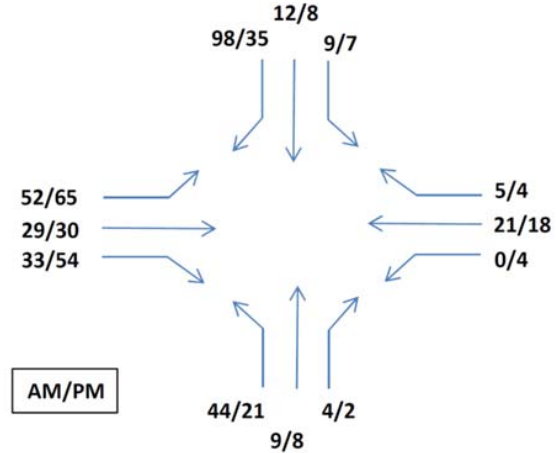


FIGURE E.3: 100 ST SE - HEAVY VEHICLE VOLUMES

TABLE E.2: 100 ST SE - SYNCHRO ANALYSIS SUMMARY (2015 AM AND PM PEAK HOURS)

AM					PM				
MOVEMENT	DELAY (S)	V/C	LOS	LOS APPROACH	MOVEMENT	DELAY (S)	V/C	LOS	LOS APPROACH
EBL	294.5	1.55	F	F	EBL	52.4	0.81	D	F
EBT	19.8	0.26	B		EBT	125.3	1.17	F	
EBR	3.4	0.44	A		EBR	6.9	0.3	A	
WBL	13.0	0.1	B	D	WBL	23.3	0.2	C	D
WBT	51.0	0.91	D		WBT	42.0	0.65	D	
WBR	-	-	-		WBR	-	-	-	
NBL	113.8	0.89	F	F	NBL	56.2	0.76	E	D
NBT	57.1	0.29	E		NBT	35.4	0.15	D	
NBR	0.4	0.05	A		NBR	1.7	0.15	A	
SBL	-	-	-	C	SBL	-	-	-	C
SBT	66.3	0.41	E		SBT	52.9	0.51	D	
SBR	19.4	0.65	B		SBR	12.7	0.71	B	
Intersection	76.3	-	E	-	Intersection	64.5	-	E	-

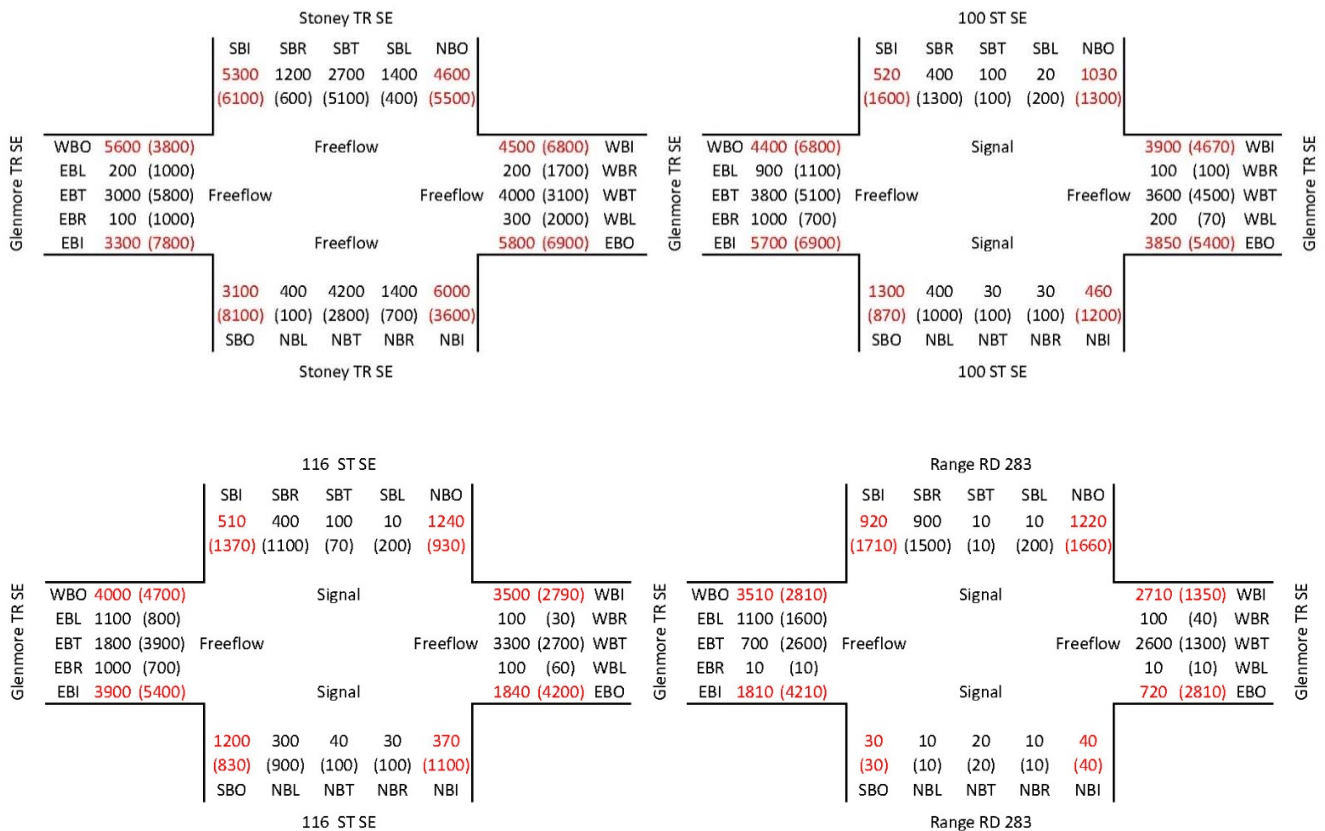
EXISTING SAFETY REVIEW

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The historic collision data provided by AT for the intersection of 100 St SE and Glenmore Trail was reviewed for the 5-year period between 2008 and 2012. The data includes incidents occurring at the intersection and within 400 m of Glenmore Trail. A total of seven collisions were reported within the study area over the analysis period, all of which were property damage only (PDO) incidents with no fatal or injury collisions reported. The data provided by AT indicated that the study site has a collision rate of 91.08 collisions per 100 MVKM.

E.4 Future Traffic Conditions

The future traffic volumes were developed using the 2039 traffic forecast provided by The City as a base and adjusted based on the anticipated land uses, population and employment from reference reports including approved Area Structure Plans (ASP) in both Calgary (Shepard Industrial ASP - 2013) and RVC (Janet ASP - 2014). Hence, the design traffic was developed for a full build out of the lands identified by The City and RVC for future development and not for a specific design year. The future design traffic volumes are shown in **Figure E.4**.



NOTES

- Traffic Volumes less than 100 are rounded to the nearest 10
- Traffic Volumes larger than 100 are rounded to the nearest 100
- AM (PM) - Brackets designate PM volumes
- Red figures indicate volumes entering or exiting the intersection

FIGURE E.4: FULL BUILD-OUT DESIGN TRAFFIC VOLUMES

E.5 Option Development

Strategic options to improve the Glenmore Trail were developed considering a range of engineering, traffic, safety and cost aspects. The options were focussed on 100 St SE and 116 St SE and did not include Rainbow Road as the functional planning updates for the latter pertained primarily to ramp / weaving analysis. The basic option arrangements were developed using design features including:

- Provision of a single exit from the mainline for each interchange; and
- Full movement interchanges considered at each junction.

INITIAL OPTIONS AND CORRIDOR OPTION SCREENING

An initial corridor option screening was undertaken to better understand what lane configurations between interchanges would best support weaving operations along Glenmore Trail between Stoney Trail and Rainbow Road. Seven corridor options were developed and evaluated using a VISSIM microsimulation model.

- Option 1: Diamond interchanges with single lane on ramps;
- Option 2: Diamond interchanges with westbound dual lane on ramps;
- Option 3: Diamond interchanges with basketweave to Stoney Trail;
- Option 4: Loop ramp at 100 St SE and diamond interchanges at 116 St SE and Rainbow Road;
- Option 5: Loop ramp at 100 St SE with lane away and diamond interchanges at 116 St SE and Rainbow Road;
- Option 6: Loop ramp at 100 St SE with a basketweave and diamond interchanges at 116 St SE and Rainbow Road;
- Option 7: Diamond interchange at 100 St SE and Rainbow Road and Parclo A-B at 116 Street.

The following findings were observed from the VISSIM analysis:

- Option 2, Option 3, and Option 7 showed very similar weaving operations between interchanges and these three options performed the best among the seven corridor options;
- The corridor operates best with dual westbound entrance ramps;
- The corridor operates best with dual westbound exit ramps;
- The corridor operates best with single eastbound entrance ramps;
- The corridor operates best with dual eastbound exit ramps;
- Diamond interchanges operate best with the above entrance and exit ramp laning;
- Westbound Glenmore Trail operates best with two auxiliary lanes;
- A basketweave improves the westbound weaving operation between 100 St SE and Stoney Trail; and
- Option 7 operates well, however, the weaving distance between 100 St SE and 116 St SE is the shortest with a Parclo A-B at 116 St SE.

SECOND ROUND OF OPTION DEVELOPMENT AND SCREENING

Different types of interchange options were reviewed in greater detail. Six options were developed for 100 St SE, and three options were developed for 116 St SE. The options developed during this stage and the design features of each option are illustrated in *Figure E.5* and *Figure E.6*.

