

Victoria Avenue Bikeway, Pedestrian, and Traffic Safety Improvement Project

ISSUE

To meet the needs of the Growth Plan, several modal shift targets were established in the Growth Plan and the Active Transportation Plan to mitigate future traffic congestion and infrastructure needs:

- Transit – increase from 4% to 8% of all trips and from 10% to 25% for the peak period to the Downtown and University areas.
- Cycling – increase from 4% to 8% for all trips and from 2% to 4% of commute trips.
- Walking – increase from 8% to 16% of all trips and from 5.5% to 11% of commute trips.

This transportation project identifies transportation improvements required on Victoria Avenue from 8th Street East to Taylor Street East to position the City of Saskatoon to meet the modal shift targets in the Growth Plan and Active Transportation Plan.

BACKGROUND

History

At its Regular Business Meeting held on June 27, 2016, City Council approved the Active Transportation Plan (AT Plan). As part of the AT Plan, the City committed to the following action item under the theme of connectivity: “Develop a complete and connected bicycle network for all ages and abilities.”

To work towards achieving this action item, completion of conceptual designs was identified for active transportation facilities on five corridors. The Administration developed the conceptual design that is being submitted with this report for one project corridor:

- Victoria Avenue from 8th Street East to Taylor Street East.

Urban Systems Ltd. was retained to develop conceptual designs for the following corridors:

- 3rd Avenue North from 25th Street East to 2nd Avenue North (in progress);
- 29th Street West or 31st Street West from the Circle Drive South underpasses to Idylwyld Drive North (completed for 31st Street West route and approved in principle);
- 14th Street East from Saskatchewan Crescent East to Cumberland Avenue South (completed and approved in principle); and
- Dudley Street from Dawes Avenue to Spadina Crescent West (completed and approved in principle).

The AT Plan identified Victoria Avenue from the Traffic Bridge to Adelaide Street East as a future All Ages and Abilities (AAA) cycling route. Additional details on why Victoria Avenue was selected as an AAA cycling route can be found in Appendix 1.

At its Regular Business Meeting held on March 25, 2019, City Council received a report regarding the Active Transportation Implementation Plan and resolved, in part:

- “1. That the Active Transportation Implementation Plan be endorsed with the exception of the elements pertaining to the Downtown AAA Network, which is the subject of a future report to City Council; and”

The implementation strategy included five key components:

- Integration with standard practice;
- Leverage other projects;
- Shelf-ready projects;
- Leverage all funding opportunities; and
- Measure and report progress.

At its Regular Business Meeting held on June 29, 2020, City Council received the Saskatoon Transportation Strategy – Infrastructure Plan, and resolved, in part;

- “1. That the list of prioritized transportation projects be approved in principle;
2. That the information within the report of the General Manager, Transportation and Construction dated June 1, 2020, be included in the next multi-year budget cycle; and”

The Neighbourhood Bikeway, Pedestrian and Traffic Safety Improvement projects, including Victoria Avenue, were identified on the list of prioritized transportation infrastructure projects.

Current Status

Traffic volumes and speeds along Victoria Avenue are above 1,500 vehicles per day and above 30 km/h. At these volumes and speeds, physical separation between cyclists and vehicles is required for a cycling facility to be safe for users of all ages and abilities.

To improve active transportation along Victoria Avenue from 8th Street East to Taylor Street East, a protected cycling facility (e.g. bike lanes or cycle tracks) are recommended to physically separate cyclists from vehicles and pedestrians using a variety of treatment options. The technical report for the Victoria Avenue corridor can be found in Appendix 2.

Public Engagement

An in-person open house was held on March 11, 2020 for the Victoria Avenue corridor to identify challenges and opportunities for the provision of a cycling facility on this corridor. Concepts were developed based on the feedback received at the open house and presented to the public at an online meeting held on December 9, 2020. An online survey was posted to the projects engage page, and residents were also able to submit

comments directly via email and phone call. The public engagement undertakings and summary are included in the technical report in the appended Neighbourhood Bikeways Project – Victoria Avenue Corridor.

OPTIONS

To improve active transportation along Victoria Avenue from 8th Street East to Taylor Street East, five options were developed. A “Do Nothing” option that does not provide a AAA cycling facility on Victoria Avenue has been included for comparison. A brief summary of the options and some of the benefits are shown below. Details of the options can be found in Appendix 3.

