Stantec

South Shaganappi Study

Technical Report

June 28, 2018

Prepared for:

The City of Calgary

Prepared by:

Stantec Consulting Ltd.

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.

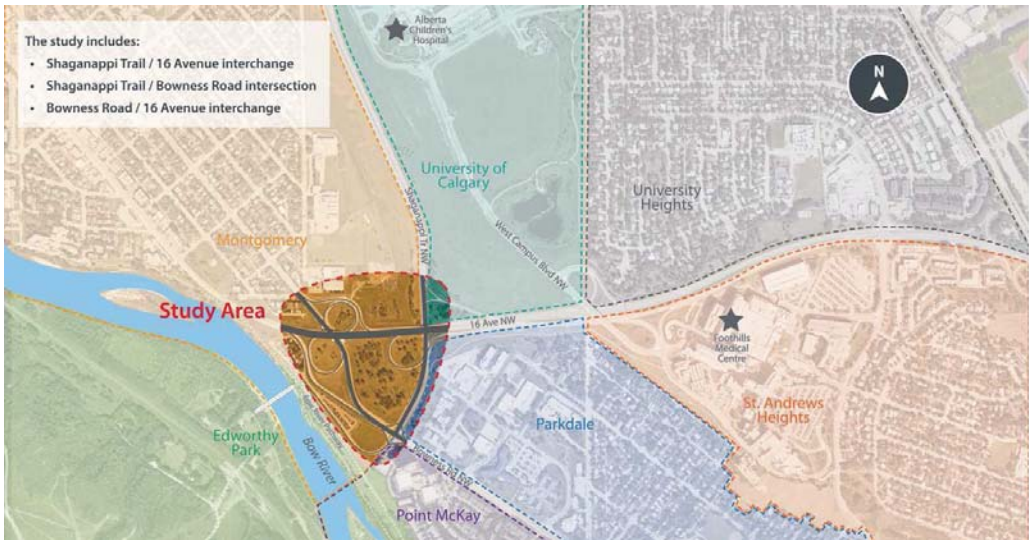


Figure E. 1: South Shaganappi Corridor Study - Study Area

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.

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.

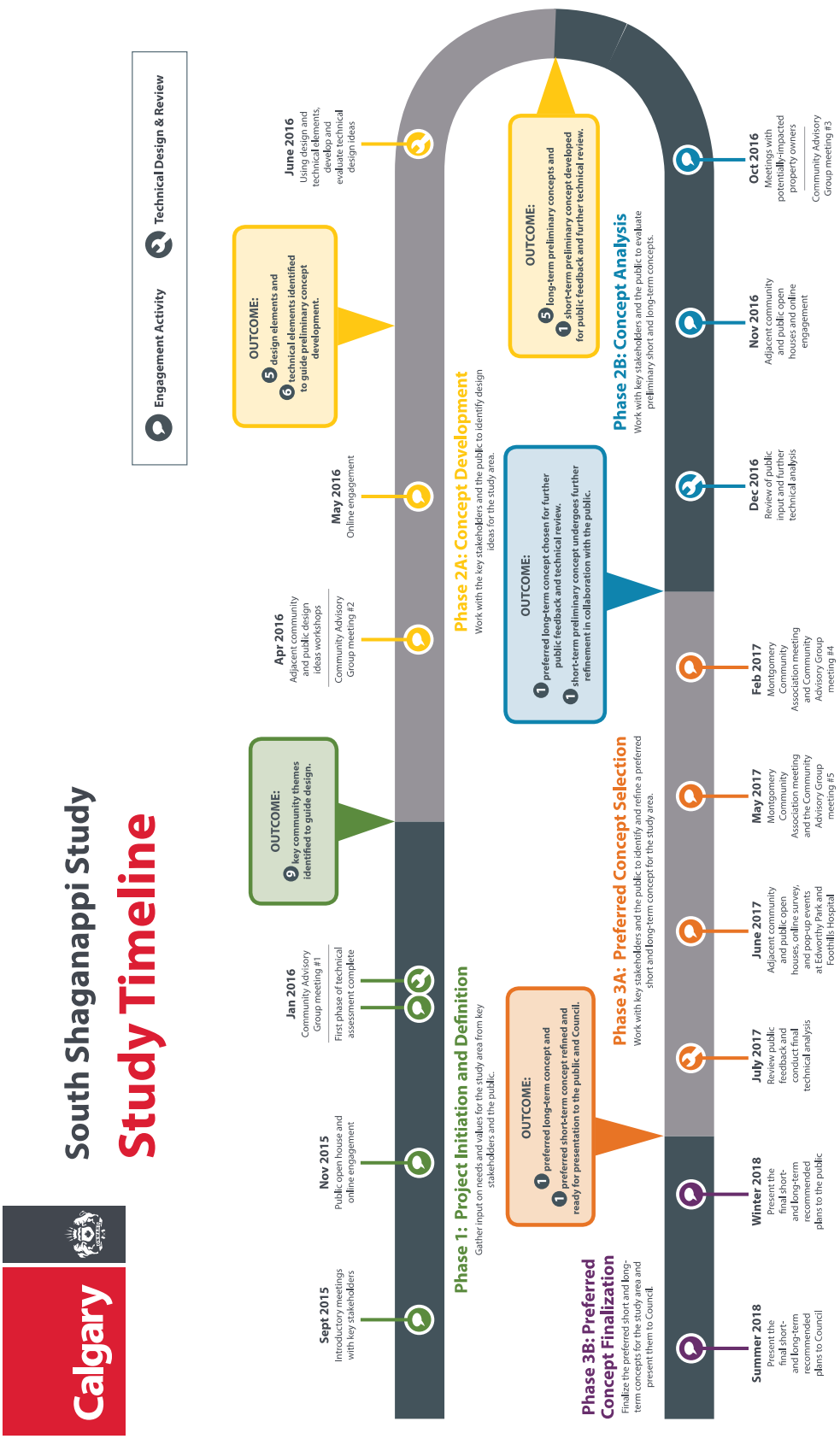


Figure E.2: South Shaganappi Study - Study Phases

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.

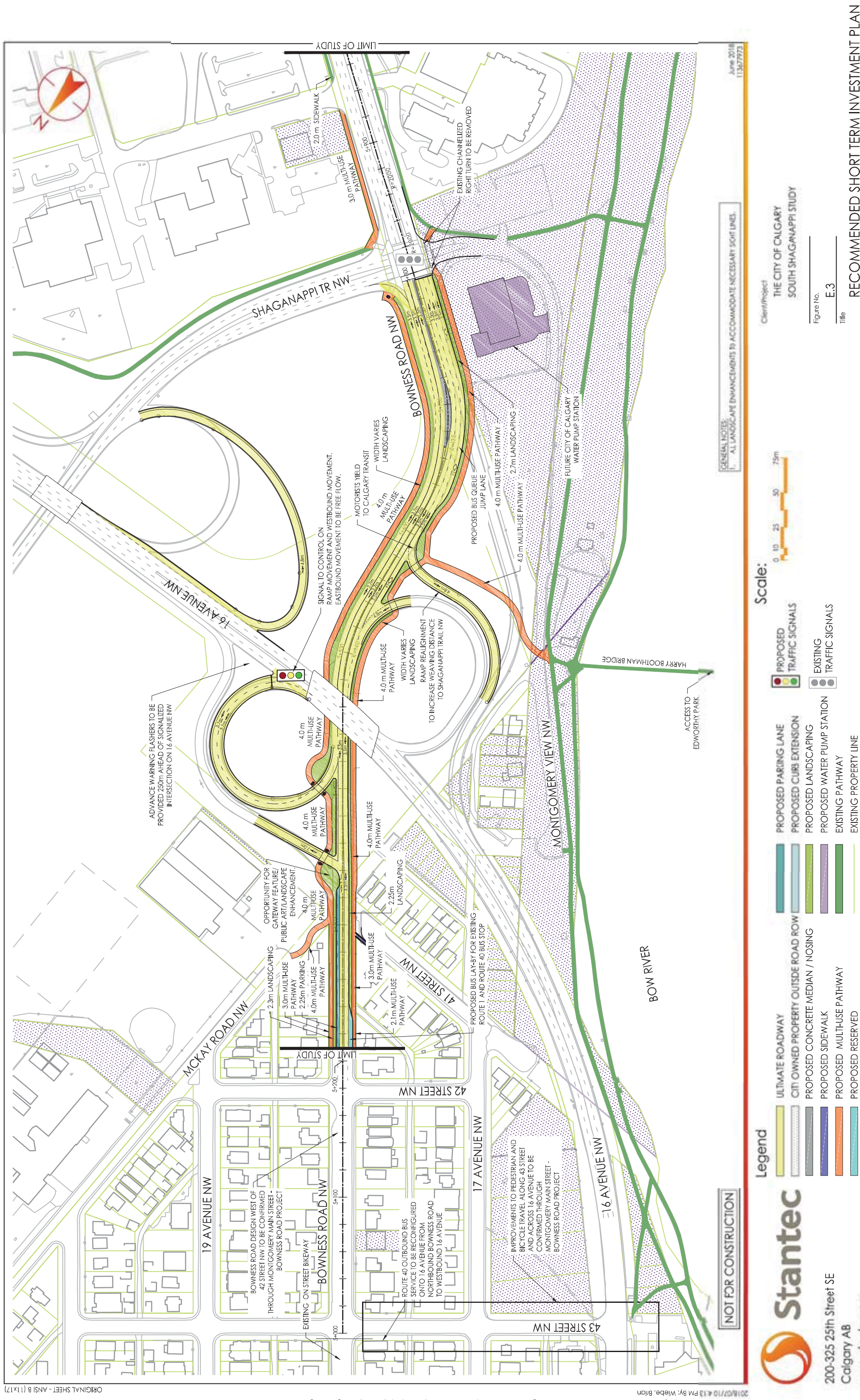
- **Install a new traffic signal and dual lane entrance ramp to control northbound Bowness Road NW to westbound 16 Avenue NW**. Installing a new traffic signal at the Bowness Road NW to 16 Avenue NW on-ramp will separate traffic movements at this location by using dedicated traffic signal phases for each vehicle movement. The dual lane entrance ramp will provide additional queuing space for vehicles.