Glenmore Trail East Functional Planning Study
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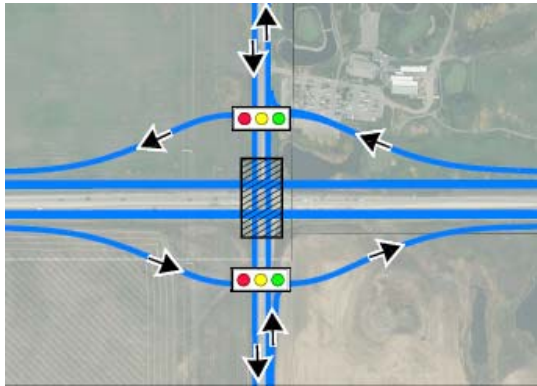
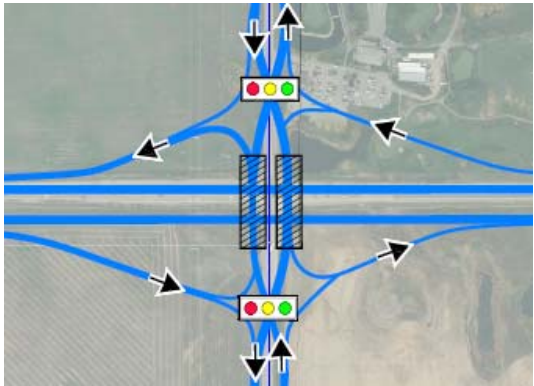
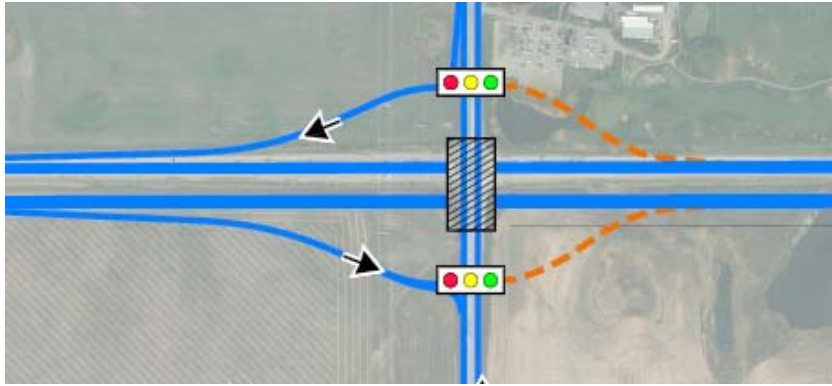
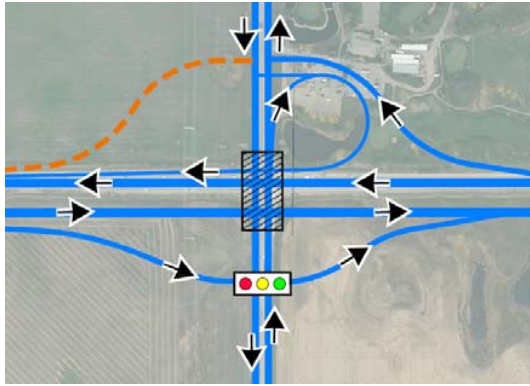
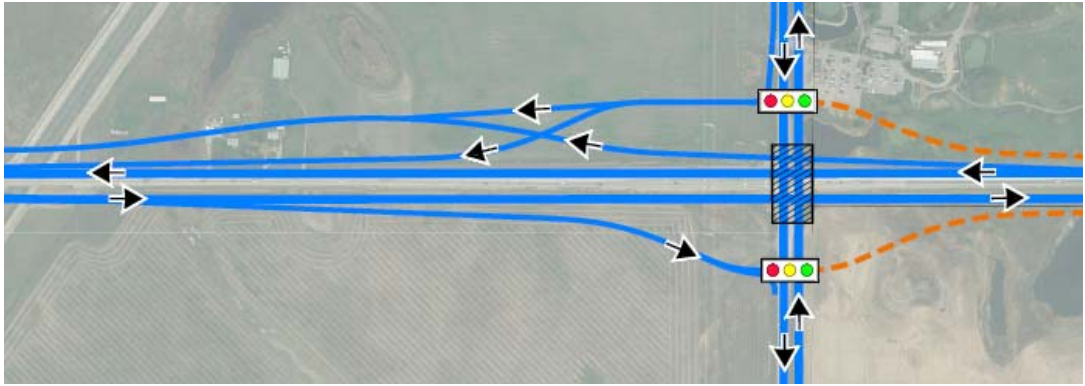
OPTION A: DO NOTHING (BASE CASE)	OPTION B - FULL DIAMOND INTERCHANGE	OPTION C - DIVERGING DIAMOND INTERCHANGE
 <ul style="list-style-type: none">The status quo assumes a “do-nothing” scenario, includes no changes to the study area and its intersections and no alteration to the surrounding network. This option represents the Base Case.	 <ul style="list-style-type: none">Full movements are provided at this interchange.High loads can use the same ramps as the general traffic to navigate the interchange.Minimum desirable weaving distance is provided between adjacent interchanges.	 <ul style="list-style-type: none">Full movements are provided at this interchange.This option involves traffic along 100 St SE “crossing sides at grade” to create free-flow left turns through the interchange.High loads can use the same ramps as the general traffic to approach the interchange junctions. However, unique intersections will be required to allow high load movements to pass through.Minimum desirable weaving distance is provided between adjacent interchanges.
OPTION D - HALF DIAMOND INTERCHANGE	OPTION E - HALF PARCLO HALF DIAMOND INTERCHANGE	SUB OPTION - BASKET WEAVE CONNECTION TO STONEY TRAIL
 <ul style="list-style-type: none">Access provided to and from the west side only (City of Calgary side).Additional ramps are required on the east side to accommodate high load movement through the interchange. These ramps will not be available for use to general traffic.Limiting access at 100 St SE forces EB traffic to other access points.	 <ul style="list-style-type: none">Full movements are provided at this interchange.High loads can use the same ramps as the general traffic to navigate the interchange.Minimum desirable weaving distance is provided between adjacent interchanges.This option has the largest impact on the HeatherGlen golf course.Alternative to this option would be to provide a separate ramp for the southbound to westbound movement, to remove conflict with the northbound to westbound movement as these two movements have very high volumes.	 <ul style="list-style-type: none">Minimum desirable weaving distance has provided between adjacent interchanges in the eastbound direction.The basketweave will grade separate the entrance ramp from 100 St SE and the exit ramp to Stoney Trail thereby eliminating any potential weaving issues between these two interchanges.Compatible with all options and can be implemented at later stages.

FIGURE E.5: INTERCHANGE OPTIONS FOR 100 ST SE

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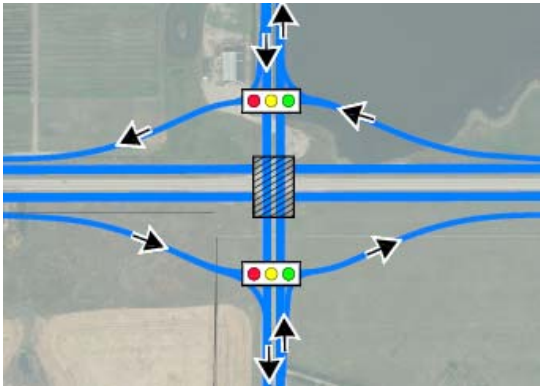
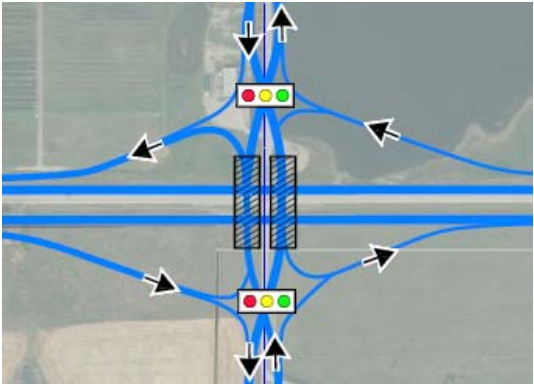
OPTION A – DO NOTHING (BASE CASE)	OPTION B - FULL DIAMOND INTERCHANGE
<div></div> <ul style="list-style-type: none">The status quo assumes a 'do-nothing' scenario, includes no changes to the study area and its intersections and no alteration to the surrounding network. This option represents the Base Case.	<div></div> <ul style="list-style-type: none">Full movements are provided at this interchange.High loads can use the same ramps as the general traffic to navigate the interchange.Minimum desirable weaving distance is provided between adjacent interchanges.
OPTION C – DIVERGING DIAMOND INTERCHANGE	
<div></div> <ul style="list-style-type: none">Full movements are provided at this interchange.More wetland impacted than full diamond.This option involves traffic along 116 St SE “crossing sides at grade” to create free-flow left turns through the interchange.High loads can use the same ramps as the general traffic to approach the interchange junctions. However, unique intersections will be required to allow high load movements to pass through.Minimum desirable weaving distance is provided between adjacent interchanges.	

FIGURE E.6: INTERCHANGE OPTIONS FOR 116 ST SE

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A total of six criteria were selected to screen the second round of options. The six criteria are traffic capacity, property impacts, weaving analysis, accessibility, wetland impacts and utility impacts. The ratings from the application of these criteria with respect to each initial option have been summarized in **Table E.3** and **Table E.4** for the 100 St SE options and the 116 St SE options. The lower scoring options were screened out from further consideration.

TABLE E.3: 100 ST SE INITIAL OPTIONS SCREENING

	OPTION A - DO NOTHING (BASE CASE)	OPTION B - FULL DIAMOND INTERCHANGE	OPTION C - DIVERGING DIAMOND INTERCHANGE	OPTION D - HALF DIAMOND INTERCHANGE	OPTION E - HALF PARCLO HALF DIAMOND INTERCHANGE	SUB OPTION - BASKETWEAVE CONNECTION TO STONEY TRAIL
Traffic Capacity	✗	✓	✓	✗	✗	✓
Property Impacts	✓	✗	✗	✗	✗	✗
Weaving Analysis	✓	✓	✓	✓	✓	✓
Accessibility	✓	✓	✓	✗	✗	✗
Wetland Impacts	✓	✗	✗	✓	✗	✓
Utility Impacts	✓	✗	✗	✗	✗	✗
Recommendation		✓✓✓ More favourable	✓✓✓ More favourable			✓✓✓ More favourable

TABLE E.4: 116 ST SE INITIAL OPTIONS SCREENING

	OPTION A - DO NOTHING (BASE CASE)	OPTION B - FULL DIAMOND INTERCHANGE	OPTION C - DIVERGING DIAMOND INTERCHANGE
Traffic Capacity	✗	✓	✓
Property Impacts	✓	✗	✗
Weaving Analysis	✓	✓	✓
Accessibility	✓	✓	✓
Wet Land Impacts	✓	✗	✗
Utility Impacts	✓	✗	✗
Recommendation		✓✓✓ More favourable	✓✓✓ More favourable

RECOMMENDATIONS FOR SHORT-LISTED OPTIONS

Based on the screening evaluation, the short-listed options included either a full diamond interchange or a diverging diamond interchange (DDI) for both 100 St SE and 116 St SE. It was also recommended to further evaluate the sub-option of a basketweave connection from 100 St SE to Stoney Trail.

E.6 Option Evaluation and Summary

The short-listed options were further evaluated using a Multiple Account Evaluation (MAE) process. The MAE was created with reference to The City's Triple Bottom Line framework which considers social, environmental and economic aspects in the evaluation process. It was determined that both the conventional diamond interchange and diverging diamond interchange options require a similar footprint and have comparable traffic performance and overall project costs. The overall evaluation results are summarized in **Table E.5.** with the key differences described below.

TABLE E.5: DIAMOND VS DDI SUMMARY

TBL	ISSUE	INDICATOR	DIAMOND	DDI
Economic	Financial	Operating and maintenance costs / efforts	✓	
		Utility relocation costs	=	=
		Present value of project cost	✓	✓
	Transportation	High load access	✓	
		Heavy vehicle usability		✓
		Accommodates Transit	✓	
		Accommodates cycling and walking		✓
		Travel time savings		✓
		Traffic safety		✓
		Reduction in traffic congestion and improved capacity		✓
	Feasibility and Deliverability	Constructability		✓
		Staging opportunity	=	=
Social	Community Impacts	Accessibility to network	=	=
		Visual aesthetics	=	=
		Construction impact to residences and businesses	=	=
		Private property impacts	✓	
		Land consumption	✓	
	Stakeholders	Public acceptability	=	=
Environmental	Environmental	Impacts on indigenous species, removal of habitat	✓	
	Cultural Heritage	Impact on historical sites	✓	
	Pollution	Impact on air quality	=	=

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Conventional diamond interchange was evaluated favourably on the financial, community and environmental aspects, due to:

- Lower construction cost;
- Less property impact; and
- Less environmental impact.

Diverging diamond interchange was evaluated favorably on the transportation aspect, due to:

- Better accommodation of heavy vehicles;
- Better accommodation of transit, cycling and walking;
- Shorter travel time; and
- Higher capacity.

Based on the results of the evaluation, no option clearly out-performs the other. The adoption of either option will meet the requirements of the functional planning study.

As the footprint of the conventional diamond can be fully encompassed within the footprint of the DDI, selecting the DDI layout over the diamond will allow the flexibility of adopting either layout in the future, therefore allowing the interchange to be adapted to best suit the needs of the surrounding land build-out. Given the purpose of the study is to preserve the corridor for future requirements, a project decision was made to progress the DDI option to a full functional plan design.

Although the DDI requires modestly more acquired land, it has a significantly smaller footprint than the 2007 Highway 560 Functional Plan (rural-style diamond interchange), therefore reducing the overall impacts to the surrounding properties and wetlands. The additional land required for the DDI compared to the diamond interchange has the significant benefit of ensuring full flexibility for the interchange to be adapted to future needs, which is a key consideration at this stage of planning, given that build-out of the area is likely on a 30+ year time horizon.

E.7 Recommended Plan

The recommended plan for Glenmore Trail East includes interchanges at 100 St SE, 116 St SE, and Rainbow Road. The key components and features of the recommended plan include:

- Glenmore Trail ultimately widened to a six-lane divided skeletal freeway (note that the initial stage twinning requirement for Glenmore Trail is to be determined by a future study).
- 100 St SE, 116 St SE, and Rainbow Road upgraded to four lane urban arterial streets;
- Diverging diamond interchanges at 100 St SE, 116 St SE, and Rainbow Road;
- An option to include basketweave ramp structures in the westbound direction between 100 St and Stoney Trail;
- New grade separated pedestrian and cycling crossings of Glenmore Trail at 100 St SE, 116 St SE, and Rainbow Road, as part of the interchanges.