	Options					
	1 - Bidirectional Bike Lane (West Side)	2 - Protected Street-Level Bike Lanes without Parking	3 - Raised Bike Lanes without Parking	4 - Protected Street-Level Bike Lanes with Parking	5 - Raised Bike Lanes with Parking	6 - Do Nothing
Provides AAA Facility	X	X	X	X	X	
Improves Cyclist Safety	X	X	X	X	X	
Minimizes Cyclist Delay		X	X	X	X	
Maximizes for Cyclist Comfort	X	X		X		
Maintains Some On-Street Parking	X			X	X	X
Maintains Median Trees	X	X	X			X
Capital Cost	\$758,234	\$472,257	\$5,555,039	\$6,297,570	\$7,426,880	\$ 49,500

Traffic Calming at Victoria Avenue and 6th Street

The Buena Vista Neighbourhood Traffic Review (NTR), completed in 2017, recommended that curb extensions be installed at Victoria Avenue and 6th Street to improve pedestrian safety for those crossing Victoria Avenue. To meet the Buena Vista NTR recommendations for Victoria Avenue, Options 1 to 5 include a raised crosswalk at Victoria Avenue and 6th Street East. Installing bike lanes on Victoria Avenue would narrow the roadway width and reduce the need for additional horizontal deflections such as curb extensions.

Option 6 does not include the installation of a cycling facility along Victoria Avenue, and as a result, horizontal traffic calming could be provided along Victoria Avenue. For Option 6, the temporary curb extension would be installed permanently as part of the NTR permanent implementation once funding is approved.

RECOMMENDATION

That the Standing Policy Committee on Transportation recommend to City Council :
 That Option 4 - Protected Street-Level Bike Lanes with Parking along Victoria Avenue between 8th Street East and Taylor Street East be approved in principle.

RATIONALE

All the options presented are technically feasible. The Administration is supportive of any of the options that provide an AAA facility on Victoria Avenue and further the goal of a complete and connected bicycle network for all ages and abilities. The detailed evaluation table can be found in the technical report in the appended Neighbourhood Bikeways Project – Victoria Avenue Corridor.

Option 4 is recommended as it strikes a balance between the transportation benefits and the impacts to parking and vegetation. The options were evaluated based on the following:

- Transportation Network;
- Cyclist Accommodation;
- Safety;
- Traffic Operation;
- Parking Impacts; and
- Vegetation Impacts.

The recommended option is included in Appendix 4.

FINANCIAL IMPLICATIONS

The total estimated costs for the six options are as follows:

	Alternatives					
	Option 1 Bidirectional Bike Lane (West Side)	Option 2 Protected Street-Level Bike Lanes without Parking	Option 3 Raised Bike Lanes without Parking	Option 4 Protected Street-Level Bike Lanes with Parking	Option 5 Raised Bike Lanes with Parking	Option 6 Do Nothing
Signage and Pavement Markings	\$110,214	\$ 73,515	\$ 73,515	\$ 73,515	\$ 73,515	-
Traffic Signal Upgrades	\$ 32,500	\$ 32,500	\$ 32,500	\$ 32,500	\$ 32,500	-
Protected Cycling Facility	\$192,649	\$295,151	\$4,915,862	\$ 474,271	\$1,868,499	-
Median Work	\$325,783	-	-	\$5,116,620	\$4,749,038	-
Traffic Calming	\$ 28,158	\$ 28,158	\$ 28,158	\$ 28,158	\$ 28,158	\$ 45,000
Engineering (10%)	\$ 68,930	\$ 42,932	\$ 505,004	\$ 572,506	\$ 675,171	\$ 4,500
Total	\$758,234	\$472,256	\$5,555,039	\$6,297,570	\$7,426,881	\$ 49,500

There is adequate funding in the 2021 budget for Capital Project #1504 - Neighbourhood Traffic Review Permanent Installations for the installation of the permanent curb extension for Option 6.

Funding of detailed design for the AAA cycling facility has not been approved in the 2021 budget. Construction is not funded.

ADDITIONAL IMPLICATIONS/CONSIDERATIONS

There are no privacy, legal, or social implications identified with this report. Supporting Active Transportation is a key initiative in the Low Emissions Community Plan. This project will support the lowering of harmful emissions by providing a safe alternate mode of transportation. The recommended Option 4 does require removal of vegetation in the median which would be done in consultation with Urban Forestry. On-street parking implications for the various options are detailed in the appended Victoria Avenue Bikeway Options.

NEXT STEPS

1. Detailed design and cost estimate refinement for the selected option will be included in the next Business Plan and Budget Deliberations for consideration.
2. Include the project on the prioritized transportation infrastructure list for the following budget cycle.
3. Apply for alternate sources of funding if applicable and available.
4. Once funding is secured and approved by City Council, construction will proceed.