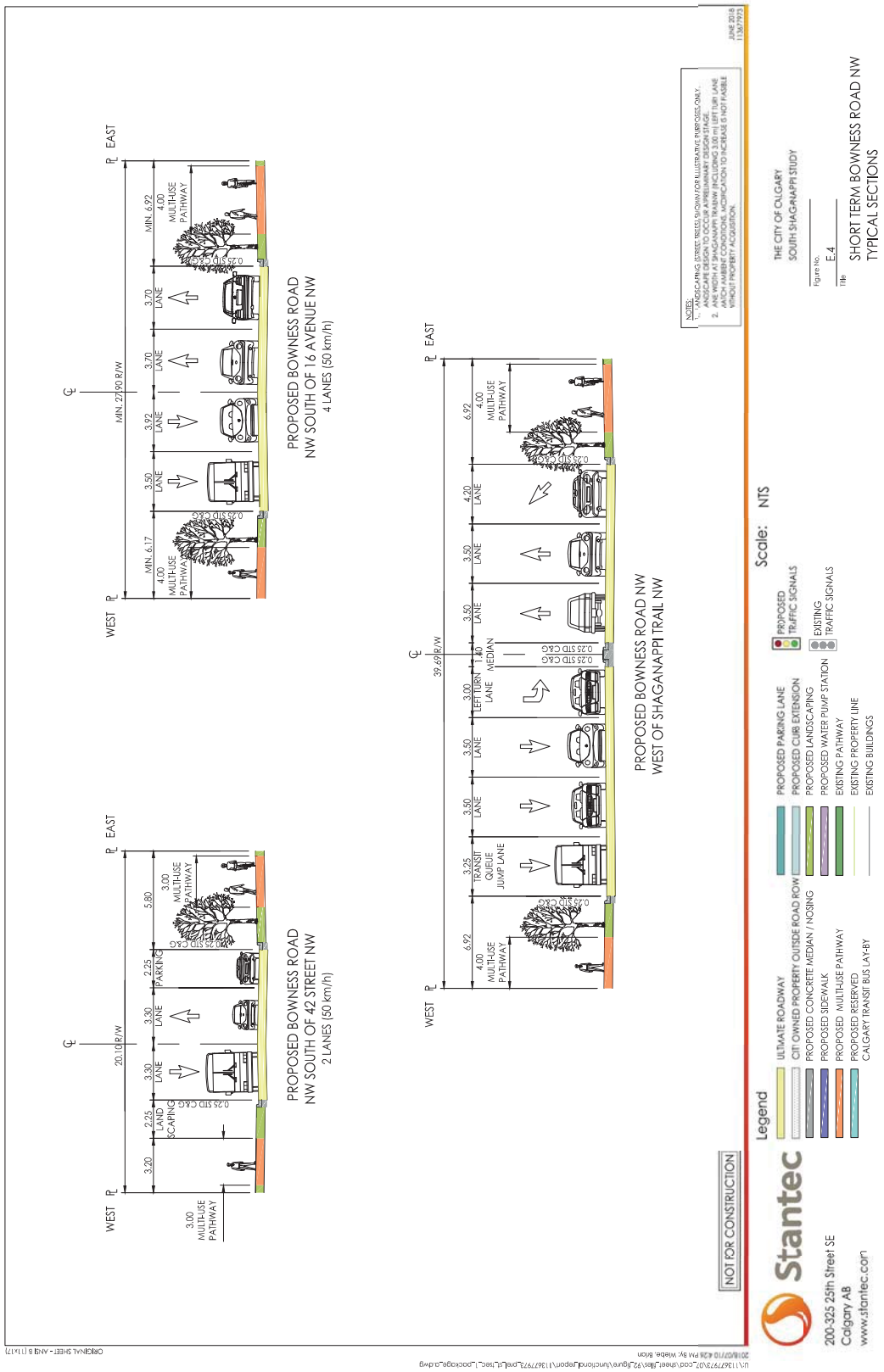
SOUTH SHAGANAPPI STUDY

Executive Summary

- **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.


RECOMMENDED SHORT TERM INVESTMENT PLAN
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No.
E.3
Client/Project
Title
Stantec
200-325 25th Street SE
Calgary AB
www.stantec.com
NOT FOR CONSTRUCTION
Legend
ULTIMATE ROADWAY
CITY OWNED PROPERTY OUTSIDE ROAD ROW
PROPOSED CONCRETE MEDIAN / NOSING
PROPOSED SIDEWALK
PROPOSED MULTI-USE PATHWAY
PROPOSED RESERVED CALGARY TRANSIT BUS LAY-BY
PROPOSED PARKING LANE
PROPOSED CURB EXTENSION
PROPOSED LANDSCAPING
PROPOSED WATER PUMP STATION
EXISTING PATHWAY
EXISTING PROPERTY LINE
EXISTING BUILDINGS
PROPOSED TRAFFIC SIGNALS
EXISTING TRAFFIC SIGNALS
Scale:
GENERAL NOTES:
1. ALL LANDSCAPE ENHANCEMENTS TO ACCOMMODATE NECESSARY SIGHT LINES.
LIMIT OF STUDY
SHAGANAPPI TR NW
BOWNESS ROAD NW
16 AVENUE NW
MONTGOMERY VIEW NW
HARRY BOOTHMAN BRIDGE
BOW RIVER
MCKAY ROAD NW
41 STREET NW
42 STREET NW
43 STREET NW
17 AVENUE NW
19 AVENUE NW
ACCESS TO EDWORTHY PARK
FUTURE CITY OF CALGARY WATER PUMP STATION
EXISTING CHANNELIZED RIGHT TURN TO BE REMOVED
PROPOSED BUS QUEUE JUMP LANE
MOTORISTS YIELD TO CALGARY TRANSIT
SIGNAL TO CONTROL ON RAMP MOVEMENT AND WESTBOUND MOVEMENT. EASTBOUND MOVEMENT TO BE FREE FLOW.
RAMP REALIGNMENT TO INCREASE WEAVING DISTANCE TO SHAGANAPPI TRAIL NW
ADVANCE WARNING FLASHERS TO BE PROVIDED 250m AHEAD OF SIGNALIZED INTERSECTION ON 16 AVENUE NW
OPPORTUNITY FOR GATEWAY FEATURE/ PUBLIC ART/LANDSCAPE ENHANCEMENT.
PROPOSED BUS LAY-BY FOR EXISTING ROUTE 1 AND ROUTE 40 BUS STOP
EXISTING ON STREET BIKEWAY
ROUTE 40 OUTBOUND BUS SERVICE TO BE RECONFIGURED ONTO 16 AVENUE FROM NORTHBOUND BOWNESS ROAD TO WESTBOUND 16 AVENUE
BOWNESS ROAD DESIGN WEST OF 42 STREET NW TO BE CONFIRMED THROUGH MONTGOMERY MAIN STREET - BOWNESS ROAD PROJECT
IMPROVEMENTS TO PEDESTRIAN AND BICYCLE TRAVEL ALONG 43 STREET AND ACROSS 16 AVENUE TO BE CONFIRMED THROUGH MONTGOMERY MAIN STREET - BOWNESS ROAD PROJECT
ORIGINAL SHEET - ANSI B (11x17)


PROPOSED BOWNESS ROAD
NW SOUTH OF 42 STREET NW
2 LANES (50 km/h)
PROPOSED BOWNESS ROAD
NW SOUTH OF 16 AVENUE NW
4 LANES (50 km/h)
PROPOSED BOWNESS ROAD NW
WEST OF SHAGANAPPI TRAIL NW
WEST
EAST
NOTES:
NOT FOR CONSTRUCTION
Legend
ULTIMATE ROADWAY
CITY OWNED PROPERTY OUTSIDE ROAD ROW
PROPOSED CONCRETE MEDIAN / NOSING
PROPOSED SIDEWALK
PROPOSED MULTI-USE PATHWAY
PROPOSED RESERVED
CALGARY TRANSIT BUS LAY-BY
PROPOSED PARKING LANE
PROPOSED CURB EXTENSION
PROPOSED LANDSCAPING
PROPOSED WATER PUMP STATION
EXISTING PATHWAY
EXISTING PROPERTY LINE
EXISTING BUILDINGS
PROPOSED TRAFFIC SIGNALS
EXISTING TRAFFIC SIGNALS
Scale: NTS
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No. E.4
Title SHORT TERM BOWNESS ROAD NW TYPICAL SECTIONS
JUNE 2018
Stantec
200-325 25th Street SE
Calgary AB
www.stantec.com