Figures E.7 to E.9 show the recommended plan for the 100 St SE, 116 St SE, and Rainbow Road interchanges. **Figure E.10** shows the recommended plan with the optional basketweave.

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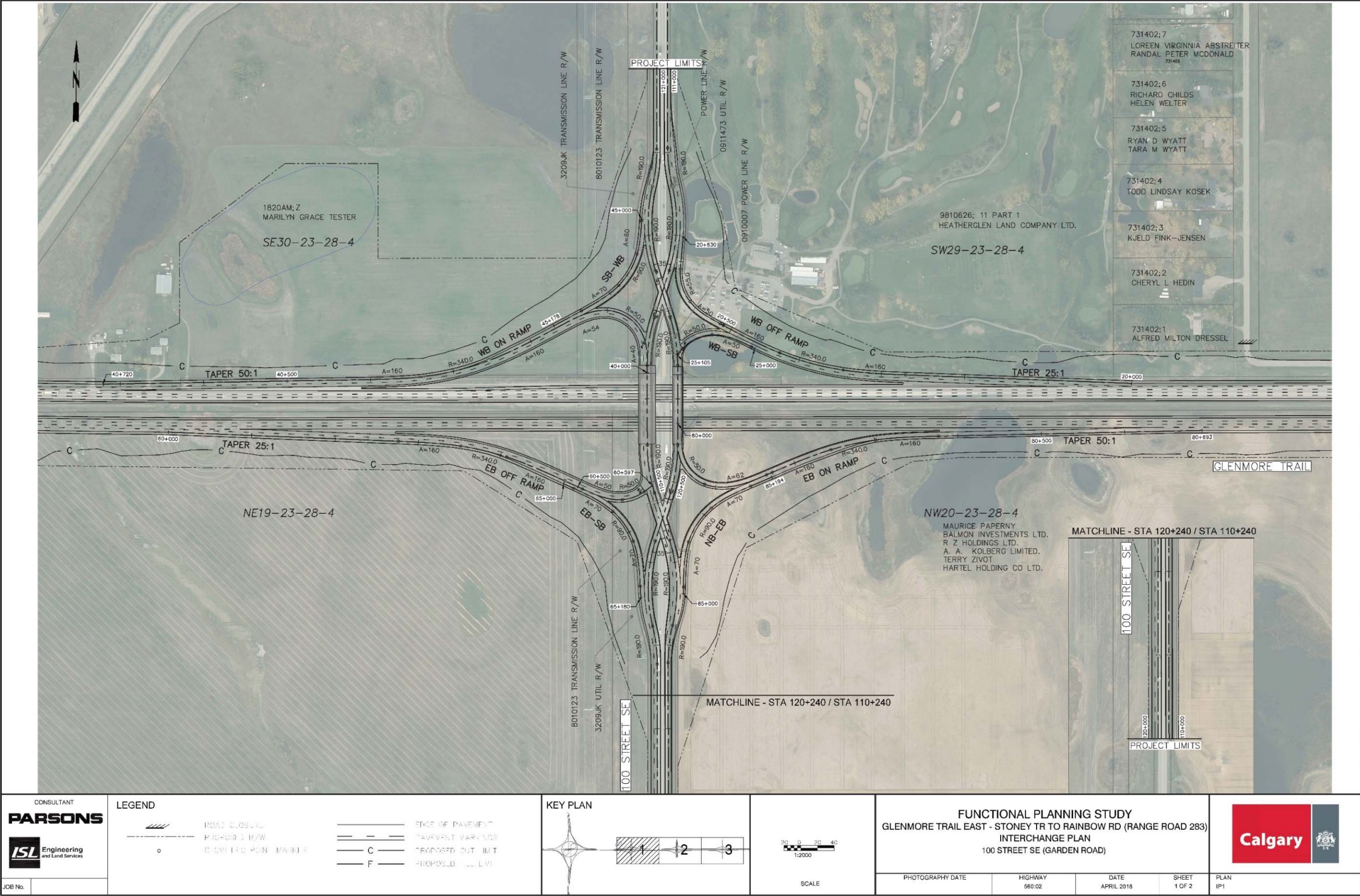


FIGURE E.7: RECOMMENDED PLAN - 100 ST SE

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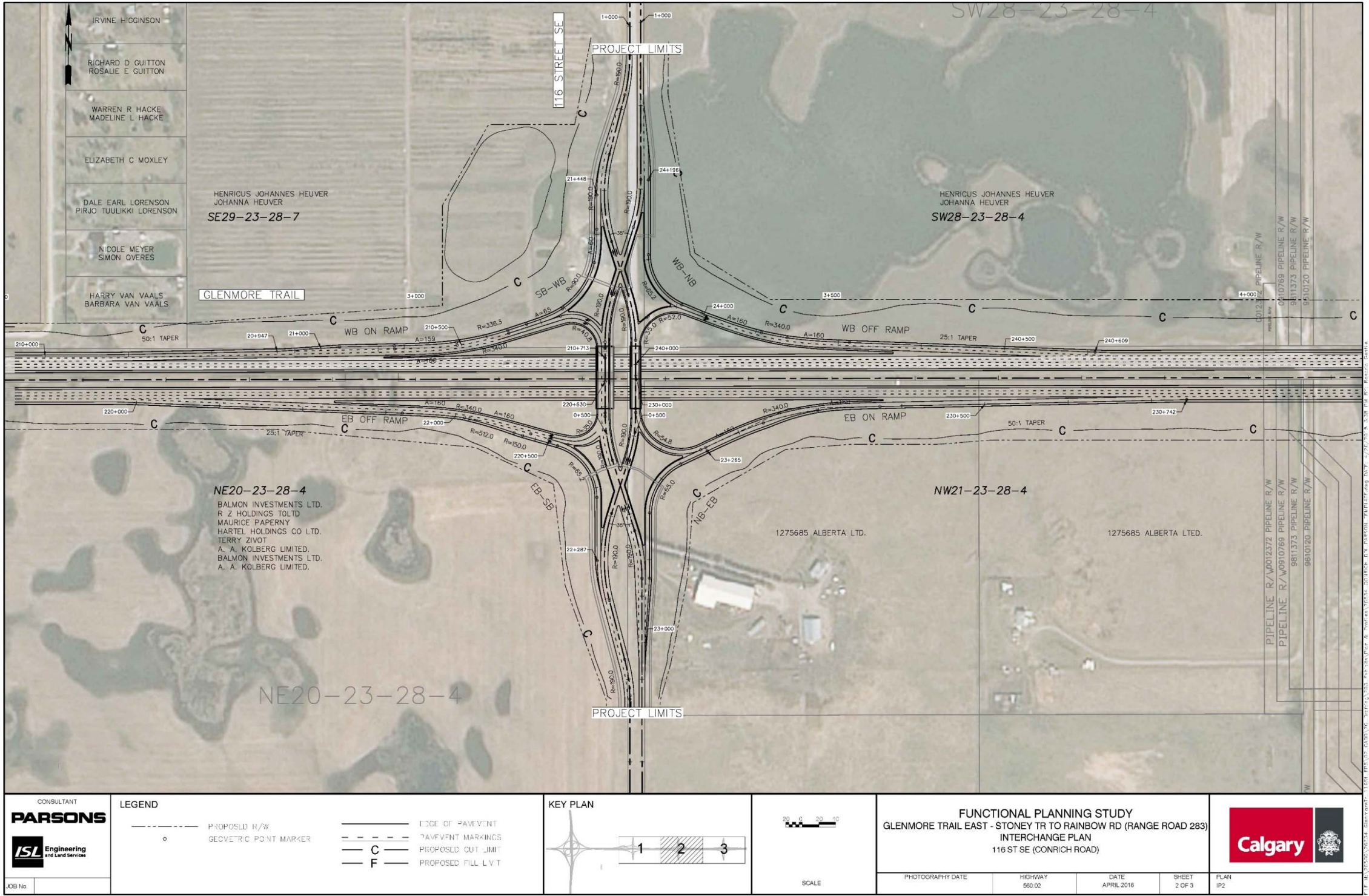


FIGURE E.8: RECOMMENDED PLAN - 116 ST SE

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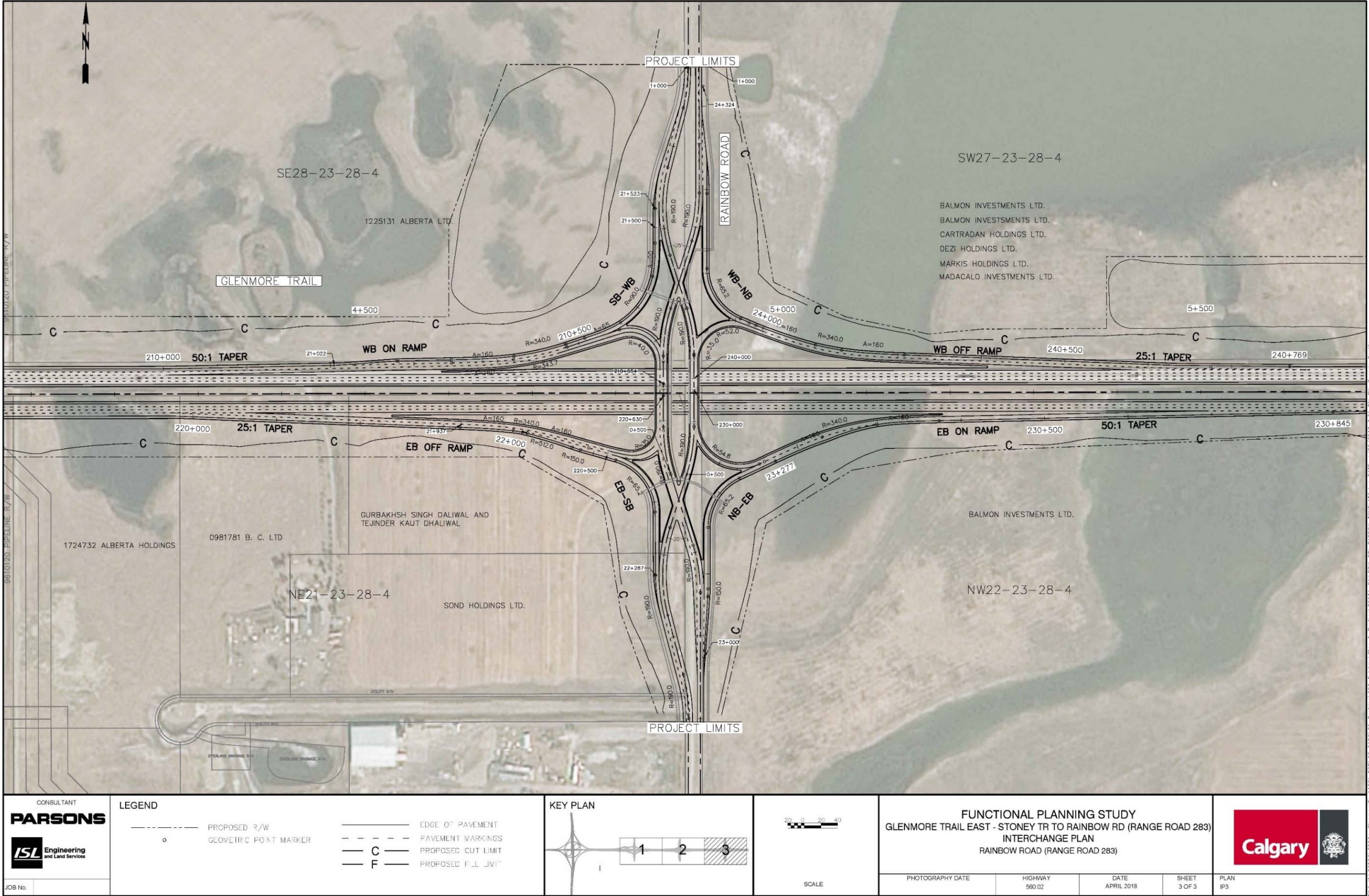