COMMUNICATION ACTIVITIES

1. An email update will be sent to the project subscriber list informing them of the decision.
2. Construction notices will be circulated to adjacent property owners prior to construction.

APPENDICES

1. Route Analysis for an All Ages and Abilities Cycling Route in Buena Vista
2. Neighbourhood Bikeways Project – Victoria Avenue Corridor
3. Victoria Avenue Bikeway Options
4. Victoria Avenue Bikeway Recommended Conceptual Design

Report Approval

Written by: Carly Grassing, Transportation Engineer, Transportation
Reviewed by: Nathalie Baudais, Senior Transportation Engineer, Transportation
David LeBoutillier, Engineering Manager, Transportation
Jay Magus, Director of Transportation
Approved by: Terry Schmidt, General Manager, Transportation and Construction

Route Analysis for an All Ages and Abilities Cycling Route in Buena Vista

Saskatoon's Active Transportation Plan (AT Plan) has identified Victoria Avenue as an all ages and abilities (AAA) cycling route from the Traffic Bridge to Adelaide Street East. Through the engagement process for the Bikeway, Pedestrian, and Traffic Improvement Project along Victoria Avenue, the Administration received questions from the public on why Victoria Avenue was selected as the preferred AAA route instead of Melrose Avenue or Eastlake Avenue. The following discussion provides an overview of the cycling network characteristics that were used to select the routes identified within the AT Plan. Following the discussion of principles, a route analysis comparison between Victoria Avenue, Melrose Avenue, and Eastlake Avenue is provided.

Active Transportation Plan and Mode Share Targets

One of the goals and an essential outcome of the AT Plan is to develop and implement a complete and connected cycling network for all ages and abilities in Saskatoon. Building this connected cycling network of AAA facilities is critical to meeting the cycling mode share targets of 8% of all trips and 4% of commute trips set through the Growth Plan and Active Transportation Plan.

Cycling Network Characteristics

A cycling network should be visible, intuitive, and provide connections between destinations and neighbourhoods. Just like with any transportation network, major network gaps, lack of appropriate intersection treatments, and route deflections in a cycling network can discourage people from choosing cycling as their mode of transportation. Well-designed cycling networks are direct and avoid weaving through neighbourhoods when possible. Since bikes are human-powered and riders are physically exposed to the elements even small detours in the cycling network can discourage people from choosing to ride their bike.

When selecting routes for Saskatoon's cycling network the following was considered:

- A network of connected all ages and abilities facilities that provides an interconnecting system of bicycle facilities that is comfortable and attractive for all users, ensuring that the highest standards of safety and comfort are provided throughout the network.
- A 'Hub' and 'Spoke' network, where key corridors form the 'spokes' of the network, leading to and from the 'hub' of network facilities Downtown and linking neighbourhoods to major destinations.
- A minimum grid of cycling facilities so that residents are within 400 metres of a cycling facility in high demand areas, and within 800 metres of a cycling facility elsewhere. Research, literature, and experience suggests that 400 metres is the ideal distance people are willing to travel to reach a designated bicycle route.

























- Direct connections to key destinations on a complete network to ensure cycling is a viable transportation option.
- Enhancing existing facilities and integrating new facilities with existing facilities to improve the connectivity of the network.

Intersection Characteristics





Intersection characteristics are a critical element when creating a cycling network. People travelling on bikes are vulnerable road users and may find it difficult to cross busy intersections if appropriate design treatments are not in place. To be considered complete, a cycling network needs to include intersection design treatments that allow people riding bikes to feel safe and comfortable when crossing busy intersections. Considerations for intersection characteristics include intersection control treatment, number of vehicle travel lanes that need to be crossed, and ability to provide cyclist detection.