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**

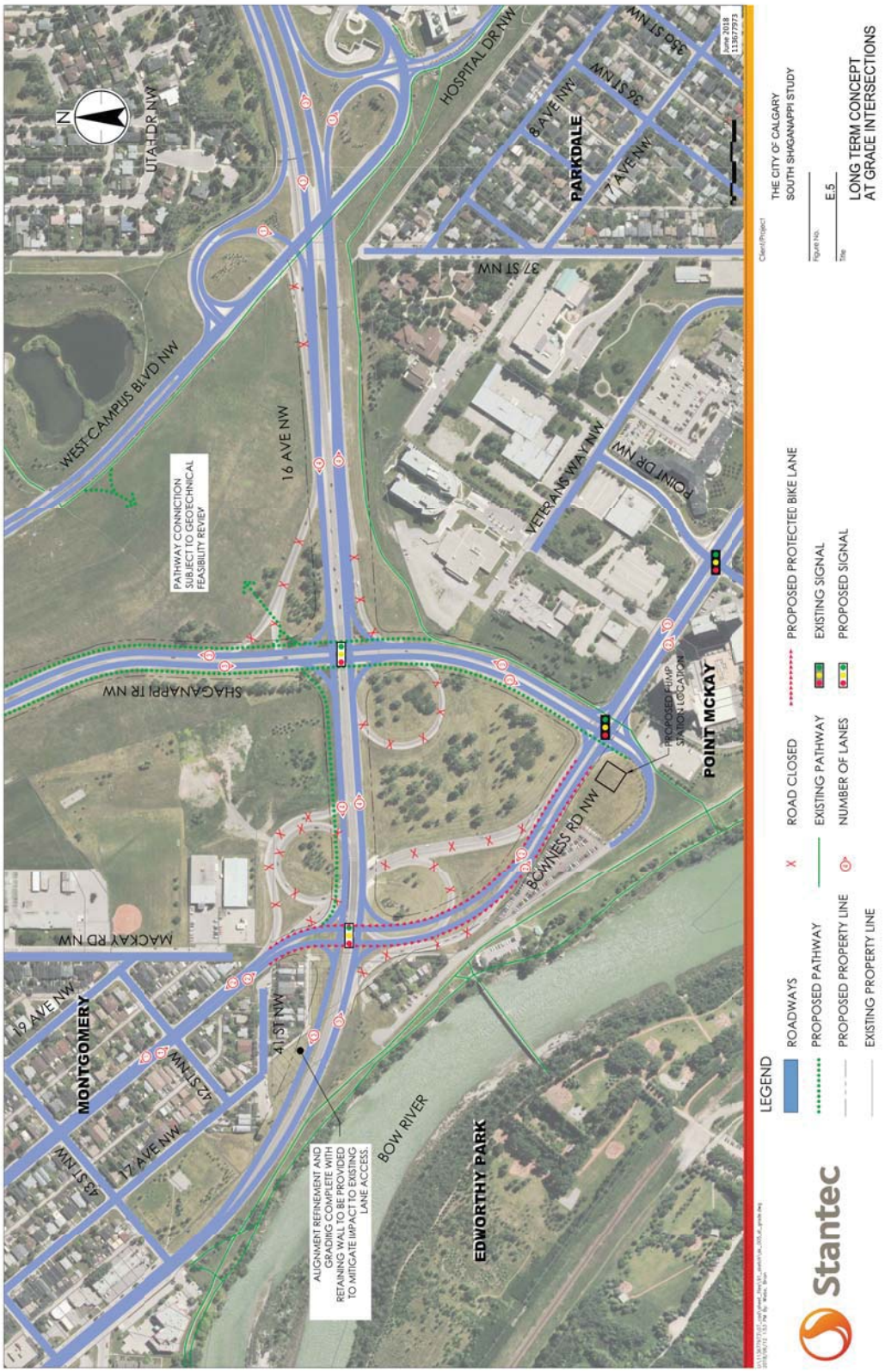
*Rounded to the nearest $1,000. Opinion of probable cost based on a Class 5 cost estimate.

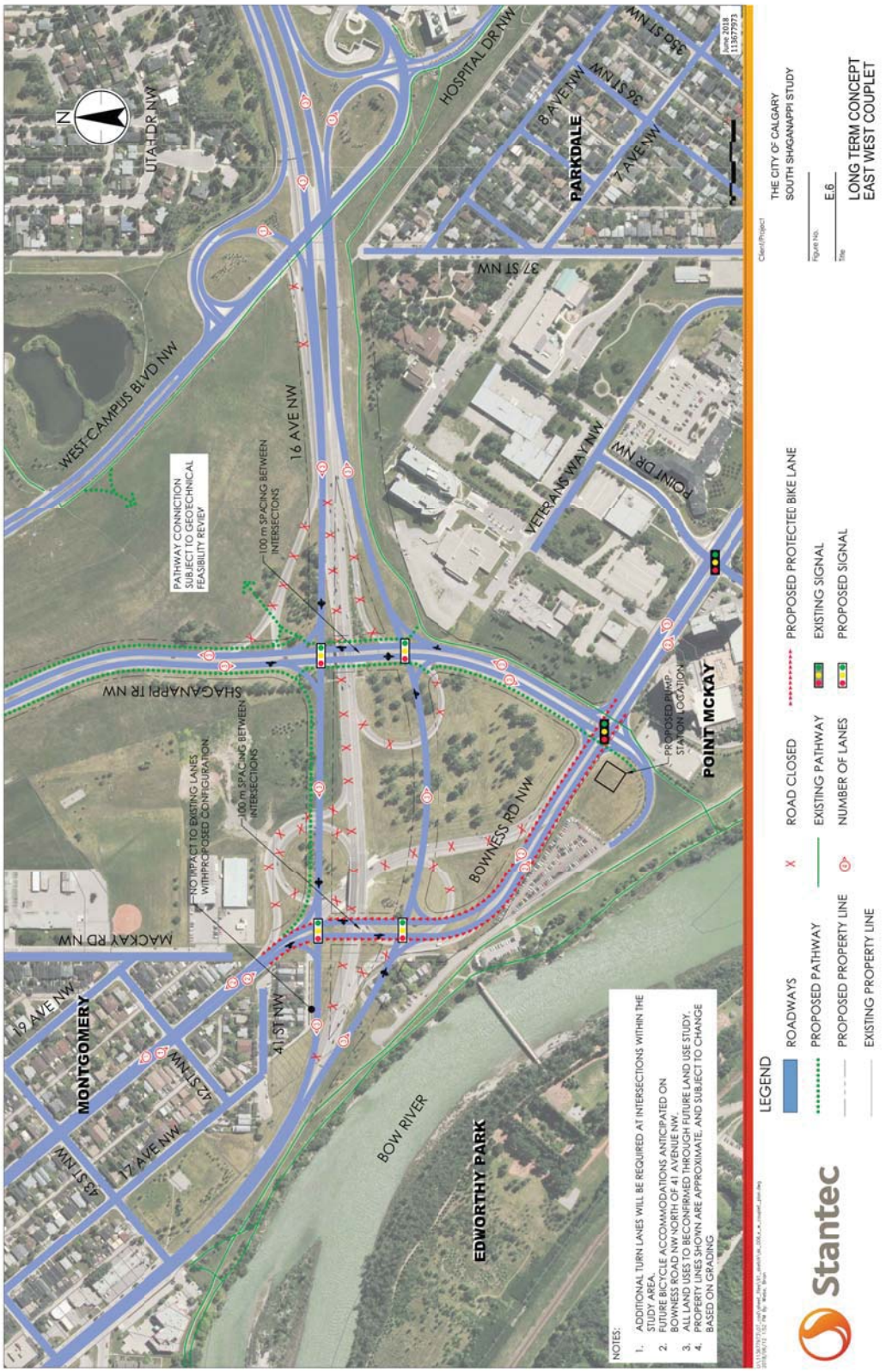
LONG-TERM CONCEPT DEVELOPMENT

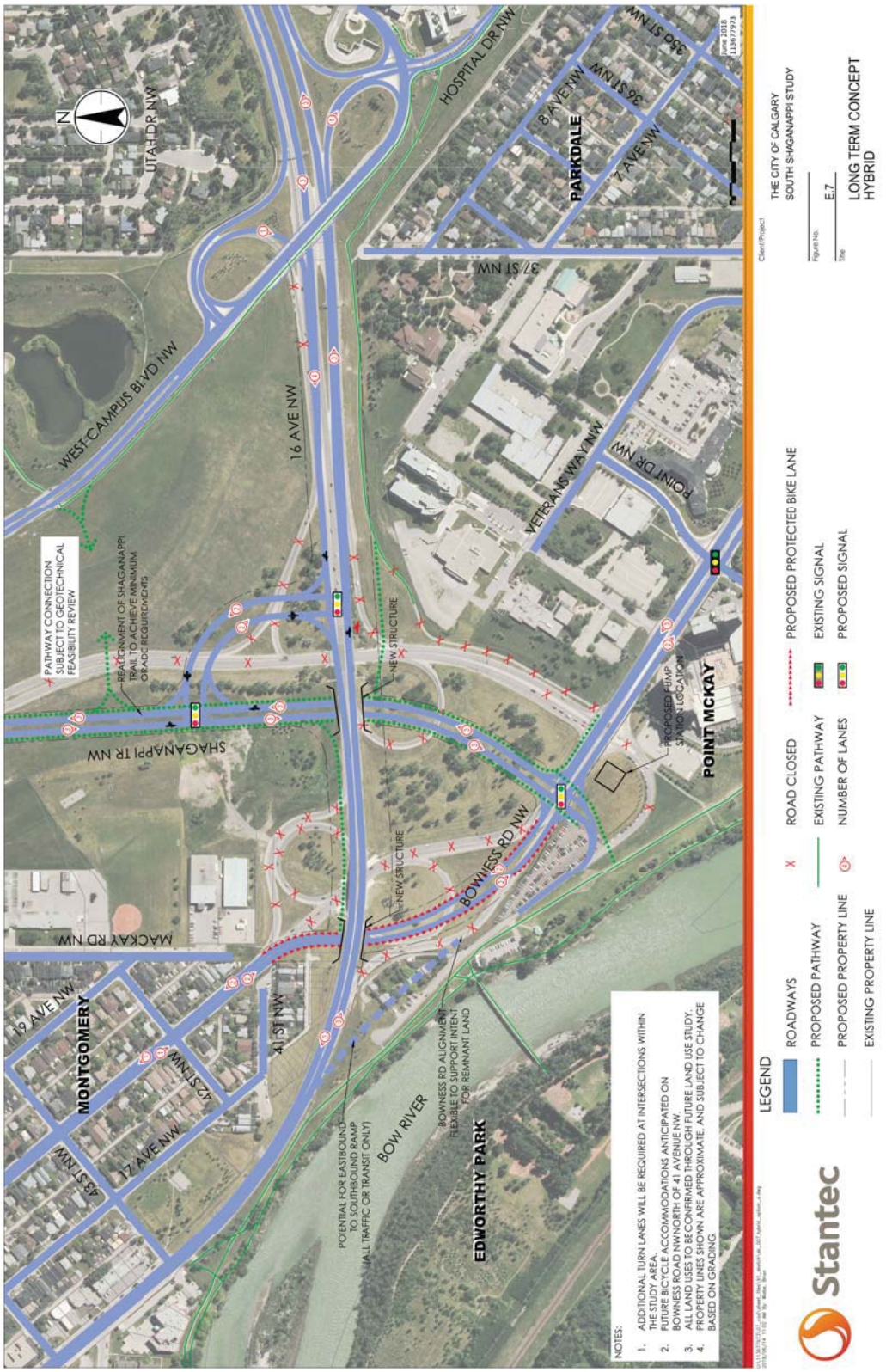
A thorough and participatory approach was taken to develop, evaluate, and recommend a preferred long-term concept for the South Shaganappi Study Area. Stakeholders were involved in concept development through a range of engagement activities including face-to-face meetings, in-person events, online engagement 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**.