FIGURE E.9: RECOMMENDED PLAN -RAINBOW ROAD

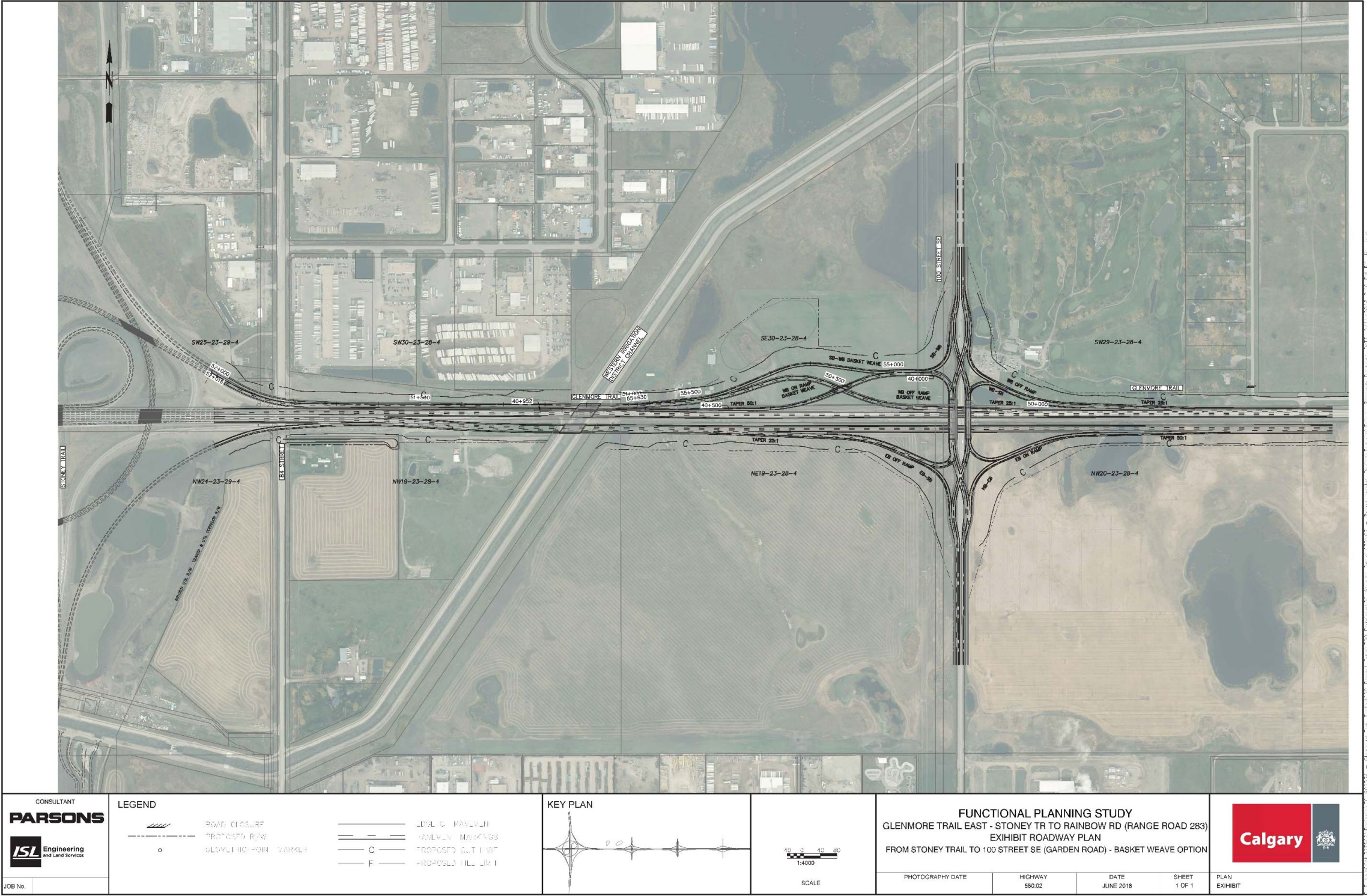


FIGURE E.10: RECOMMENDED PLAN - BASKETWEAVE OPTION

FEATURES OF THE RECOMMENDED PLAN

The following sections summarize the key components of the recommended functional plan.

Pedestrian and Cycling Facilities

The recommended plan includes a 3 m multi-use pathway along the west side and 2 m sidewalk along the east side of the northbound bridges on 100 St SE, 116 St SE and Rainbow Road. As the multi-use pathway and sidewalk approach the interchange at Glenmore Trail, they are channelized into the inside of the west structure, into a single multi-use pathway. This is consistent with typical practice for a DDI interchange.

Property Acquisition

The property requirements from the Highway 560 Functional Planning Study completed by AT in 2007 have been re-evaluated given that the recommended DDI require less property than the 2007 plan. The updated land requirements were calculated based on the areas needed to build the road network and interchange and provisions for additional stormwater ponds.

The assessment process identified a number of properties that, based on current drawings, require partial acquisition. However, with refinements to the alignment, acquisition of these properties may be avoided. The assessment also identified one potential property where full acquisition might be required due to impacts to several structures on the property. A summary of the potential property impacts for each interchange is provided in **Table E.6**.

TABLE E.6: SUMMARY OF TOTAL POTENTIAL PROPERTY IMPACTS

OPTION	PLAN REF #	LOT NO. (LINC #)	AREA (HA)	FULL/PARTIAL	NOTES
Stoney Trail to 100 St SE	1	30984653	0.48	Partial	
	2 and 3	18104083	2.94	Partial	
	4	N/A	0.57	Partial	Service road
	5	18104091	10.10	Partial	
100 St SE	6	33448499	8.26	Partial to full	
	7	19956085 and 33448481	4.15	Partial	
	8	33448507	7.82	Partial	
	9	19955260	1.71	Partial	Same parcel as #12
	10	23862089	1.97	Partial	Includes service road to the east
116 St SE	11	30931604	7.53	Full	
	12	19955260	7.72	Partial	Same parcel as #9
	13	21608393	5.90	Partial	
	14	27711720	5.00	Partial	
	15	27424407	2.49	Partial	

Glenmore Trail East Functional Planning Study Executive Summary

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OPTION	PLAN REF #	LOT NO. (LINC #)	AREA (HA)	FULL/PARTIAL	NOTES
Rainbow Rd	16	17196791	12.33	Partial	
	17	36715614 and 36715622	2.96	Partial	
	18	36372886	4.39	Partial	
	19	36715648	1.25	Partial	
	20	21593050	8.13	Partial	
	21	21607528	7.62	Partial	
	22	27355727	0.75	Partial	

COST ESTIMATES

Preliminary Cost Estimates—as defined in AT Engineering Consulting Guidelines for Highway, Bridge, and Water Projects Volume 1 - Design and Tender (2011)—were developed for each of the recommended segments along Glenmore Trail. The estimates do not include property acquisition.

The estimates, including a -40% and +75% variance, are provided in **Table E.7**. The resulting preliminary cost estimates are an opinion of probable costs and should be refined further during the detailed design phase.

Glenmore Trail East Functional Planning Study Executive Summary

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TABLE E.7: ORDER OF MAGNITUDE COST ESTIMATES

SEGMENT	UPGRADES	COST ESTIMATES (2017 \$)			
		TOTAL	COMBINED	-40% VARIANCE	+75% VARIANCE
Stoney Trail to east of 100 St SE	<ul style="list-style-type: none"> Upgrade existing roadway to six lanes divided cross section on Glenmore Trail Upgrade existing 100 St SE to four lane cross section New signals at Glenmore Trail / 100 St SE Intersection upgrade 	\$68,650,000	\$151,150,000	\$92,700,000	\$264,510,000
	<ul style="list-style-type: none"> Construct diverging diamond interchange and ramps Construct auxiliary lanes on Glenmore Trail 	\$63,300,000			
	<i>Additional upgrades:</i> <ul style="list-style-type: none"> Basket weave between Stoney Trail and 100 St SE 	\$19,200,000			
East of 100 St SE to east of 116 St SE	<ul style="list-style-type: none"> Upgrade existing roadway to six lane divided cross section on Glenmore Trail Upgrade existing 100 St SE to four lane cross section Install traffic signals at Glenmore Trail / 116 St SE Upgrade at-grade Intersection 	\$31,322,000	\$86,105,000	\$51,665,000	\$150,700,000
	<i>Additional upgrades:</i> <ul style="list-style-type: none"> Construct diverging diamond interchange and ramps Construct auxiliary lanes on Glenmore Trail 	\$54,800,000			
East of 116 St SE to east of Rainbow Road	<ul style="list-style-type: none"> Upgrade existing roadway to six lane divided cross section on Glenmore Trail Upgrade existing Rainbow Road to four lane cross section Install traffic signals at Glenmore Trail / Rainbow Road Upgrade at-grade Intersection 	\$32,370,000	\$89,800,000	\$53,855,000	\$157,080,000
	<i>Additional upgrades:</i> <ul style="list-style-type: none"> Construct diverging diamond interchange and ramps Construct auxiliary lanes on Glenmore Trail 	\$57,400,000			

BENEFIT COST ANALYSIS

A benefit cost analysis based on vehicle delay cost was performed independently for the recommended 100 St SE, 116 St SE and Rainbow Road interchange configurations. The analysis was conducted over a 30 year period with implementation assumed to begin in 2037. The present value (PV) delay costs and construction costs were calculated and a benefit cost ratio determined based on the following general assumptions:

- Base case for benefit cost analysis includes widening on Glenmore Trail to six lanes, but retains an at-grade intersection;
- Forecasted traffic for the base case six-lane corridor associated with the 2039 land use assumptions;
- 30 year analysis period;
- Construction beginning in 2037 with a duration of two years;
- 4% internal discount rate;
- 2.5% annual traffic growth rate;
- Only travel time savings (reduction in existing delays) were assessed as benefits;
- Average value of time (blended between autos and trucks) of \$35.74; and
- Property acquisition costs were not included in the calculation.

The results of the analysis indicated the following:

- | | |
|--------------------------------------|--|
| • 100 St SE DDI with the basketweave | 10.98 B/C Ratio (>3 year payback period) |
| • 116 St SE DDI | 8.44 B/C Ratio (>4 year payback period) |
| • Rainbow Road DDI | 7.93 B/C Ratio (> 5 year payback period) |

As mentioned, only travel time benefits were included in the analysis. The inclusion of other elements such as vehicle operating cost savings, safety benefits, and salvage value should be included in future traffic analysis. However, future benefit cost analysis should also include deriving more accurate traffic forecasts for the base case where the above assumptions can be refined.

E.8 Construction Staging

The four distinct construction stages for delivering the recommended plan were identified and these are described below.

Stage 1 – Short-Term Improvements at Glenmore Trail East and 100 St SE

As a result of feedback received from the public engagement early during the planning study, a focussed analysis was conducted to fully explore the scope of any short-term improvements that could provide immediate benefits to the intersection of Glenmore Trail East and 100 St SE. **Figure E.11** shows the extent of the short-term improvement scope. The short-term improvements for 100 St SE are summarized below:

- Additional westbound through lane on Glenmore Trail;
- Additional eastbound through lane on Glenmore Trail;
- Additional northbound left turn lane added for a total of two left turn lanes;

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- Add dedicated protected southbound left turn lane;
- Add protected southbound right turn slip-lane;
- Provide longer acceleration length for northbound traffic from 100 St SE merging onto eastbound traffic on Glenmore Trail;
- Provide longer acceleration length for southbound traffic from 100 St SE merging onto westbound traffic on Glenmore Trail;
- Improve westbound right turn lane with increase deceleration length; and
- Improve eastbound right turn slip-lane with longer deceleration length.

With a 30% contingency, 15% Engineering fee/testing fee and 10% mobilization, the total construction cost is estimated at \$4.7 million.