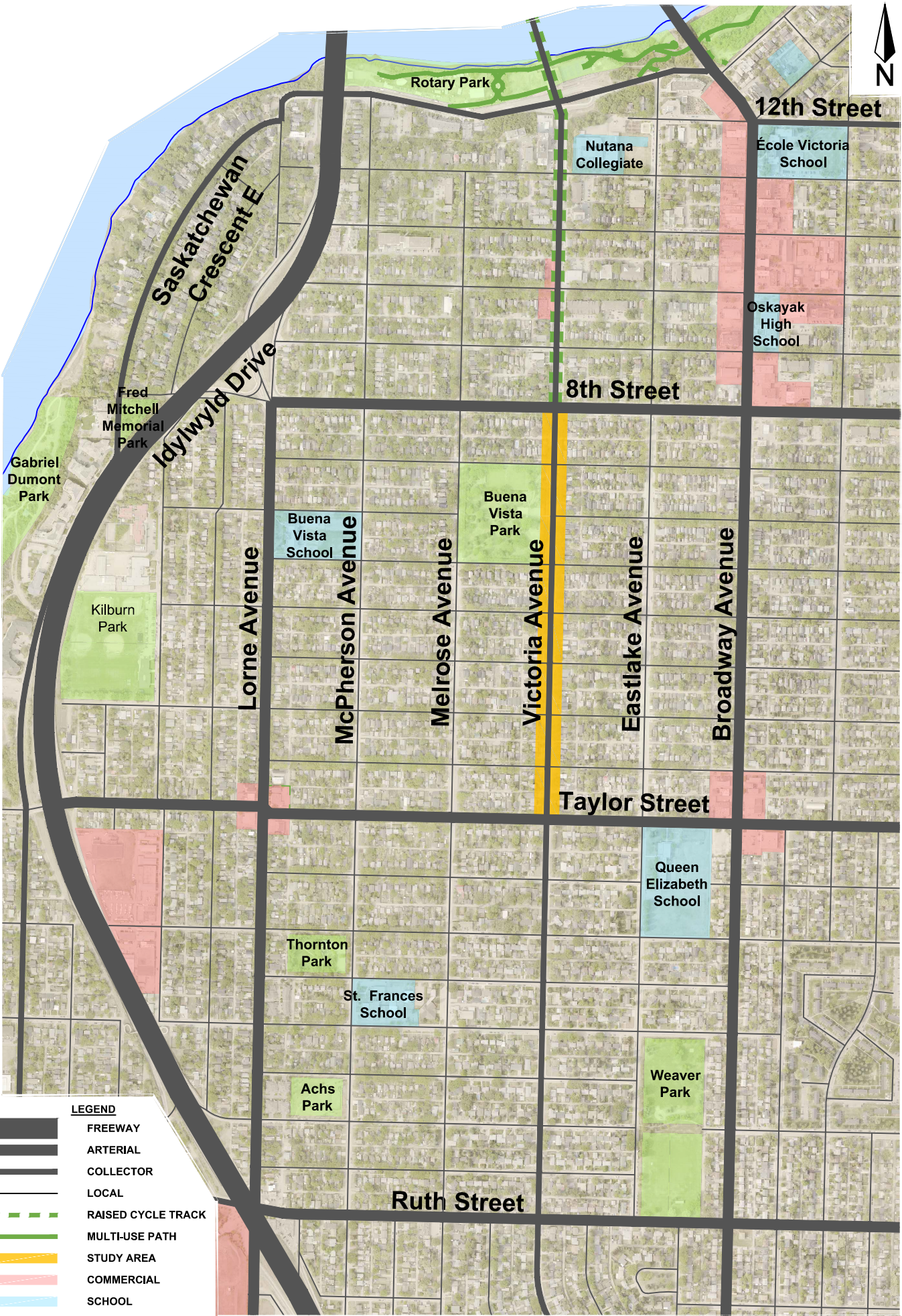
Route Analysis

The table on the following page provides a route analysis comparison between Victoria Avenue, Melrose Avenue, and Eastlake Avenue using the cycling network characteristics and intersection characteristics.