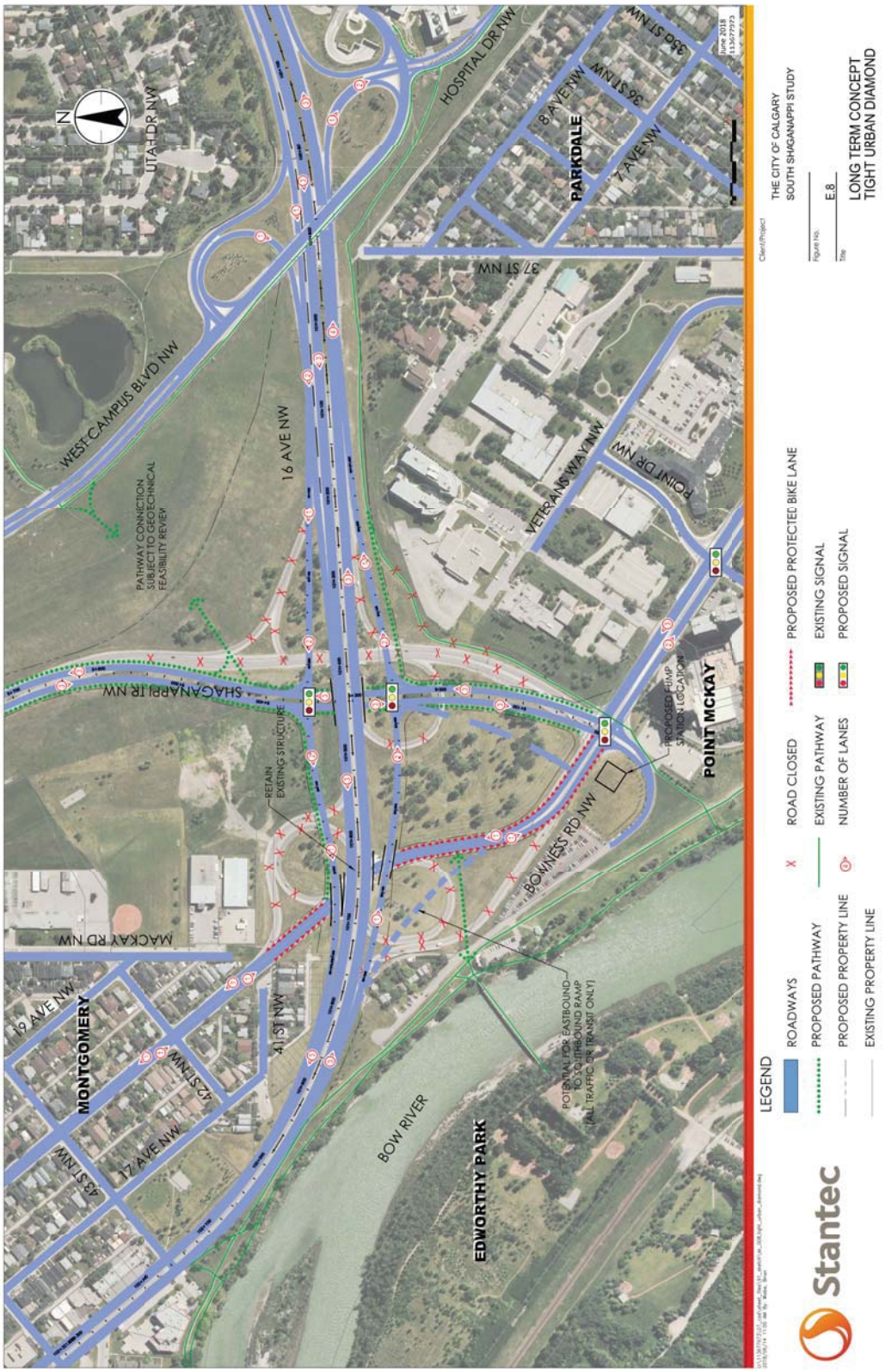
Table E. 2: Long-term Design Concepts Evaluated

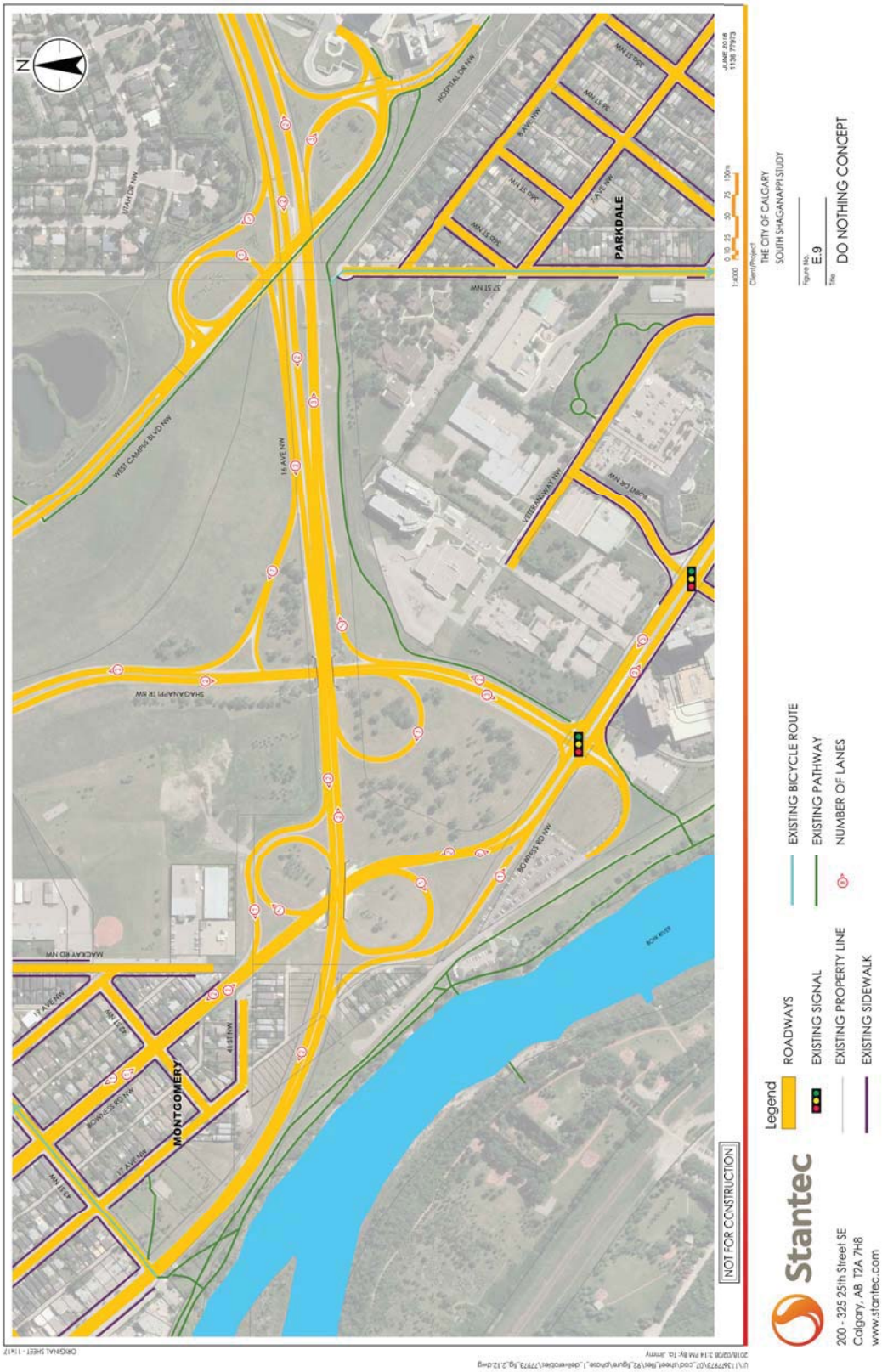
Concept	Description
At-Grade Intersections	This concept consists of new at-grade intersections on 16 Avenue NW at Bowness Road NW and Shaganappi Trail NW. All existing interchange ramps located at these junctions would be removed.
East-West Couplet	This concept consists of a reconfiguration of 16 Avenue 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.


N
UTAH DR NW
HOSPITAL DR NW
WEST CAMPUS BLVD NW
16 AVE NW
PATHWAY CONNECTION SUBJECT TO GEOTECHNICAL FEASIBILITY REVIEW
SHAGANAPPI TR NW
MACKAY RD NW
BOWNESS RD NW
PROPOSED PUMP STATION LOCATION
POINT MCKAY
VETERANS WAY NW
POINT DR NW
37 ST NW
8 AVE NW
7 AVE NW
PARKDALE
36 ST NW
350 ST NW
19 AVE NW
MONTGOMERY
42 ST NW
43 ST NW
41 ST NW
17 AVE NW
BOW RIVER
EDWORTHY PARK
ALIGNMENT REFINEMENT AND GRADING COMPLETE WITH RETAINING WAL TO BE PROVIDED TO MITIGATE IMPACT TO EXISTING LANE ACCESS.
LEGEND
ROADWAYS
PROPOSED PATHWAY
PROPOSED PROPERTY LINE
EXISTING PROPERTY LINE
ROAD CLOSED
EXISTING PATHWAY
NUMBER OF LANES
PROPOSED PROTECTED BIKE LANE
EXISTING SIGNAL
PROPOSED SIGNAL
Stantec
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No. E.5
Title
LONG TERM CONCEPT
AT GRADE INTERSECTIONS