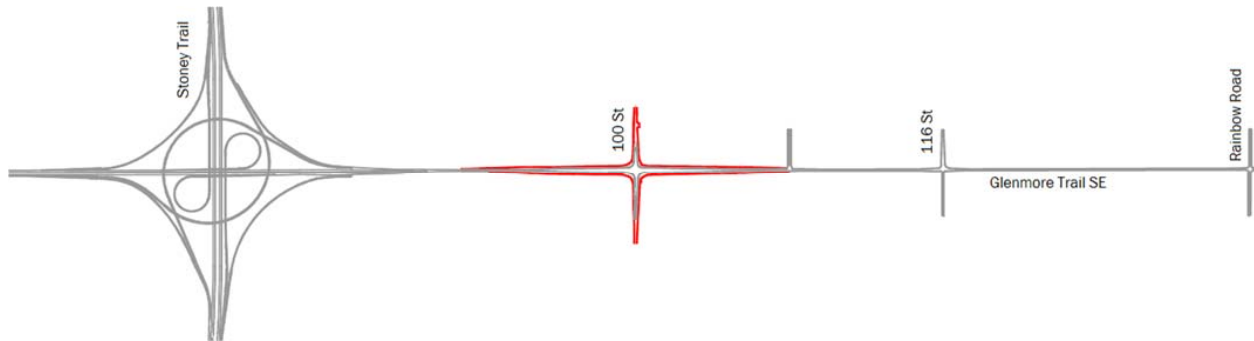


FIGURE E.11: SHORT-TERM IMPROVEMENTS AROUND 100 ST SE

Stage 2 – Glenmore Trail Twinning

Glenmore Trail east of Stoney Trail is classified as a Service Classification Level 3 highway. In the event that twinning is warranted for Glenmore Trail, it will involve the twinning of Glenmore Trail to the south, to accommodate a minimum of two lanes of traffic in either direction and include a new bridge across the Western Irrigation Canal. Refer to **Figure E.12**. The timing of upgrading the Glenmore Trail from four lanes to six lanes will be determined in the future stage of the design based on traffic studies.

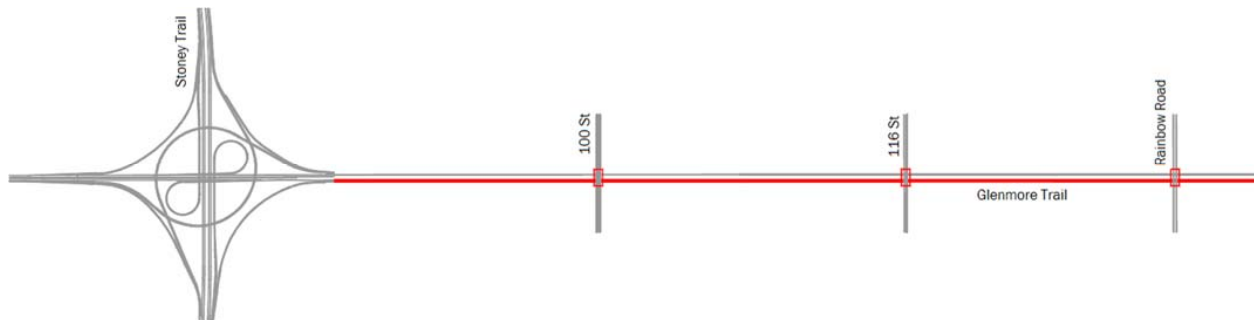


FIGURE E.12: ADDITIONAL EASTBOUND LANES AND TWINNING OF GLENMORE TRAIL

Stage 3 – Grade Separation

As land is developed, traffic demand will increase resulting in the at-grade intersections reaching capacity. Future traffic analysis along Glenmore Trail will be required to determine the timing in which the intersection(s) will require grade separation. Stage 3 could extend over a number of years with each intersection grade-separated individually or grouped together as determined by traffic demand. New ramps and bridges are required to grade separate across Glenmore Trail. **Figure E.13** shows the grade separation of Glenmore Trail at 100 St SE, 116 St SE and Rainbow Road. This study identified a series of temporary roads that may be required to build the bridges and ramps to minimize disruption to traffic during construction.

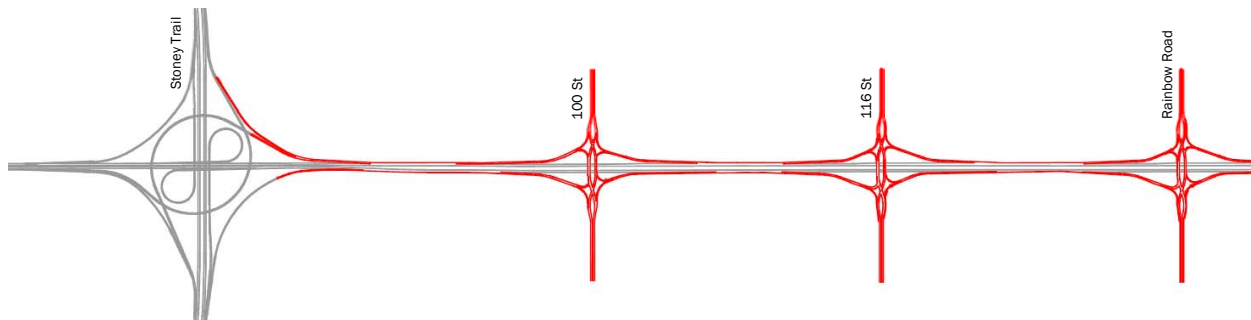


FIGURE E.13: GRADE SEPARATION OF GLENMORE TRAIL

Stage 4 – Westbound Basketweave

A westbound basketweave was proposed as a long-term solution to address potential weaving problems due to the close proximity of Stoney Trail to 100 St SE. Refer to **Figure E.14**. If the traffic review carried out in the previous stage warrants the need for a basketweave, the basketweave can be constructed at this stage. All property acquisitions and utility relocations should have occurred during Stage 3. Hence, there should be minimal temporary traffic diversion required during construction.

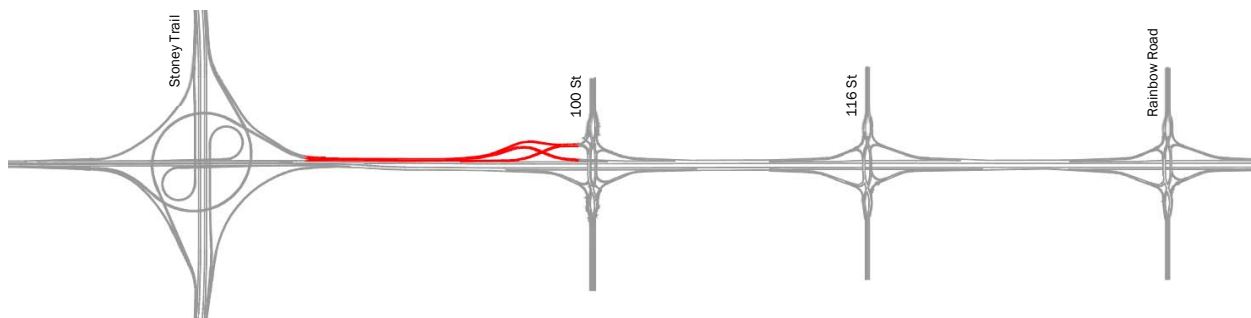


FIGURE E.14: BASKETWEAVE FROM 100 ST SE TO STONEY TRAIL

E.9 Conclusion

A comprehensive functional planning process was completed for 100 St SE, 116 St SE and Rainbow Road interchanges along Glenmore Trail under the guidance of the Technical Review Committee. Options were developed and evaluated for the study area. Three diverging diamond interchanges are recommended as the optimum interchange configuration for the junctions at 100 St SE, 116 St SE and Rainbow Road along Glenmore Trail. The recommended plan includes an option to include a basketweave structure in the westbound direction between 100 St SE and Stoney Trail to address potential weaving problems.

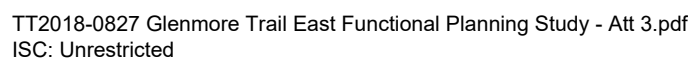
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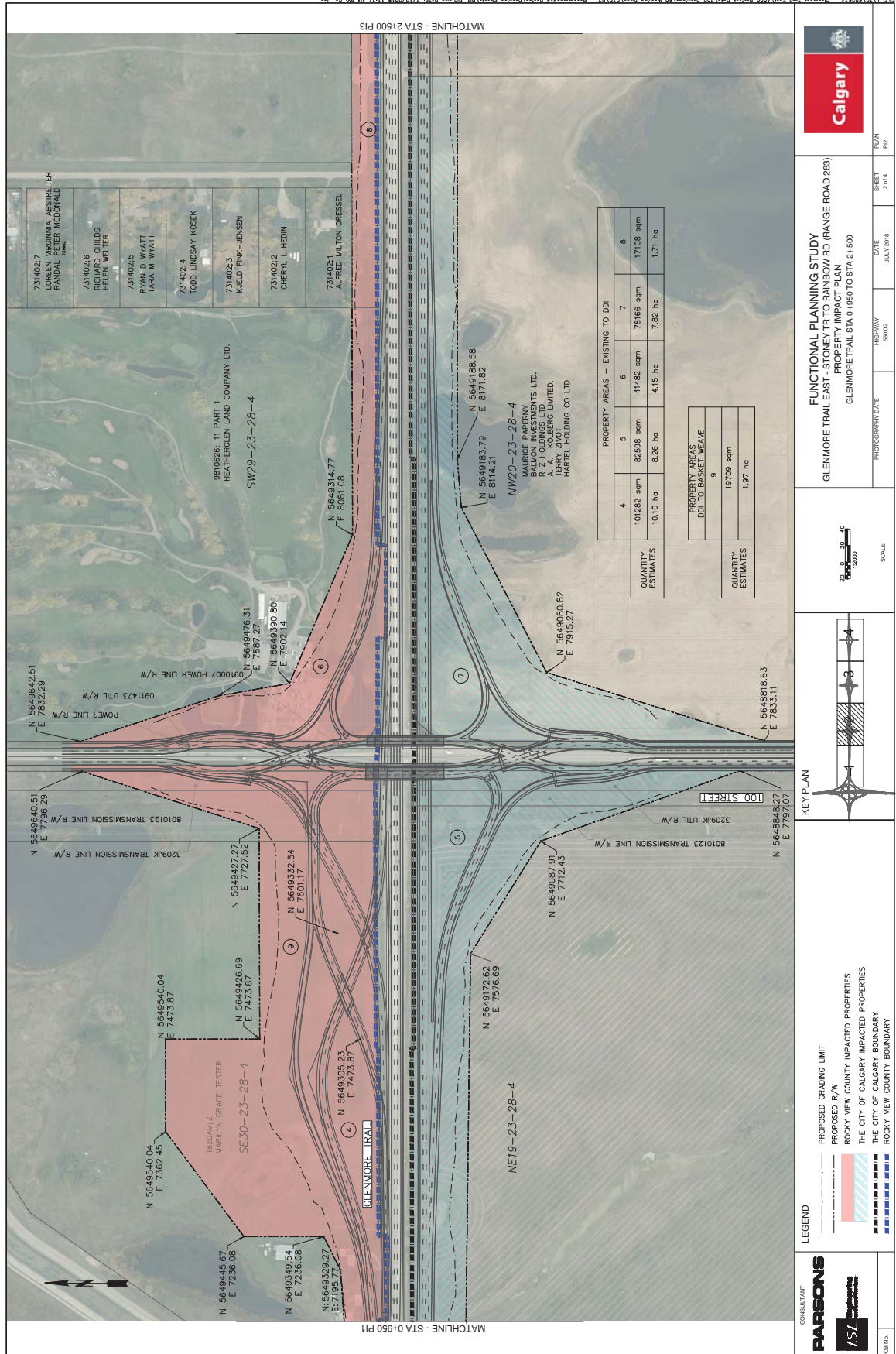