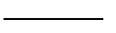





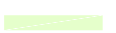
Criteria	Measures	Route Alternatives			
		Do Nothing (Victoria Ave)	Victoria Avenue	Melrose Avenue	Eastlake Avenue
Cycling Network Characteristics	Connection to existing cycling facilities	AAA cycling route does not continue south of 8 th Street East. Cyclists can continue to share lane with traffic 	Direct connection to raised cycle track along Victoria Avenue 	Does not provide a direct connection to an existing cycling facility 	Does not provide a direct connection to an existing cycling facility, connects to Meewasin trail at Saskatchewan Crescent 
	Connections to the north	An AAA route between 8 th Street East and Taylor Street East with a direct connection to the north is not provided 	Direct connection to Traffic Bridge, and proposed 3 rd Avenue AAA bike lanes, and beyond 	Does not provide a direct connection to a river crossing, Melrose Avenue ends at 11 th Street East 	Does not provide a direct connection to a river crossing, terminates at Saskatchewan Crescent East 
	Connections to the south	Victoria Avenue is identified as a future AAA cycling route South of Taylor Street East. Not providing an AAA facility between 8 th Street East and Taylor Street East creates a network gap 	Victoria Avenue becomes Wilson Crescent and continues to the south 	Melrose Avenue becomes Glasgow Street and continues to the south 	Eastlake Avenue ends at Ruth Street and does not continue to the south 
	Access to destinations	Provides access to residential land uses and a non-AAA facility to Buena Vista Park 	Direct access to residential land uses and Buena Vista Park 	Direct access to residential land uses and Buena Vista Park 	Direct access to residential land uses 
Intersection Characteristics	8 th Street Intersection	No AAA route directing cyclists across 8 th Street East. Cyclists can still use the traffic signal at Victoria Avenue and 8 th Street East without cyclist detection 	Existing traffic signal allows cyclists to cross this intersection, cyclist detection will be provided with AAA design option 	Median along 8 th Street East does not allow cyclists to cross this intersection 	Two-way stop on Eastlake Avenue, cyclists must cross six lanes of traffic, provision of future cyclist detection prevented due to proximity of existing traffic signals at Victoria Avenue and Broadway Avenue 
	Taylor Street Intersection	No AAA route directing cyclists across Taylor Street. Cyclists can still use the traffic signal at Victoria Avenue and Taylor Street East without cyclist detection 	Existing traffic signal allows cyclists to cross this intersection, cyclist detection will be provided with AAA design option 	Two-way stop on Melrose Avenue, cyclists must cross two lanes of traffic 	Two-way stop on Eastlake Avenue, cyclists must cross two lanes of traffic 
Total Score		1.5	6	2.75	2.5

LEGEND

Poor	Fair	Good	Excellent
			



LEGEND

-  FREEWAY
-  ARTERIAL
-  COLLECTOR
-  LOCAL
-  RAISED CYCLE TRACK
-  MULTI-USE PATH
-  STUDY AREA
-  COMMERCIAL
-  SCHOOL
-  PARKS



Neighbourhood Bikeways Project
Victoria Avenue Corridor

Contents

- 1.0 Introduction..... 1
 - 1.1 Project Goals..... 2
 - 1.2 Study Process 2
 - 1.3 Report Overview 2
- 2.0 Corridor Review..... 3
 - 2.1 Route Context 3
 - 2.1.1 Route Description and Neighbourhood Context 3
 - 2.1.2 Adjacent Land Uses 3
 - 2.1.3 Nearby Infrastructure and Destinations 5
 - 2.2 Background Information 5
 - 2.2.1 Active Transportation Plan..... 5
 - 2.2.2 Local Area Plans 5
 - 2.2.3 Neighbourhood Traffic Review 5
 - 2.2.4 Saskatoon Cycling Guide 6
 - 2.3 Road Network Characteristics..... 6
 - 2.3.1 Roadway Cross-Section 6
 - 2.3.2 Road Network Classification and Intersection Controls 7
 - 2.3.3 Pavement Condition 8
 - 2.3.4 Traffic Volumes and Speeds..... 9
 - 2.3.5 Parking 9
 - 2.4 Pedestrian Facilities 10
 - 2.5 Bicycle Facilities..... 10
 - 2.6 Transit Service and Facilities 11
 - 2.7 Collisions..... 11
 - 2.8 Multi-Modal Level of Service 12
- 3.0 Phase 1 Neighbourhood Bikeway Engagement Summary 14
 - 3.1 Engagement Objectives 14
 - 3.2 Engagement Opportunities 14
 - 3.3 Summary of Public Input 16
 - 3.4 Summary of Opportunities and Challenges..... 17
- 4.0 Design 17

4.1	Design Alternatives	17
4.1.1	Option 1 – Bidirectional Bike Lane (West Side)	18
4.1.2	Option 2 – Protected Street-Level Bike Lanes without Parking	18
4.1.3	Option 3 – Raised Bike Lanes without Parking	19
4.1.4	Option 4 – Protected Street-Level Bike Lanes with Parking	20
4.1.5	Option 5 – Raised Bike Lanes with Parking	21
4.1.6	Option 6 – Do Nothing	23
4.2	Traffic Calming Measures at 6 th Street East.....	23
4.2.1	Raised Crosswalk.....	23
4.2.2	Curb Extension	23
4.3	Cost Estimates	24
4.4	Design Evaluation	24
5.0	Phase 2 Engagement Summary.....	28
5.1	Engagement Objectives	28
5.2	Engagement Opportunities	29
5.3	Summary of Public Input	29
5.3.1	Online Meeting	29
5.3.2	Online Survey	29
5.3.3	Emails and Phone Calls.....	31
6.0	Closing	32
	Appendix A: Multi-Modal Level of Service	33
	Appendix B: Engagement Summary	36
	Appendix C: Victoria Avenue Recommended Design	37