N
UTAH DR NW
HOSPITAL DR NW
WEST CAMPUS BLVD NW
16 AVE NW
37 ST NW
PARKDALE
8 AVE NW
7 AVE NW
36A ST NW
36 ST NW
POINT DR NW
VETERANS WAY NW
PATHWAY CONNECTION SUBJECT TO GEOTECHNICAL FEASIBILITY REVIEW
100 m SPACING BETWEEN INTERSECTIONS
SHAGANAPPI TR NW
NO IMPACT TO EXISTING LANES WITH PROPOSED CONFIGURATION
100 m SPACING BETWEEN INTERSECTIONS
MACKAY RD NW
BOWNESS RD NW
PROPOSED PUMP STATION LOCATION
POINT MCKAY
19 AVE NW
MONTGOMERY
43 ST NW
42 ST NW
41 ST NW
17 AVE NW
BOW RIVER
EDWORTHY PARK
NOTES:
1. ADDITIONAL TURN LANES WILL BE REQUIRED AT INTERSECTIONS WITHIN THE STUDY AREA.
2. FUTURE BICYCLE ACCOMMODATIONS ANTICIPATED ON BOWNESS ROAD NW NORTH OF 41 AVENUE NW.
3. ALL LAND USES TO BE CONFIRMED THROUGH FUTURE LAND USE STUDY.
4. PROPERTY LINES SHOWN ARE APPROXIMATE, AND SUBJECT TO CHANGE BASED ON GRADING
LEGEND
ROADWAYS
PROPOSED PATHWAY
PROPOSED PROPERTY LINE
EXISTING PROPERTY LINE
ROAD CLOSED
EXISTING PATHWAY
NUMBER OF LANES
PROPOSED PROTECTED BIKE LANE
EXISTING SIGNAL
PROPOSED SIGNAL
Stantec
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No. E.6
Title
LONG TERM CONCEPT
EAST WEST COUPLET
June 2018
113677373


N
WEST CAMPUS BLVD NW
16 AVE NW
UTAH DR NW
HOSPITAL DR NW
37 ST NW
8 AVE NW
7 AVE NW
36A ST NW
PARKDALE
VETERANS WAY NW
POINT DR NW
PROPOSED PUMP STATION LOCATION
POINT MCKAY
PATHWAY CONNECTION SUBJECT TO GEOTECHNICAL FEASIBILITY REVIEW
REALIGNMENT OF SHAGANAPPI TRAIL TO ACHIEVE MINIMUM GRADE REQUIREMENTS
SHAGANAPPI TR NW
NEW STRUCTURE
NEW STRUCTURE
BOWNESS RD NW
BOWNESS RD ALIGNMENT FLEXIBLE TO SUPPORT INTENT FOR REMNANT LAND
MACKAY RD NW
POTENTIAL FOR EASTBOUND TO SOUTHBOUND RAMP (ALL TRAFFIC OR TRANSIT ONLY)
BOW RIVER
EDWORTHY PARK
MONTGOMERY
19 AVE NW
41 ST NW
42 ST NW
43 ST NW
NOTES:
1. ADDITIONAL TURN LANES WILL BE REQUIRED AT INTERSECTIONS WITHIN THE STUDY AREA.
2. FUTURE BICYCLE ACCOMMODATIONS ANTICIPATED ON BOWNESS ROAD NW NORTH OF 41 AVENUE NW.
3. ALL LAND USES TO BE CONFIRMED THROUGH FUTURE LAND USE STUDY.
4. PROPERTY LINES SHOWN ARE APPROXIMATE, AND SUBJECT TO CHANGE BASED ON GRADING.
LEGEND
ROADWAYS
PROPOSED PATHWAY
PROPOSED PROPERTY LINE
EXISTING PROPERTY LINE
ROAD CLOSED
EXISTING PATHWAY
NUMBER OF LANES
PROPOSED PROTECTED BIKE LANE
EXISTING SIGNAL
PROPOSED SIGNAL
Stantec
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No. E.7
Title LONG TERM CONCEPT HYBRID


N
UTAH DR NW
HOSPITAL DR NW
WEST CAMPUS BLVD NW
16 AVE NW
PATHWAY CONNECTION SUBJECT TO GEOTECHNICAL FEASIBILITY REVIEW
SHAGANAPPI TR NW
RETAIN EXISTING STRUCTURE
PROPOSED PUMP STATION LOCATION
POINT MCKAY
BOWNESS RD NW
MACKAY RD NW
19 AVE NW
MONTGOMERY
41 ST NW
42 ST NW
43 ST NW
17 AVE NW
BOW RIVER
EDWORTHY PARK
POTENTIAL FOR EASTBOUND TO SOUTHBOUND RAMP (ALL TRAFFIC OR TRANSIT ONLY)
37 ST NW
VETERANS WAY NW
POINT DR NW
PARKDALE
8 AVE NW
7 AVE NW
36 ST NW
350 ST NW
LEGEND
ROADWAYS
PROPOSED PATHWAY
PROPOSED PROPERTY LINE
EXISTING PROPERTY LINE
ROAD CLOSED
EXISTING PATHWAY
NUMBER OF LANES
PROPOSED PROTECTED BIKE LANE
EXISTING SIGNAL
PROPOSED SIGNAL
Stantec
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No. E.8
Title
LONG TERM CONCEPT
TIGHT URBAN DIAMOND
June 2018
113677973


N
PARKDALE
MONTGOMERY
16 AVE NW
WEST CAMPUS BLVD NW
SHAGANAPPI TR NW
BOWNESS RD NW
MACKAY RD NW
NOT FOR CONSTRUCTION
Legend
ROADWAYS
EXISTING SIGNAL
EXISTING PROPERTY LINE
EXISTING SIDEWALK
EXISTING BICYCLE ROUTE
EXISTING PATHWAY
NUMBER OF LANES
Stantec
200 - 325 25th Street SE
Calgary, AB T2A 7H8
www.stantec.com
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No.
E.9
Title
DO NOTHING CONCEPT

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.