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Calgary, AB T2G 0Y2

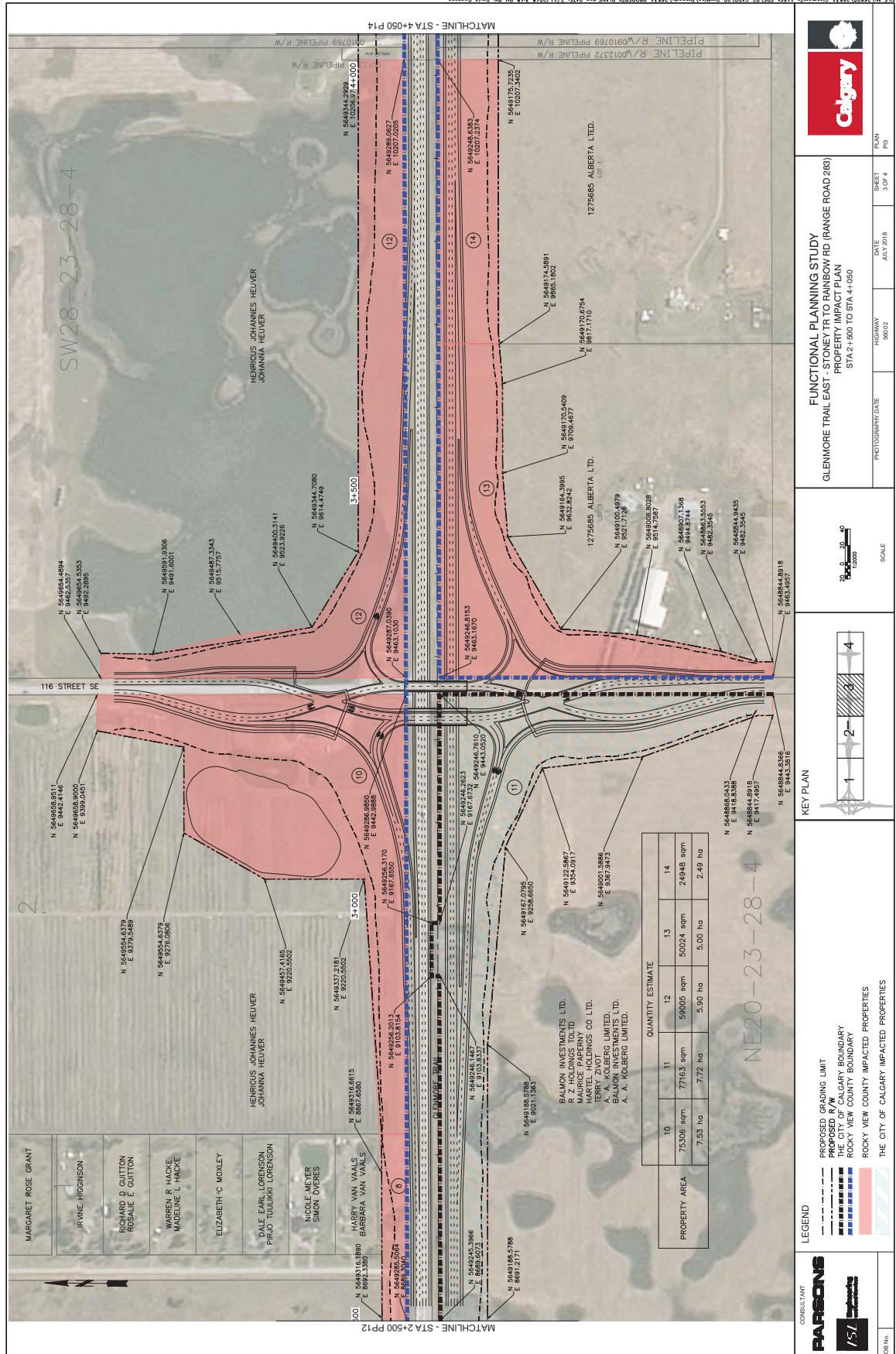
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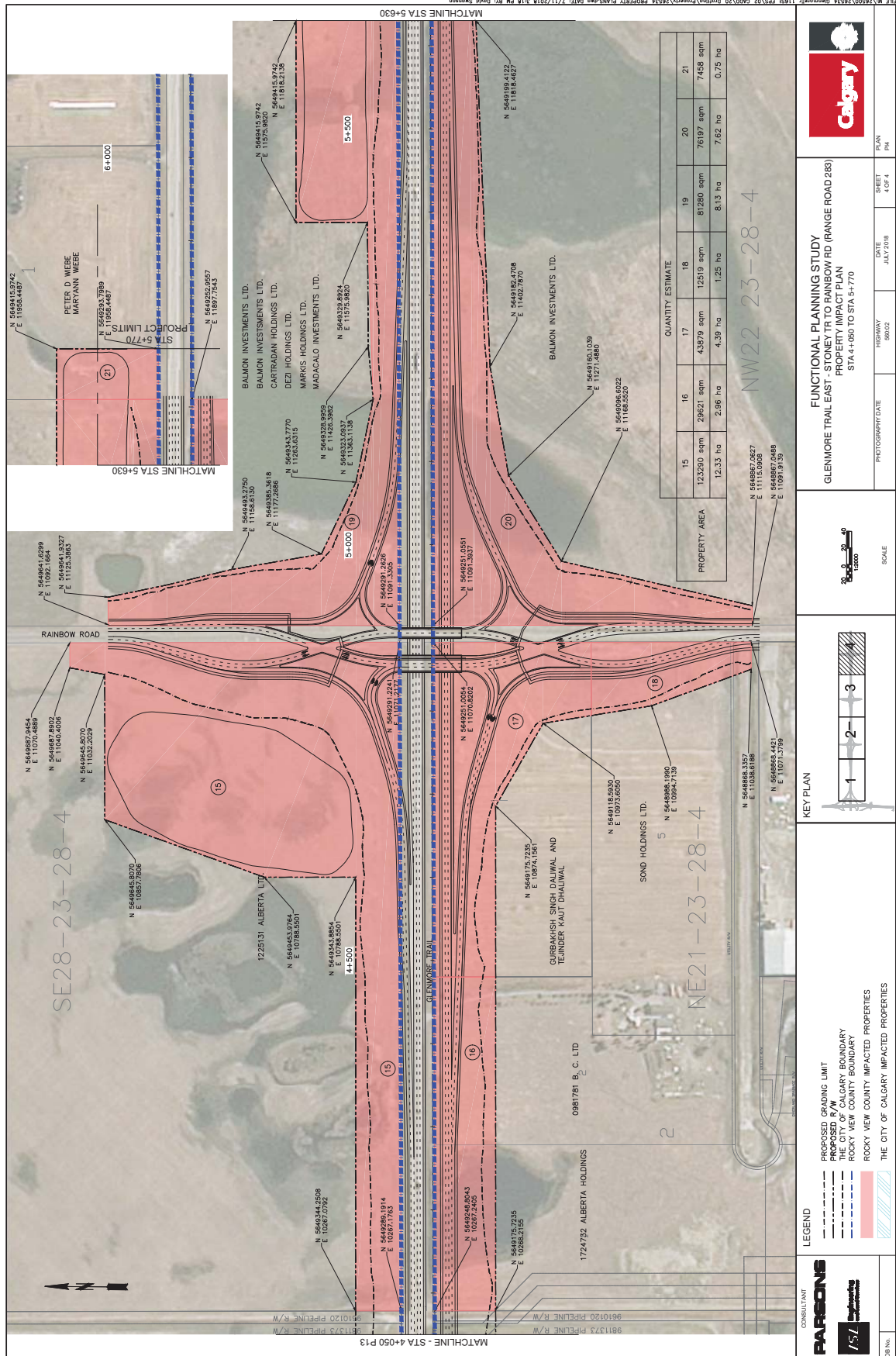
Long-term Required Right of Way Plans

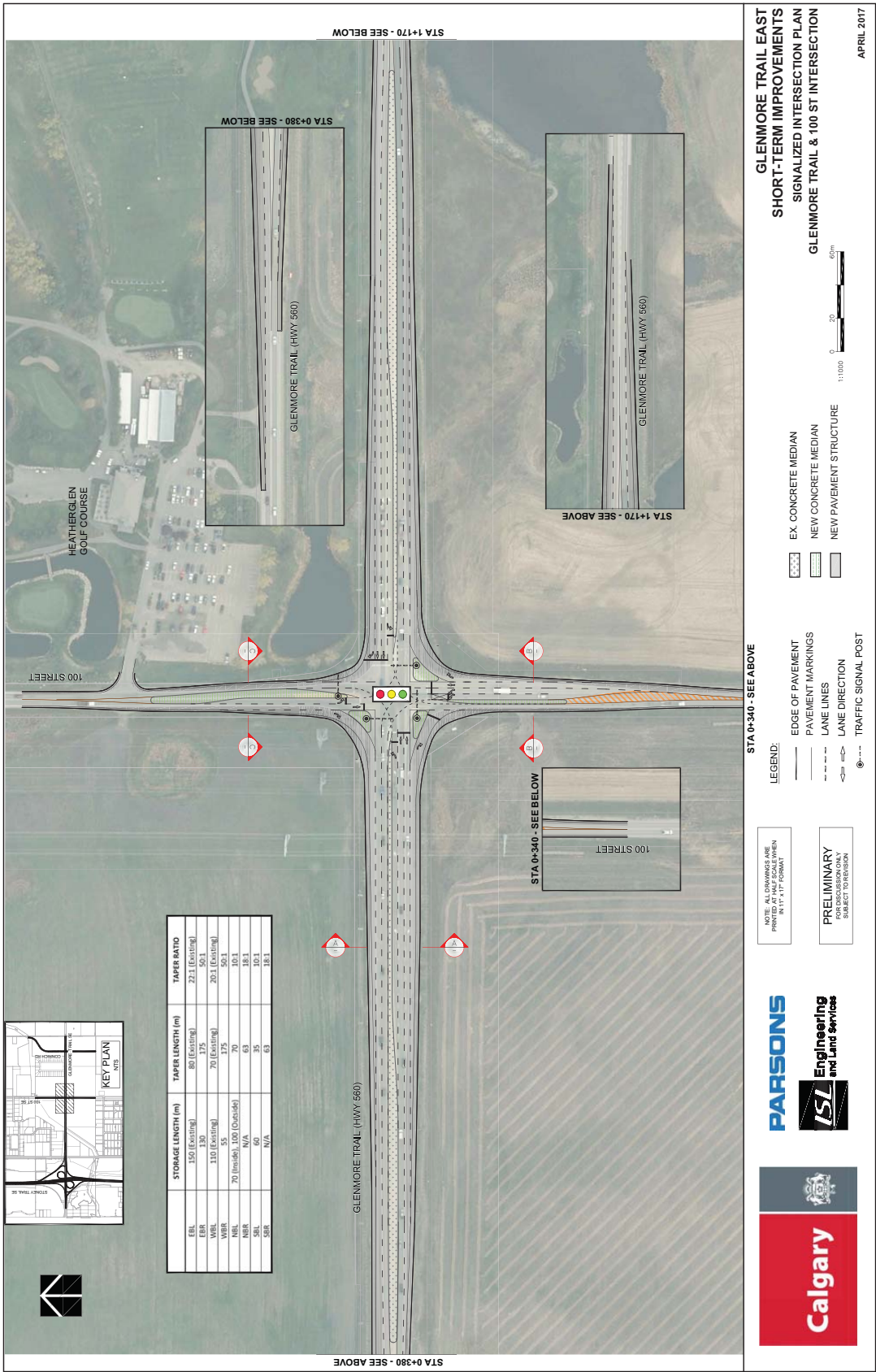


Long-term Required Right of Way Plans



Long-term Required Right of Way Plans







June 28, 2018

Mr. Jeffrey Xu, M.Sc., P.Eng.
Senior Transportation Engineer
The City of Calgary
Mail code: #8124, 800 Macleod Trail S.E.
P.O. Box 2100, Station M
Calgary, Alberta T2P 2M5

Via Email: Jeffrey.xu@calgary.ca

Re: Glenmore Trail East Functional Planning Study

Dear Jeffrey:

As a stakeholder and adjacent landowner, Ronmor is in support of the Functional Planning Study as presented at the open house April 24th, 2018.