Table of Figures

Figure 1:	Victoria Avenue - Adjacent Land Uses	4
Figure 2:	Victoria Avenue - Existing Cross-Section at 8 th Street East	6
Figure 3:	Victoria Avenue - Existing Cross-Section between 7 th Street East and 6 th Street East	6
Figure 4:	Victoria Avenue - Existing Cross-Section between 6 th Street East and Taylor Street East	7
Figure 5:	Victoria Avenue - Roadway Classification and Intersection Controls	8
Figure 6:	Share the Road - Side by Side.....	11
Figure 7:	Victoria Avenue - Bicycle Level of Service AM Peak.....	13

Figure 8: Victoria Avenue - Bicycle Level of Service PM Peak.....	13
Figure 9: Victoria Avenue - Pedestrian Level of Service	13
Figure 10: Victoria Avenue - Open House Feedback Summary	16
Figure 11: Victoria Avenue - Option 1 - Bidirectional Bike Lane (West Side)	18
Figure 12: Victoria Avenue - Option 2 - Protected Street-Level Bike Lanes without Parking.....	19
Figure 13: Victoria Avenue - Option 3 - Raised Bike Lanes without Parking	19
Figure 14: Victoria Avenue - Option 4 - Protected Street-Level Bike Lanes with Parking (8 th Street East to 7 th Street East)	20
Figure 15: Victoria Avenue - Option 4 - Protected Street-Level Bike Lanes with Parking (7 th Street East to Taylor Street East).....	20
Figure 16: Victoria Avenue - Option 5 Raised Bike Lanes with Parking (8 th Street East to Taylor Street East)	21
Figure 17: Victoria Avenue - Option 5 Raised Bike Lanes with Parking (7 th Street East to Taylor Street East)	21
Figure 18: Victoria Avenue - Bikeway Design Options	22
Figure 19: Victoria Avenue - Raised Crosswalk at 6 th Street East.....	23

Table of Tables

Table 1: Victoria Avenue - Average Annual Daily Traffic and 85 th Percentile Speeds	9
Table 2: Victoria Avenue - Parking Utilization	10
Table 3: Victoria Avenue - Collision History	12
Table 4: Victoria Avenue - Overall MMLOS Results.....	12
Table 5: Engagement Round 1 Attendance	15
Table 6: Victoria Avenue: Cost Estimates	24
Table 7: Evaluation Table Scores	25
Table 8: Victoria Avenue - Design Options Evaluation Table	25
Table 9: Level of Support for Victoria Avenue Design Options.....	30
Table 10: Favourite Design Option for Victoria Avenue.....	30

1.0 Introduction

The City of Saskatoon (City) is committed to promoting active transportation and providing transportation choices that are safe and comfortable for people of all ages and abilities year-round. As part of the City's 2016 Active Transportation Plan (AT Plan), the City has committed to the following action item under the theme of connectivity: "Develop a complete and connected bicycle network for all ages and abilities."

To help work towards achieving this action item, the City undertook the Neighbourhood Bikeways Project to develop conceptual designs for active transportation facilities on the following five corridors:

- 3rd Avenue North from 25th Street East to 2nd Avenue North;
- 29th Street West or 31st Street West from the Circle Drive underpasses to Idylwyld Drive North;
- 14th Street East from Saskatchewan Crescent East to Cumberland Avenue South;
- Dudley Street from Dawes Avenue to Spadina Crescent West; and
- Victoria Avenue from 8th Street East to Taylor Street East.

These corridors were selected for review because they provide important connections to existing or future walking and cycling facilities or were identified in the AT Plan. Further, these corridors align with the opportunity to coordinate infrastructure improvements with other work scheduled in the next one to three years.

While these corridors vary in context, location and length, they all share the possibility of encouraging cycling by improving the connectivity between residential areas, the established cycling routes on the Meewasin Valley Trail network, and destination areas in the vicinity of Idylwyld Drive and the Downtown. The corridors are intended to be designed as all ages and abilities (AAA) cycling facilities to ensure they are comfortable for all users, regardless of age or ability.

The Neighbourhood Bikeways Project will help identify measures to provide more travel choices and improve safety, accessibility, and connectivity for each of these corridors, including the evaluation and design of walking and cycling facility improvements for each corridor.

This report summarizes the existing conditions and recommended concept for the Victoria Avenue corridor.

1.1 Project Goals

1. To improve pedestrian and cycling connections between residential areas along the proposed routes and their neighbouring areas;
2. To improve safety and mobility for all road users by making the corridors more bicycle and pedestrian friendly;
3. To connect to existing pathways, and future cycling corridors effectively; and
4. To coordinate improvements with upcoming infrastructure projects scheduled along the proposed corridors.