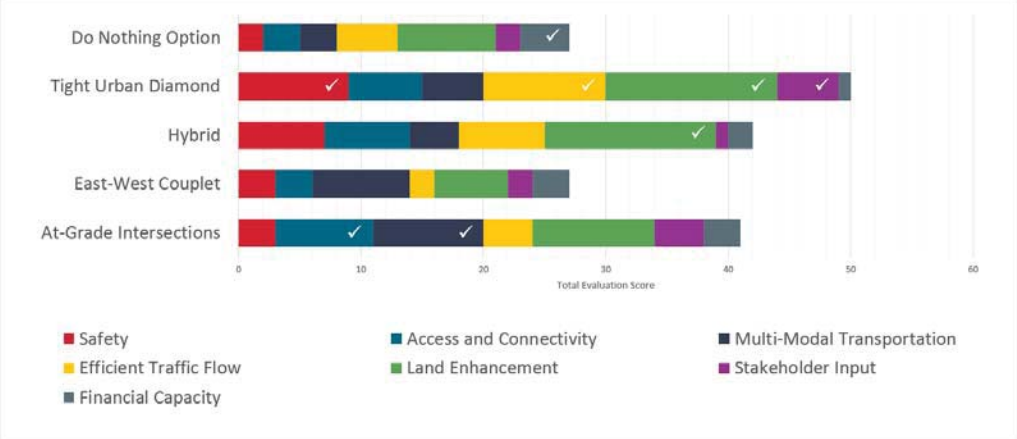


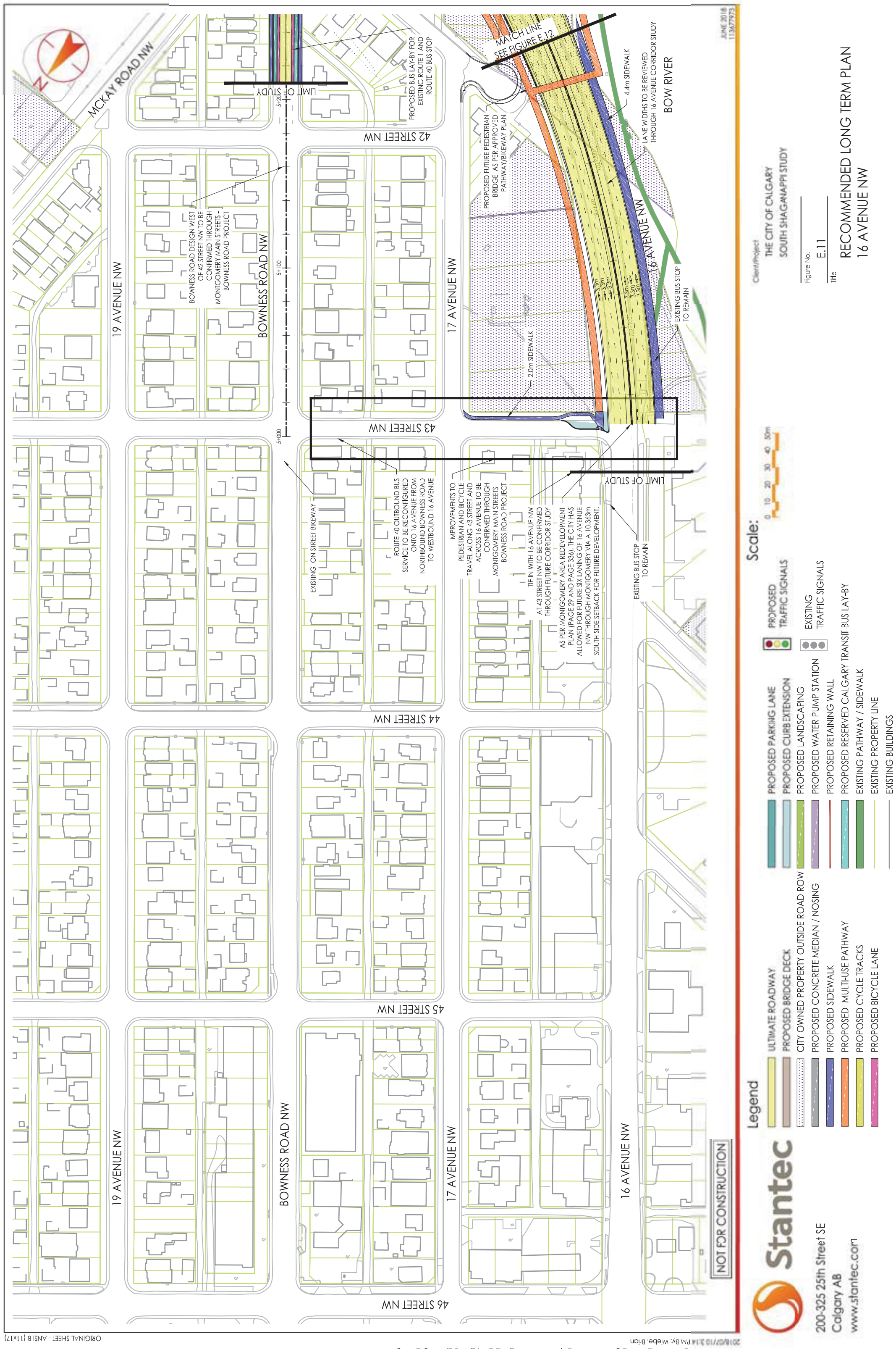
Figure E. 10: Summary of Evaluation

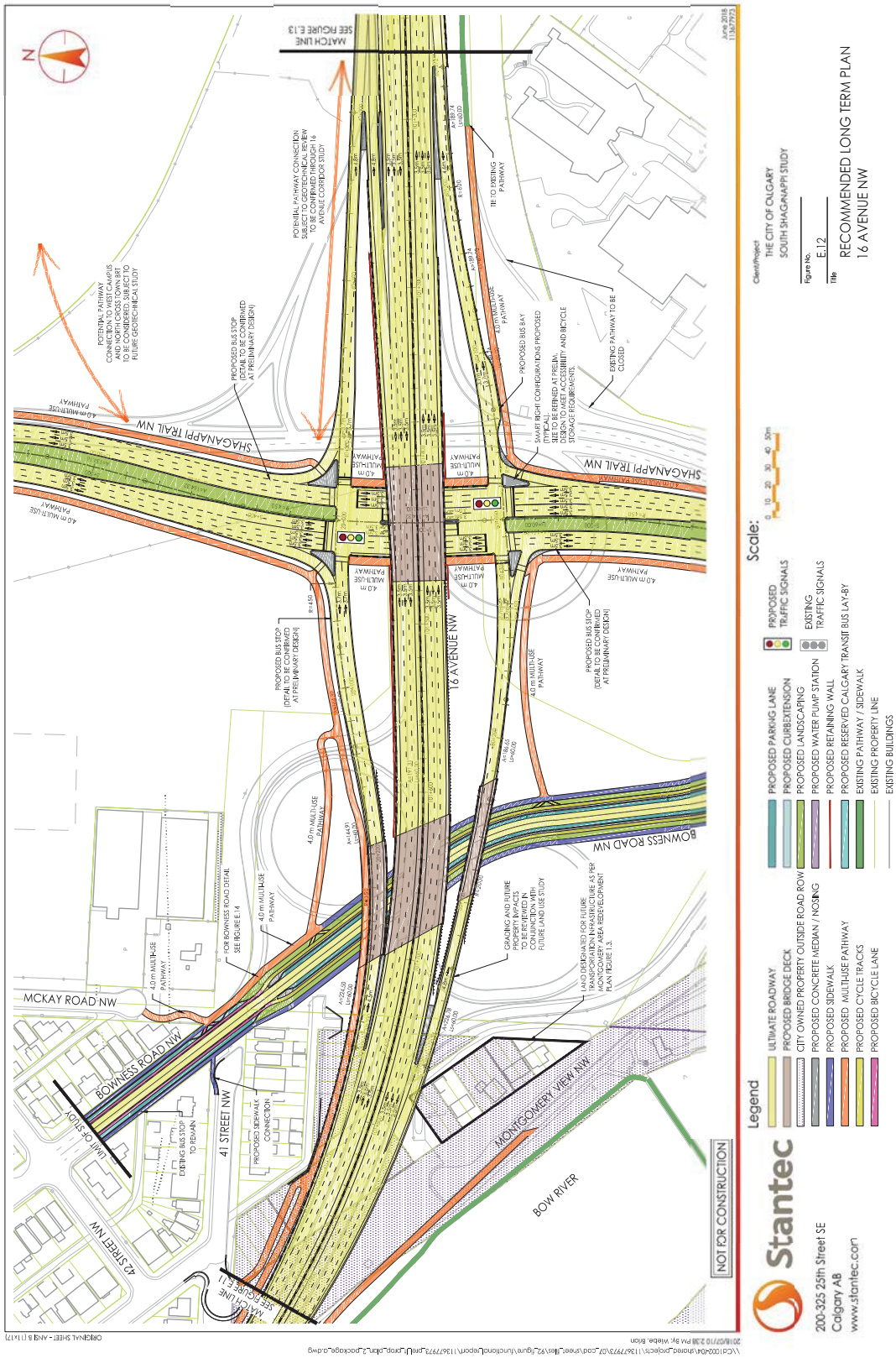
As shown, the Tight Urban Diamond performs the strongest across the seven project objectives. It performs the highest across the most number of objectives, and as a total of the evaluation scores across all objectives. Based on this evaluation, the Tight Urban Diamond is recommended as the preferred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