Please contact me if any other correspondence is needed.

Yours truly,

A handwritten signature in black ink, appearing to read "Jay German", with a long horizontal flourish extending to the right.

Jay German
Vice President, Land Development

COVER PAGE

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776), TT2018-0905

Background: At the 2018 June 28 Regular Meeting of the Priorities and Finance Committee, Report PFC2018-0776 was referred to the 2018 July 19 Regular Meeting of the SPC on Transportation and Transit.

Excerpt from the Minutes of the Regular Meeting of the Priorities and Finance Committee, 2018 June 28:

“Moved by Councillor Woolley

That with respect to Report PFC2018-0776, the following be approved:

That the Priorities and Finance Committee refer Item 6.3, Report PFC2018-0776 to the 2018 July 19 Regular Meeting of the SPC on Transportation and Transit.

MOTION CARRIED”

**Transportation Report to
Priorities and Finance Committee**

2018 June 28

**ISC: UNRESTRICTED
(PFC2018-0776)
TT2018-0905**

Page 1 of 8

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776)

EXECUTIVE SUMMARY

The City is building four Bus Rapid Transit (BRT) routes that will fill important gaps in the rapid transit network, and provide efficient, reliable and convenient transit service for Calgarians. The new network will serve key travel destinations and enhance cross-town transit connections, supporting a diversity of trip types and providing major improvements in the speed, reliability, convenience and customer experience of travel options. These routes will provide enhanced public transportation to 53 Calgary communities with a combined population of 320,000 people. As part of the implementation, Calgary Transit is also reviewing 25% of existing bus routes to develop a more effective bus network that makes efficient use of the BRT infrastructure investments.

Given the significant investments in improved transit service and infrastructure across the city, and the large number of current and potential new customers that will have new/revised transit options as part of BRT implementation, it will be important to effectively communicate the scope of the network changes to Calgarians, as well as promote the enhanced service to increase awareness and attract new customers. Transit industry best practices and case studies have demonstrated unique branding and targeted marketing are beneficial to effectively communicate the higher value of BRT service options and attributes, and attract more new users and retain existing riders.

Administration evaluated multiple options in the development of the BRT network marketing strategy. The marketing and communications tactics outlined in the recommended Option 2 support existing customers through significant route changes, while also increasing awareness of the BRT service, promoting the brand and important value dimensions, using industry best practices and expanding audience reach. This option provides a balanced approach to meeting the overall marketing strategy goals and maximizing return on investment given current financial constraints.

ADMINISTRATION RECOMMENDATION:

That the Priorities and Finance Committee recommend that Council approve funding option 2 and allocate \$366,000 to Calgary Transit Program 110 from the Fiscal Stability Reserve for the Bus Rapid Transit Network Marketing Strategy.

PREVIOUS COUNCIL DIRECTION / POLICY

At the 2013 January 14 Combined Meeting of Council, report TT2012-0833, RouteAhead: A Strategic Plan for Transit in Calgary, was approved containing the Bus Rapid Transit (BRT) network as a short-term priority for expansion of the rapid transit network.

Action Plan 2015-2018 allocated capital funding to the commencement of the BRT network through Program 566.

BACKGROUND

The City is building four Bus Rapid Transit (BRT) routes that will fill important gaps in the rapid transit network, and provide efficient, reliable and convenient transit service for Calgarians. As outlined in RouteAhead – A Strategic Plan for Transit in Calgary, the BRT network is an important part of The City's overall transportation plan and will provide Calgarians with

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776)

significantly improved options to travel across the city using public transit. The service is an important investment to accommodate the evolving travel needs of Calgarians, as well as the city's current and future growth. The 17 Avenue S.E., North and South Crosstown BRT routes will begin service in fall 2018, and Southwest BRT will begin service in 2019.

BRT is a fast, reliable bus service achieved through infrastructure improvements such as dedicated bus lanes, transitways and transit priority at traffic signals (queue jumps, signal priority). It is a cost-effective and flexible approach to providing a high quality rapid transit service, at a lower construction cost than Light Rail Transit. BRT routes have fewer stops than a regular bus route, allowing them to travel farther in a shorter amount of time while still directly connecting customers with major destinations.

The City of Calgary's BRT network includes both enhanced service and infrastructure. There has been significant planning and engagement work conducted on the BRT projects, and the network has been adapted to suit the needs of the communities and the customers it will serve. The new network will serve key travel destinations and enhance cross-town transit connections, supporting a diversity of trip types and providing major improvements in the speed, reliability and convenience of travel options. In addition to improved service attributes, there have been significant enhancements in customer experience amenities such as larger platforms and shelters (BRT stations), heated shelters, improved lighting, and next bus arrival time information. The four BRT routes will provide an enhanced level of service to 53 communities containing 320,000 people. Ridership on these BRT routes is expected to grow to over 30,000 passenger trips per day by 2024.

As part of the BRT network implementation, Calgary Transit is reviewing 25% of existing bus routes to develop a more effective bus network that makes efficient use of the BRT infrastructure investments. The 2018 Transit Service Review is ongoing and focused on the catchment areas around 17 Avenue SE, North and South Crosstown BRT. In total, these existing routes serve over 70,000 passenger trips per day across 99 communities.

Given the significant investments in improved transit service and infrastructure across the city, and the large number of current and potential new customers that will have new/revised transit options as part of BRT implementation, it will be important to effectively communicate the scope of the network changes to Calgarians, as well as promote the improved connectivity, convenience, reliability and customer experience amenities to attract new customers. Industry best practices and case studies have demonstrated that enhanced marketing approaches are required to most effectively communicate the higher value of BRT service options and attributes, and consequently attract more new users and retain existing riders. This includes unique branding for the rapid transit service and stations, as well as targeted marketing strategies to distinguish the enhanced service. These efforts seek to create positive awareness and perceptions, and promote user (e.g. cost, convenience, efficiency) and societal (e.g. environmental, social) benefits.

Overall, the goals of the marketing strategy for Calgary's new BRT network are:

1. To inform existing Calgary Transit customers about the significant changes to their current bus route network, and which revised transit options are best for them.
2. To inform existing Calgary Transit customers about the enhanced BRT service and customer experience amenities that are being implemented.

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776)

3. To increase ridership by attracting new customers and increasing usage from occasional transit customers, through improved awareness of the enhanced value of the BRT service among Calgarians.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

Marketing Calgary's BRT

The City of Calgary is looking to build awareness around the benefits and improvements offered by the new BRT routes and supporting route changes, in order to encourage more Calgarians to try out the new service. Marketing Calgary's BRT will include the following:

- Naming the BRT service
- Branding campaign
 - Tactical deployment
 - Success measurements and feedback

The following provides a summary of key BRT rider benefits and attributes, which also directly relate to the most important value dimensions for public transit service noted from Calgary Transit Customer Satisfaction and Non-User surveys, and One Calgary citizen and business engagement (reliability, safety, value for money/quality, convenience):

1. Convenience – Fewer stops, signal priority, queue jumps, dedicated lanes, next bus arrival time displays.
2. Travel Time and Reliability – Use of Transit Priority infrastructure gets customers to destinations faster and more reliably.
3. Comfort and Safety – Enhanced CCTV, enhanced lighting, heated shelters, larger platforms.
4. Connections – Access to more major destinations, fewer transfers to get to final destinations.

Naming the BRT service

Research was conducted to evaluate other municipalities' BRT implementations along with best practices for transit. Municipalities across the country have launched BRT service to meet transit challenges. Transport Canada's (Urban Transportation Showcase program, 2008) evaluation of BRT program launches and services included the following best practices:

1. Create a separate identity: It is important to clearly delineate the enhanced service as a signature offering that is different from regular bus service. This helps to establish or brand the service as a premium transit offering and has been shown to help attract non-transit users. A distinctive name, logo and colour scheme or graphics is recommended for stations, printed materials, and potentially vehicles..
2. Focus on the positive and unique features of the service: Communications and marketing should emphasize the unique and higher value features of the service such as speed, reliability, service frequency and span, and comfort. Common features that are marketed on many U.S. BRT systems include:
 - a. faster or more efficient than traditional bus service;
 - b. more convenient;

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776)

- c. less expensive than driving and parking;
 - d. alleviates traffic congestion; and,
 - e. better for the environment.
3. The Waterloo region's BRT was launched as iXpress, and the marketing and branding component cost \$500,000 over two years, or five percent of the project's \$9.25 million dollar budget.
 4. Viva BRT service in the York region has spent up to \$300,000 on annual marketing and communications consulting (please note full cost figures are not available).

Embarq, an international organization consulting with municipalities, analyzed BRT networks and the communications and marketing campaigns associated with each of the service launches in multiple cities. Focusing on Canada, the report found:

"Another way of avoiding the stigma often associated with traditional bus transport is to not use the term bus in the new systems name. In York Region, the majority of residents did not hold the public bus service in high regard. As a result, the city made an explicit decision to differentiate its new VIVA BRT service from existing bus services and position VIVA as a new, high-quality alternative... once VIVA was successfully positioned and received positive feedback from the public, York Region rebranded all other bus services under the new VIVA brand."

In summary, launching a dedicated brand for Calgary's new BRT network will:

1. Help citizens/customers easily differentiate the new BRT service from other existing bus routes, and understand its improved value dimensions and customer experience amenities.
2. Differentiate services through improved way finding and signage systems which will help citizens navigate the transit system better.
3. Give the marketing and communications efforts alignment, identification and differentiation to build awareness.
4. Personify the service for increased adoption and acceptance.

The Name

MAX will be the name of Calgary's new BRT service that forms the newest addition to the rapid transit network. MAX sets the service apart from the current BRT and other bus service offered today with a simple and memorable name that expresses the maximum level of service available for Calgary Transit bus customers. The MAX service provides riders with maximum convenience, maximum reliability, maximum comfort, and maximum efficiency to get transit riders where they need to go.

MAX service will begin in the fall of 2018, and service implementation will also include over 40 route changes to local bus service across three quadrants of the city. In order to support educating customers about local route changes, introduce the MAX service, and promote MAX's benefits to Calgarians, three options to reach customers were evaluated.

Marketing Options, Evaluation and Recommendation

Option 1 – Baseline service communications

This option is an information campaign focusing on existing Calgary Transit customers whose routes will be changed in conjunction with BRT implementation (70,000 daily passenger trips), in order to effectively inform them of route changes and the introduction of the MAX service. This

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776)

option is a minimum baseline to take care of our existing customers if one of the other two options are not approved.

This option targets regular and heavy transit users along the affected routes that are changing as part of BRT implementation. It leverages City-owned low cost digital channels such as web, social media, transit app and online promotions with a greater portion of the funding allocated to strategic user group communications and utilizing transit assets to educate affected riders.

Tactical elements are detailed in Attachment 1.

Objective:

- Educate only affected, existing transit bus customers whose routes will be changing (70,000 daily passenger trips) about route changes and additions along the MAX lines

Investment: \$168,000

Option 2 – Service communications and modest promotion

This option includes all of the tactics in Option 1 plus increases the reach and amplifies the promotion tactics of the campaign. It creates more opportunities for Calgary Transit customers, non-users and Calgarians in general to be aware of the MAX service and its benefits and enhanced value dimensions, as well as encourage ridership. This option positions MAX as part of Calgary Transit's rapid transit network, highlighting the reliability, connections, convenience and comfort that customers and potential customers can expect when they take MAX. It will use strong branding and copy to set MAX apart from a typical bus or LRT service, as well as position its fit with the overall transit network.

This option targets regular, heavy, occasional and potential transit users along affected route lines. It also focuses on improvements to the transit website and app to encourage usage of lower cost digital channels for wider promotion, while balancing the need to leverage transit assets via print in the form of posters, bus wraps and signage. Tactical elements are detailed in Attachment 1.