1.2 Study Process

The study was developed through five phases, with two opportunities for public input. Between February and December 2020:

- **February 2020** - Existing Conditions Review
- **March 2020** - Phase 1 Open Houses – Public Concerns and Considerations
- **Spring 2020** - Develop Corridor Designs
- **December 2020** - Phase 2 Meeting – Victoria Avenue
- **Spring 2021** - Final Report – Victoria Avenue

1.3 Report Overview

This report summarizes the overall study process and recommendations for the Victoria Avenue corridor and includes the following sections:

- **Section 1 – Introduction** provides an overview of the project, including project goals, study process, and report overview.
- **Section 2 – Corridor Review** summarizes existing conditions along the corridor, including the route context, policy context, road network characteristics, pedestrian facilities, bicycle facilities, transit services and facilities, collisions, and the results of a Multi-Modal Level of Service (MMLOS) analysis.
- **Section 3 – Phase 1 Engagement Summary** provides an overview of the Phase 1 Engagement process and input received.
- **Section 4 – Design** summarizes the key features of the alternative conceptual designs.
- **Section 5 – Phase 2 Engagement Summary** provides an overview of the Phase 2 Engagement process and input received.
- **Section 6 – Closing and Next Steps** provides a summary of the report and next steps for the City to advance this project to detailed design and construction.

2.0 Corridor Review

This section summarizes existing conditions for the Victoria Avenue corridor, including the following characteristics:

- Route context, including a general description of the corridor and neighbourhood context, adjacent land uses, connections to existing cycling routes, and nearby infrastructure and destinations.
- Policy context, including background information from the AT Plan as well as applicable Local Area Plans (LAPs), Neighbourhood Traffic Reviews (NTRs), and the Saskatoon Cycling Guide.
- Road network characteristics, including the existing roadway cross-section, road network classification, traffic volumes and speeds, and parking supply and utilization.
- Pedestrian facilities, including existing sidewalks, crossing treatments, and other pedestrian amenities such as curb ramps.
- Bicycle facilities, including existing on-street and off-street bicycle routes.
- Transit services and facilities, including existing bus routes and bus stops.
- Collisions, including a review of collision data between 2015 and 2019.

2.1 Route Context

2.1.1 Route Description and Neighbourhood Context

The Victoria Avenue corridor extends eight blocks for approximately 0.8 kilometers between 8th Street East in the north and Taylor Street East in the south. The Victoria Avenue corridor passes through the neighbourhood of Buena Vista. The north end of the corridor links to the existing raised cycle track along Victoria Avenue between 8th Street East and the Traffic Bridge, further expanding the active transportation network. The north end of the corridor is near the Broadway shopping district, and connects to the Meewasin Valley Trails, and the Downtown. The south end of the corridor links to the Queen Elizabeth neighbourhood.

2.1.2 Adjacent Land Uses

The Victoria Avenue corridor passes through the neighbourhood of Buena Vista. The corridor largely features single family residential development and Buena Vista Park. Figure 1 shows the adjacent land uses to the Victoria Avenue corridor.



Figure 1: Victoria Avenue - Adjacent Land Uses

2.1.3 Nearby Infrastructure and Destinations

The northern end of the study corridor connects to the AAA raised cycle track along Victoria Avenue which features single family residential, higher density residential, and commercial land uses. Victoria Avenue also connects to the Traffic Bridge to provide easy access to the Downtown and the Meewasin Valley Trail system which runs along the South Saskatchewan river valley. The northern section of the corridor is also near the Broadway Avenue shopping district. The southern end of the corridor connects to single family residential housing in the Queen Elizabeth neighbourhood.

2.2 Background Information

2.2.1 Active Transportation Plan

The AT Plan contains the following information relevant to the Victoria Avenue corridor:

- The Victoria Avenue corridor was identified as a proposed AAA facility between the Traffic Bridge and Adelaide Street.
- The AT Plan does not identify any required improvements to the sidewalk network.
- The route is labeled as high priority for investments in cycling infrastructure.

As part of the AT Plan, a city-wide Level of Traffic Stress (LTS) analysis was conducted. LTS is a Geographic Information System (GIS) analysis that assesses the appropriateness and comfort of road infrastructure based on a cyclist's level of stress. LTS classifies road segments based on four levels of traffic stress. LTS 1 is the most comfortable where children can play, LTS 2 is tolerated by the adult population, LTS 3 is tolerated by cyclists who are 'enthused and confident' and LTS 4 is tolerated only by those in the 'strong and fearless' cyclist category.