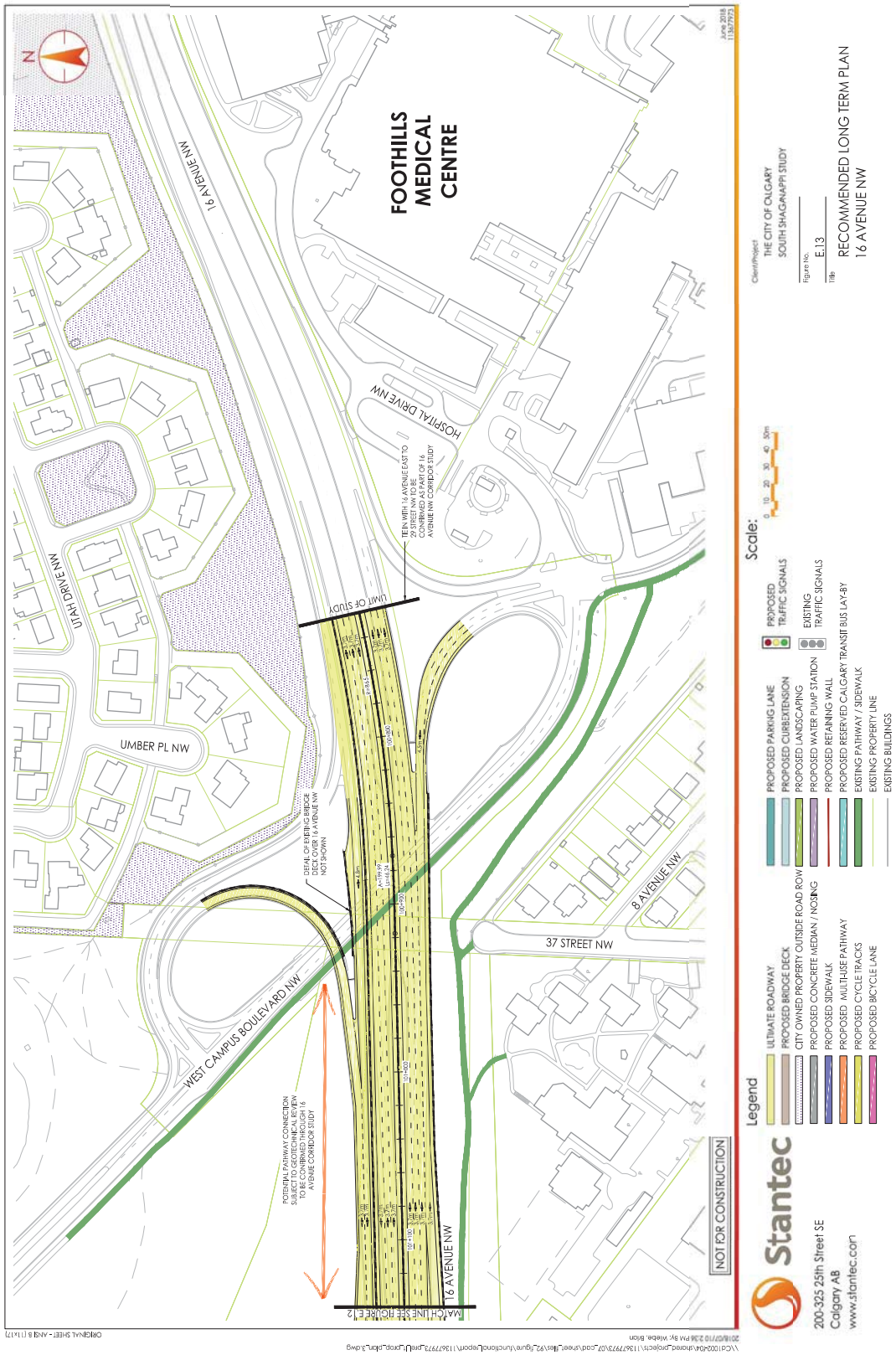
LONG-TERM RECOMMENDED CONCEPT

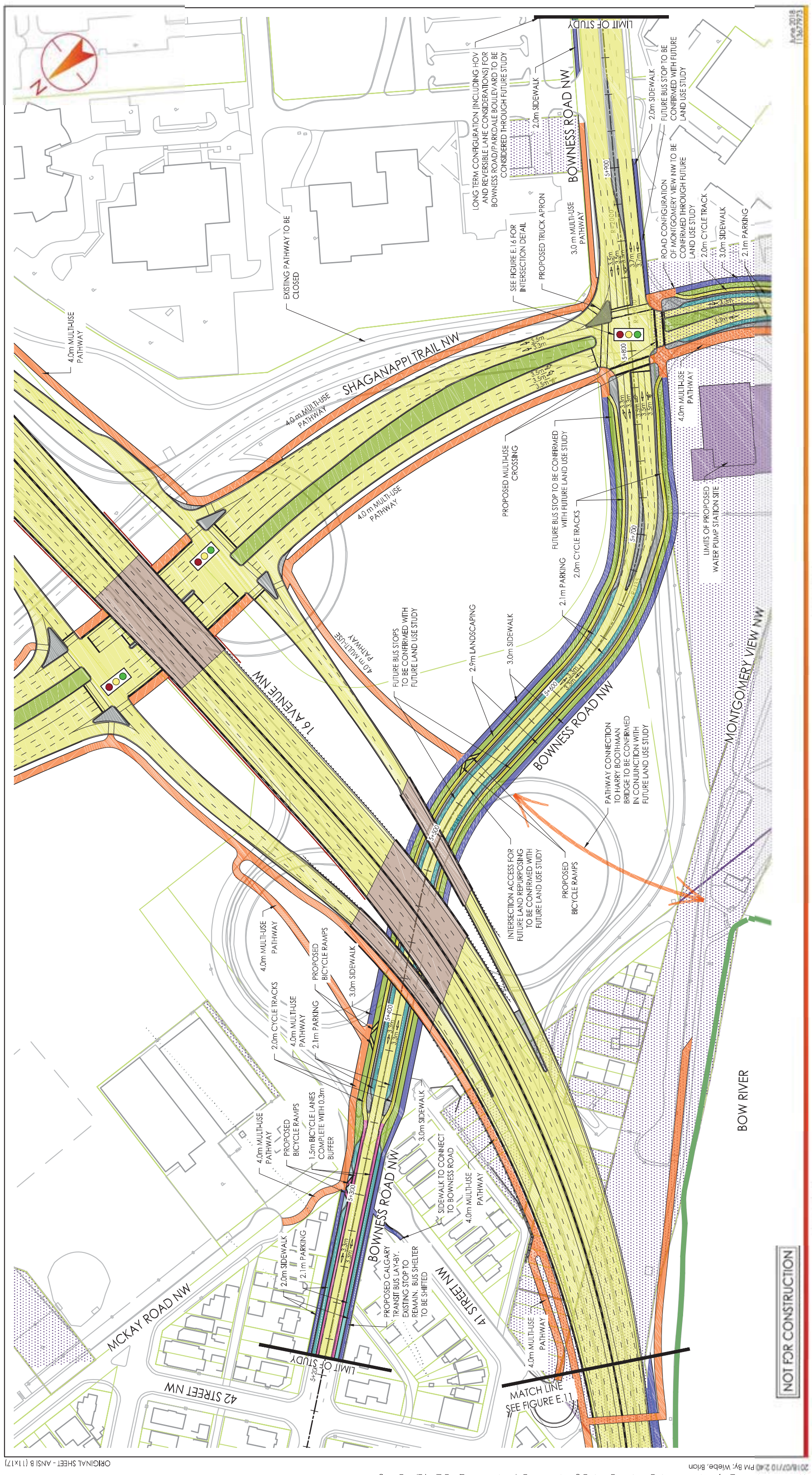
The final recommended concept is shown in **Figure E. 11** through **Figure E. 16**. The primary aspects of the recommended plan are summarized as follows:

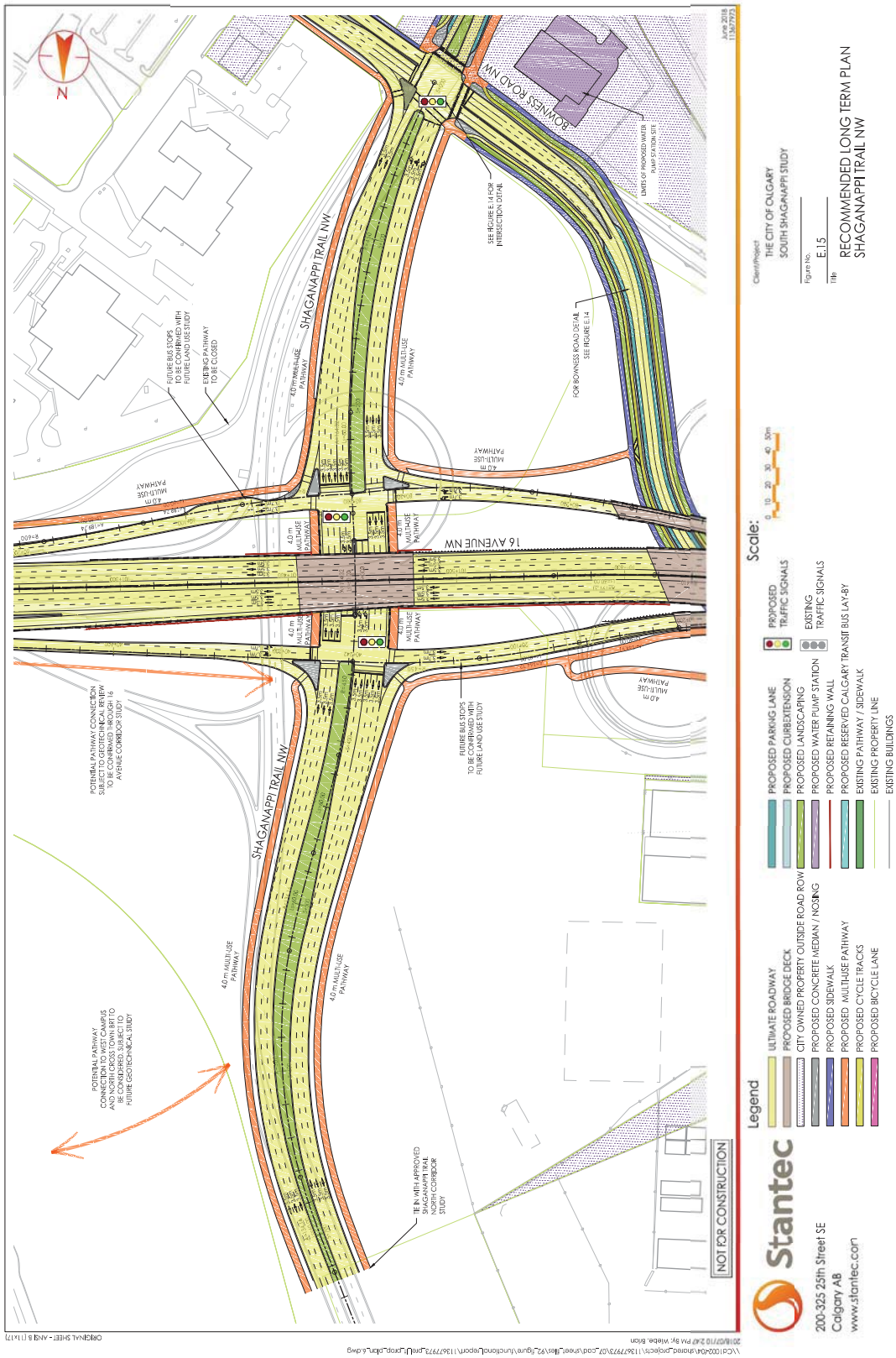
- Accommodates all turns between 16 Avenue NW and Shaganappi Trail NW at one intersection unlike the existing infrastructure with loop ramps.
- Enhances bicycle and pedestrian mobility in the area.
- Maximizes land that is no longer required for transportation.
- Encourages through traffic to stay on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

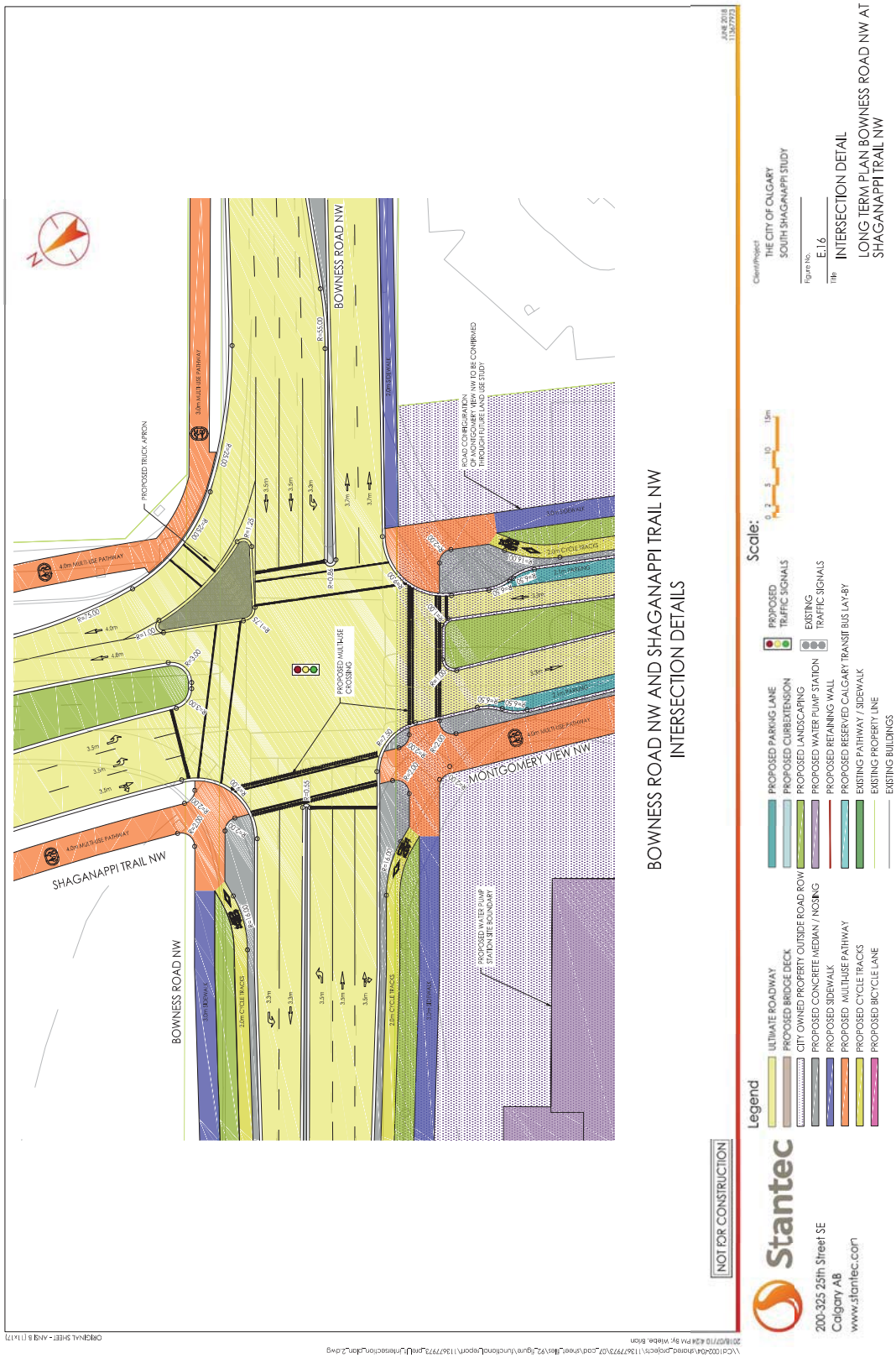

RECOMMENDED LONG TERM PLAN
16 AVENUE NW
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
E.11
Stantec
200-325 25th Street SE
Calgary AB
www.stantec.com
NOT FOR CONSTRUCTION
Legend
Scale:
BOW RIVER
MCKAY ROAD NW
19 AVENUE NW
BOWNESS ROAD NW
17 AVENUE NW
16 AVENUE NW
42 STREET NW
43 STREET NW
44 STREET NW
45 STREET NW
46 STREET NW
LIMIT OF STUDY
MATCH LINE
SEE FIGURE E.12