Objectives:

- Educate affected, existing transit bus customers whose routes will be changing (70,000 daily passenger trips) about route changes and additions along the MAX lines
- Increase awareness among all Calgary Transit customers (336,000 daily passenger trips) about MAX, and the route changes that support MAX.
- Raise awareness of the MAX service among Calgarians near the BRT routes (approximately 320,000 in 53 communities) to attract further ridership for the MAX service.
- Introduce colour scheme to support branding.
- Update website to reflect branding and promote MAX features and customer-focused benefits.

Investment: \$366,0000

Option 3 – Large scale communication and service marketing

This option includes all the tactics in Options 1 and 2 plus further increases the reach, promotion and campaign scale to more customers and Calgarians. This robust option includes a full website overhaul including implementing video, customized templates and route plan features, which will also serve Calgary Transit's needs in the future.

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776)

This option targets regular, heavy, occasional and potential transit users across the city. A significant increase in digital advertising, app development and bus print assets extends the reach and exposure across the city versus targeting only along the MAX routes. It also further enhances the website by updating the content management system for better functionality and user experience. Tactical elements are detailed in Attachment 1.

Objectives:

- Educate affected, existing transit bus customers whose routes will be changing (70,000 daily passenger trips) about route changes and additions along the MAX lines.
- Increase awareness among all Calgary Transit customers (336,000 daily passenger trips) about MAX, and the route changes that support MAX.
- Raise awareness of the MAX service among half of Calgarians (623,000) to further attract ridership for the MAX service.
- Update Calgary Transit website user experience and functionality enhancements.

Investment: \$677,000

Recommendation

Administration recommends Option 2 for the BRT network marketing strategy. This choice leverages the minimum baseline Option one funding to support existing customers through significant route changes, while also increasing awareness of MAX service, promoting the brand and important value dimensions, using industry best practices and expanding audience reach. Option 2 provides a balanced approach to meeting the overall marketing strategy goals and maximizing return on investment given current financial constraints. Success measures and feedback loops for this option include:

- 80 per cent of affected Calgary Transit riders understand the route changes, and what bus they need to take including MAX. Measurement via Calgary Transit rider intercept surveys.
- Monitoring and analysis of Calgary Transit service line calls, 311, social and traditional media monitoring, and online analytics.
- 311 data comparative to the last major service review change done by Calgary Transit in the northwest and centre city.
- 50 per cent of all Calgary Transit riders understand the route changes, and what bus they need to take including MAX. Measurement via Calgary Transit customer satisfaction survey.
- 25 per cent of all non-transit riders are aware of the MAX service. Measurement via Calgary Transit customer satisfaction and non-user surveys.
- Ongoing evaluation of MAX and overall transit ridership.

This option also aligns with how Viva and iXpress (York and Waterloo comparisons) promoted BRT offerings by branding an enhanced bus service.

Stakeholder Engagement, Research and Communication

Public feedback on the marketing of new transit services was collected as part of engagement conducted during the development of RouteAhead – A Strategic Plan for Transit in Calgary. The Calgary Transit Customer Advisory Group has also been previously consulted on marketing initiatives for new transit service. Through this engagement our Customer Advisory Group found value in providing a unique visual identity for enhanced services such as the BRT, which

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776)

provide greater awareness in the quality of service to be provided. Significant customer and community engagement has also been conducted over 2018 on the BRT network and associated route changes.

Strategic Alignment

The BRT network was identified as a key short-term priority for the development of the primary transit network in the Calgary Transportation Plan, RouteAhead, and Investing in Mobility.

RouteAhead provides direction to enhance the marketing and promotion of existing and new transit services and customer experience improvements, in order to increase customer awareness and attract greater ridership. Particular emphasis is placed on pursuing enhanced branding and marketing of the rapid transit network, to showcase the convenience, value and improved amenities to customers and all Calgarians.

Social, Environmental, Economic (External)

Public transit options allow citizens to take part in a variety of economic and social activities. The Canadian Urban Transit Association has outlined the public health benefits of public transit to include improved urban air quality and increased physical activity, which can lower the risk for many diseases.

The appropriate quantity and quality of transit service and complete communities attract higher levels of ridership, decreasing the economic and environmental impacts associated with urban travel. Providing rapid transit service plays a key role in Calgary's overall mobility plan. In addition to the direct transit customer benefits, investment in public transit benefits the broader community by:

- helping revitalize corridors and main streets,
- providing mobility choice,
- connecting employers to an expanded workforce
- supporting Greenhouse Gas reduction, and
- supporting redevelopment, particularly at Transit Oriented Developments (TOD).

Public transit provides choice, expanded opportunity to move and connect with the community, with a more convenient and socially inclusive mode of travel. Marketing the value and benefits of new rapid transit service options will increase customer awareness of the services and attract new riders to transit.

An effective marketing and communications strategy needs to focus on all allowing access to all Calgarians through multiple channels and various languages. Given the diversity of Calgarians, a variety of tactics will be required to be successful.

Financial Capacity

Current and Future Operating Budget:

Approval of Option 2 will add \$366,000 to Program 110 in the 2018 Calgary Transit Operating Budget.

Current and Future Capital Budget:

There are no capital budget implications associated with the recommendations in this report.

Bus Rapid Transit Network Marketing Strategy (PFC2018-0776)

Risk Assessment

Information is a key element of Calgary Transit's Customer Commitment. Existing communications resources and channels will be used to inform current customers about the network changes; however, it will not be possible to communicate the significant scope of the changes as effectively, and promote the value and benefits of the new BRT service and amenities to a wider audience without the requested additional funding for enhanced marketing and communications. Given the major capital and operating investments that have been made in the BRT network, there will be a significant missed opportunity to improve awareness of the higher-quality service and build new ridership across Calgary if funding is not allocated. An additional risk is potential negative citizen perception of spending additional funding to market the BRT service; however, minimum baseline funding is required to communicate operational changes and support existing customers through changes to their route network.

REASON(S) FOR RECOMMENDATION(S):

The implementation of the BRT network is a major step forward in expanding the rapid transit network in Calgary. In addition to the introduction of new BRT routes, there will be revisions to dozens of existing bus routes across the city to improve transit connectivity and make efficient use of the BRT infrastructure investments. The recommended Option 2 will allow for effective communication of the scope of the network changes to existing Calgary Transit customers, as well as wider promotion of the enhanced connectivity, convenience and customer experience amenities to attract new customers and build ridership.

ATTACHMENT(S)

1. Attachment 1 – Calgary Bus Rapid Transit Network Communications & Marketing Options

Calgary Bus Rapid Transit Network Communications & Marketing Options

TT2018-0905
(PFC2018-0776)
ATTACHMENT 1

Option 1 – Baseline service communications

Information campaign focusing on existing Calgary Transit customers whose routes will be changed in conjunction with BRT implementation, in order to effectively inform them of route changes and the introduction of the MAX service. Purely informative campaign with no creative/branding elements.

Objective:

Educate only affected, existing transit bus customers whose routes will be changing (70,000 daily passenger trips) about route changes and additions along the MAX lines.

Tactic	Description	Investment
Digital Channels (owned)	Promote and inform utilizing existing digital channels (app, social media, web)	\$ 0
Transit Assets	Limited reach using existing resources and assets to help educate all transit riders (bus shelters, LRT Platforms)	\$61,000
TV	Report to Calgarians which has a wide reach and helps drive traffic to the website	\$4,000
Print	Targets select areas with high ridership and specific groups where digital access is not viable- for example seniors (Calgary Transit Riders Guide)	\$68,000
Information Sessions	Follow up to prior engagement sessions	\$20,000
Contingency – 10%		\$15,000
TOTAL:		\$168,000

**Funding allocations above or subject change based on prioritization or strategic direction.

Measures & Feedback:

- 50 per cent of affected Calgary Transit riders understand the route changes, and what bus they need to take including MAX. Measurement via Calgary Transit rider intercept surveys.
- Monitoring and analysis of Calgary Transit service line calls, 311, social and traditional media monitoring and online analytics.
- 311 data comparatives to the last major service review change done by Calgary Transit in the northwest and centre city.

Option 2 – Service communications and modest promotion

This option expands on the information campaign (Option 1) plus adds a brand creative to promote and educate Calgary Transit customers about the MAX service, its benefits and enhanced value dimensions, and the connections it provides across the city. Increasing the reach of the campaign creates more opportunities to promote a branded premium bus offering and encourage ridership.

Objectives:

- Educate affected, existing transit bus customers whose routes will be changing (70,000 daily passenger trips) additions along the MAX lines.
- Increase awareness among all Calgary Transit customers (336,000 daily passenger trips) about MAX, and the route changes that support MAX.
- Raise awareness of the MAX service among Calgarians near the BRT routes (approximately 320,000 in 53 communities) to attract further ridership for the MAX service.
- Introduce creative and branding elements.
- Update website to reflect branding and promote MAX features and customer-focused benefits.

Tactic	Description	Investment
Digital Channels (owned)	Option 1 plus additional spend to build out branded elements and enhance interaction	\$30,000
Transit Assets	Option 1 plus enhanced branding on signage	\$66,000
TV & Radio	Option 1 plus increased reach through radio and multicultural stations	\$69,000
Print	Option 1 plus bus wraps	\$93,000
Information Sessions & Event	Option 1 plus service launch and promotion event	\$45,000
Design	MAX creative campaign development	\$30,000
Contingency – 10%		\$33,000
TOTAL:		\$366,000

**Funding allocations above or subject change based on prioritization or strategic direction

Measures & Feedback:

- 80 per cent of affected Calgary Transit riders understand the route changes, and what bus they need to take including MAX. Measurement via Calgary Transit rider intercept surveys.
- Monitoring and analysis of Calgary Transit service line calls, 311, social and traditional media monitoring, and online analytics.
- 311 data comparative to the last major service review change done by Calgary Transit in the northwest and centre city.
- 50 per cent of all Calgary Transit riders understand the route changes, and what bus they need to take including MAX. Measurement via Calgary Transit customer satisfaction survey.
- 25 per cent of all non-transit riders are aware of the MAX service. Measurement via Calgary Transit customer satisfaction and non-user surveys.
- Ongoing evaluation of MAX and overall transit ridership.

Option 3 – Large scale communication and service marketing

This option expands on the information and branding campaign from Option 2 plus increases promotion of the MAX service across the city, to increase the reach, promotion and campaign scale to more customers and Calgarians.

Objectives:

- Educate affected, existing transit bus customers whose routes will be changing (70,000 daily passenger trips) about route changes and additions along the MAX lines.
- Increase awareness among all Calgary Transit customers (336,000 daily passenger trips) about MAX, and the route changes that support MAX.
- Raise awareness of the MAX service among half of Calgarians (623,000) to further attract ridership for the MAX service.
- Update Calgary Transit website user experience and functionality enhancements.

Tactic	Description	Investment
Digital Channels (owned & non-owned)	Option 2 plus advertising on non-owned mobile apps as well as improved user experience on Calgary Transit website app	\$94,000
Transit Assets	Same as Option 2	\$66,000
TV & Radio	Option 2 with increased radio advertising on multilingual stations.	\$94,000
Print	Option 2 plus banners on additional lines and targeted advertising in highly visible areas.	\$276,000
Information Session & Events	Option 2 plus additional online advertising for service launch and promotion event	\$55,000
Design	Same as Option 2	\$30,000
Contingency – 10%		\$62,000
TOTAL:		\$677,000

**Funding allocations above or subject change based on prioritization or strategic direction.

Measures & Feedback:

- 90 per cent of affected Calgary Transit riders understand the route changes, and what bus they need to take including MAX. Measurement via Calgary Transit rider intercept surveys.
- Monitoring and analysis of Calgary Transit service line calls, 311, social and traditional media monitoring and online analytics.
- 311 data comparative to the last major service review change done by Calgary Transit in the northwest.
- 35 per cent of all non-transit riders are aware of the MAX service. Measurement via Calgary Transit customer satisfaction survey.