MATCH LINE SEE FIGURE E.13
POTENTIAL PATHWAY CONNECTION SUBJECT TO GEOTECHNICAL REVIEW TO BE CONFIRMED THROUGH 16 AVENUE CORRIDOR STUDY
POTENTIAL PATHWAY CONNECTION TO CROWCHILD AND NORTH CROSS TOWN BRT TO BE CONSIDERED, SUBJECT TO FUTURE GEOTECHNICAL STUDY
PROPOSED BUS STOP (DETAIL TO BE CONFIRMED AT PRELIMINARY DESIGN)
TIE TO EXISTING PATHWAY
PROPOSED BUS BAY
SMART RIGHT CONFIGURATIONS PROPOSED TYPICAL SEE FIGURE E.11 REFINED AT PRELIM. DESIGN TO MEET ACCESSIBILITY AND BICYCLE STORAGE REQUIREMENTS
EXISTING PATHWAY TO BE CLOSED
SHAGANAPPI TRAIL NW
16 AVENUE NW
BOWNESS ROAD NW
MCKAY ROAD NW
41 STREET NW
42 STREET NW
MONTGOMERY VIEW NW
BOW RIVER
4.0 m MULTI-USE PATHWAY
PROPOSED SIDEWALK CONNECTION
EXISTING BUS STOP TO REMAIN
LAND DESIGNATED FOR FUTURE TRANSPORTATION AS PER FIGURE 3.5 PER MONTGOMERY AREA REDEVELOPMENT PLAN FIGURE 1.3.
GRADING AND FUTURE PROPERTY IMPACTS TO BE REVIEWED IN CONJUNCTION WITH FUTURE LAND USE STUDY
FOR BOWNESS ROAD DETAIL SEE FIGURE E.14
NOT FOR CONSTRUCTION
Legend
ULTIMATE ROADWAY
PROPOSED BRIDGE DECK
CITY OWNED PROPERTY OUTSIDE ROAD ROW
PROPOSED CONCRETE MEDIAN / NOSING
PROPOSED SIDEWALK
PROPOSED MULTI-USE PATHWAY
PROPOSED CYCLE TRACKS
PROPOSED BICYCLE LANE
PROPOSED PARKING LANE
PROPOSED CURBEXTENSION
PROPOSED LANDSCAPING
PROPOSED WATER PUMP STATION
PROPOSED RETAINING WALL
PROPOSED RESERVED CALGARY TRANSIT BUS LAY-BY
EXISTING PATHWAY / SIDEWALK
EXISTING PROPERTY LINE
EXISTING BUILDINGS
PROPOSED TRAFFIC SIGNALS
EXISTING TRAFFIC SIGNALS
Scale:
0 10 20 30 40 50m
Stantec
200-325 25th Street SE
Calgary AB
www.stantec.com
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No.
E.12
Title
RECOMMENDED LONG TERM PLAN
16 AVENUE NW
JUNE 2018


FOOTHILLS MEDICAL CENTRE
16 AVENUE NW
HOSPITAL DRIVE NW
UTAH DRIVE NW
UMBER PL NW
LIMIT OF STUDY
TIE IN WITH 16 AVENUE EAST TO BE CONFIRMED AS PART OF 16 AVENUE NW CORRIDOR STUDY
DETAIL OF EXISTING BRIDGE DECK OVER 16 AVENUE NW NOT SHOWN
8 AVENUE NW
37 STREET NW
WEST CAMPUS BOULEVARD NW
POTENTIAL PATHWAY CONNECTION SUBJECT TO GEOTECHNICAL REVIEW TO BE CONFIRMED THROUGH 16 AVENUE CORRIDOR STUDY
16 AVENUE NW
MATCH LINE SEE FIGURE E.12
NOT FOR CONSTRUCTION
Legend
ULTIMATE ROADWAY
PROPOSED BRIDGE DECK
CITY OWNED PROPERTY OUTSIDE ROAD ROW
PROPOSED CONCRETE MEDIAN / NOSING
PROPOSED SIDEWALK
PROPOSED MULTI-USE PATHWAY
PROPOSED CYCLE TRACKS
PROPOSED BICYCLE LANE
PROPOSED PARKING LANE
PROPOSED CURBEXTENSION
PROPOSED LANDSCAPING
PROPOSED WATER PUMP STATION
PROPOSED RETAINING WALL
PROPOSED RESERVED CALGARY TRANSIT BUS LAY-BY
EXISTING PATHWAY / SIDEWALK
EXISTING PROPERTY LINE
EXISTING BUILDINGS
PROPOSED TRAFFIC SIGNALS
EXISTING TRAFFIC SIGNALS
Scale:
0 10 20 30 40 50m
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No.
E.13
Title
RECOMMENDED LONG TERM PLAN
16 AVENUE NW
Stantec
200-325 25th Street SE
Calgary AB
www.stantec.com
ORIGINAL SHEET - ANSI B (11X17)


Stantec
200-325 25th Street SE
Calgary AB
www.stantec.com
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No.
E.14
Title
RECOMMENDED LONG TERM PLAN
BOWNESS ROAD NW
NOT FOR CONSTRUCTION
Legend
ULTIMATE ROADWAY
PROPOSED BRIDGE DECK
CITY OWNED PROPERTY OUTSIDE ROAD ROW
PROPOSED CONCRETE MEDIAN / NOSING
PROPOSED SIDEWALK
PROPOSED MULTI-USE 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
EXISTING PATHWAY / SIDEWALK
EXISTING PROPERTY LINE
EXISTING BUILDINGS
PROPOSED TRAFFIC SIGNALS
EXISTING TRAFFIC SIGNALS
Scale:
SHAGANAPPI TRAIL NW
16 AVENUE NW
BOWNESS ROAD NW
MONTGOMERY VIEW NW
MCKAY ROAD NW
42 STREET NW
41 STREET NW
BOW RIVER
LIMIT OF STUDY
MATCH LINE SEE FIGURE E.11
ORIGINAL SHEET - ANSI B (11X17)


SHAGANAPPI TRAIL NW
16 AVENUE NW
BOWNESS ROAD NW
NOT FOR CONSTRUCTION
Legend
ULTIMATE ROADWAY
PROPOSED BRIDGE DECK
CITY OWNED PROPERTY OUTSIDE ROAD ROW
PROPOSED CONCRETE MEDIAN / NOSING
PROPOSED SIDEWALK
PROPOSED MULTI-USE PATHWAY
PROPOSED CYCLE TRACKS
PROPOSED BICYCLE LANE
PROPOSED PARKING LANE
PROPOSED CURBEXTENSION
PROPOSED LANDSCAPING
PROPOSED WATER PUMP STATION
PROPOSED RETAINING WALL
PROPOSED RESERVED CALGARY TRANSIT BUS LAY-BY
EXISTING PATHWAY / SIDEWALK
EXISTING PROPERTY LINE
EXISTING BUILDINGS
PROPOSED TRAFFIC SIGNALS
EXISTING TRAFFIC SIGNALS
Scale:
0 10 20 30 40 50m
Stantec
200-325 25th Street SE
Calgary AB
www.stantec.com
Client/Project
THE CITY OF CALGARY
SOUTH SHAGANAPPI STUDY
Figure No.
E.15
Title
RECOMMENDED LONG TERM PLAN
SHAGANAPPI TRAIL NW
June 2018


BOWNESS ROAD NW AND SHAGANAPPI TRAIL NW
INTERSECTION DETAILS
LONG TERM PLAN BOWNESS ROAD NW AT SHAGANAPPI TRAIL NW
INTERSECTION DETAIL
Figure No. E.16
Client/Project THE CITY OF CALGARY SOUTH SHAGANAPPI STUDY
Scale:
NOT FOR CONSTRUCTION
Legend
ULTIMATE ROADWAY
PROPOSED BRIDGE DECK
CITY OWNED PROPERTY OUTSIDE ROAD ROW
PROPOSED CONCRETE MEDIAN / NOSING
PROPOSED SIDEWALK
PROPOSED MULTI-USE PATHWAY
PROPOSED CYCLE TRACKS
PROPOSED BICYCLE LANE
PROPOSED PARKING LANE
PROPOSED CURBEXTENSION
PROPOSED LANDSCAPING
PROPOSED WATER PUMP STATION
PROPOSED RETAINING WALL
PROPOSED RESERVED CALGARY TRANSIT BUS LAY-BY
EXISTING PATHWAY / SIDEWALK
EXISTING PROPERTY LINE
EXISTING BUILDINGS
PROPOSED TRAFFIC SIGNALS
EXISTING TRAFFIC SIGNALS
Stantec
200-325 25th Street SE
Calgary AB
www.stantec.com
BOWNESS ROAD NW
SHAGANAPPI TRAIL NW
MONTGOMERY VIEW NW
PROPOSED TRUCK APRON
PROPOSED MULTI-USE CROSSING
PROPOSED WATER PUMP STATION BOUNDARY
ROAD CONFIGURATION FOR BOWNESS ROAD NW TO BE CONFIRMED THROUGH FUTURE LAND USE STUDY
4.0m MULTI-USE PATHWAY
3.0m CYCLE TRACKS
3.5m SIDEWALK

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.