The AT Plan identified the Victoria Avenue corridor as having a Level of Traffic Stress (LTS) of 4 between 8th Street East and Taylor Street East. This value indicates that the route is tolerated only by those in the "strong and fearless" cyclist category.

2.2.2 Local Area Plans

A Local Area Plan has not been completed for the Buena Vista Neighbourhood.

2.2.3 Neighbourhood Traffic Review

During the Buena Vista NTR, residents expressed concerns with pedestrian safety at the intersection of Victoria Avenue and 6th Street East. To address these concerns, the NTR recommended to:

- Install a curb extension at Victoria Avenue and 6th Street East.

2.2.4 Saskatoon Cycling Guide

Saskatoon's cycling guide identifies this corridor as a shared use on-road cycling lane suitable for intermediate riders. The guide shows the route connecting to the cycle track along Victoria Avenue north of 8th Street, which is part of Saskatoon's AAA cycling network.

2.3 Road Network Characteristics

2.3.1 Roadway Cross-Section

Figure 2, Figure 3, and Figure 4 show the existing cross-sections along Victoria Avenue.

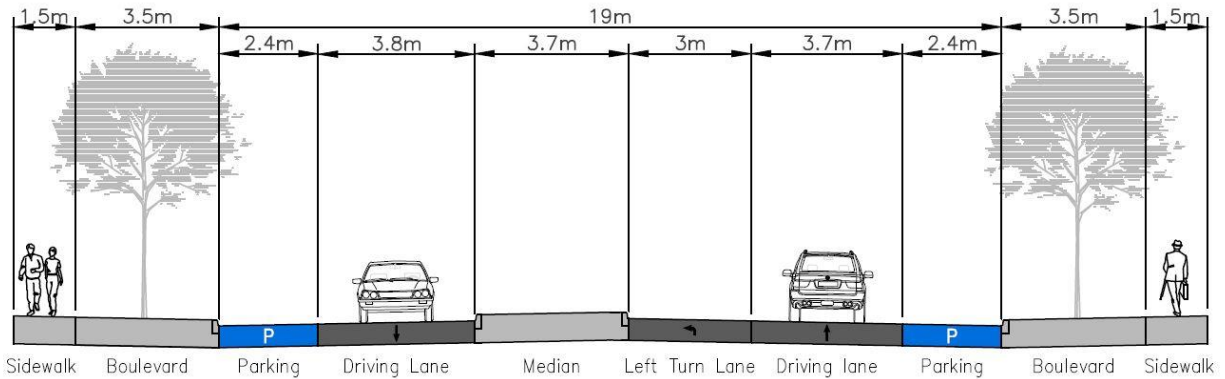


Figure 2: Victoria Avenue - Existing Cross-Section at 8th Street East

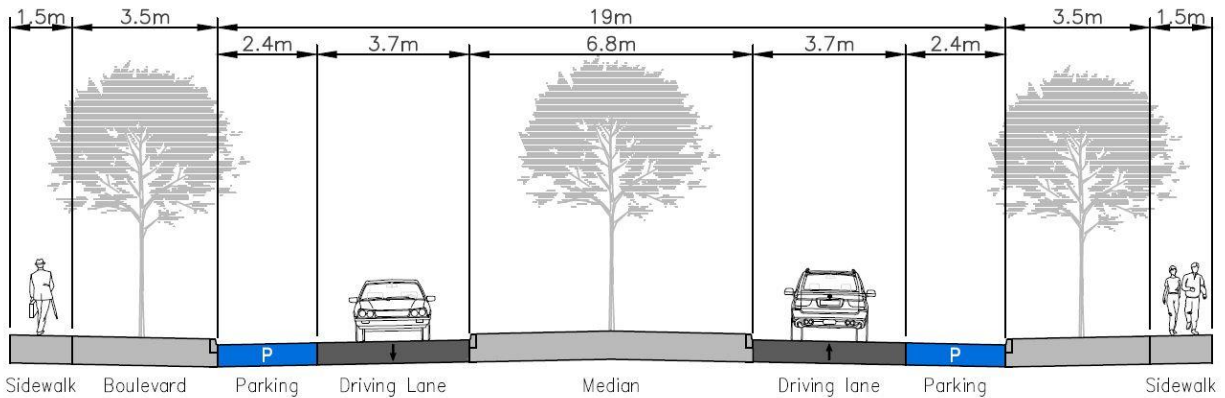


Figure 3: Victoria Avenue - Existing Cross-Section between 7th Street East and 6th Street East

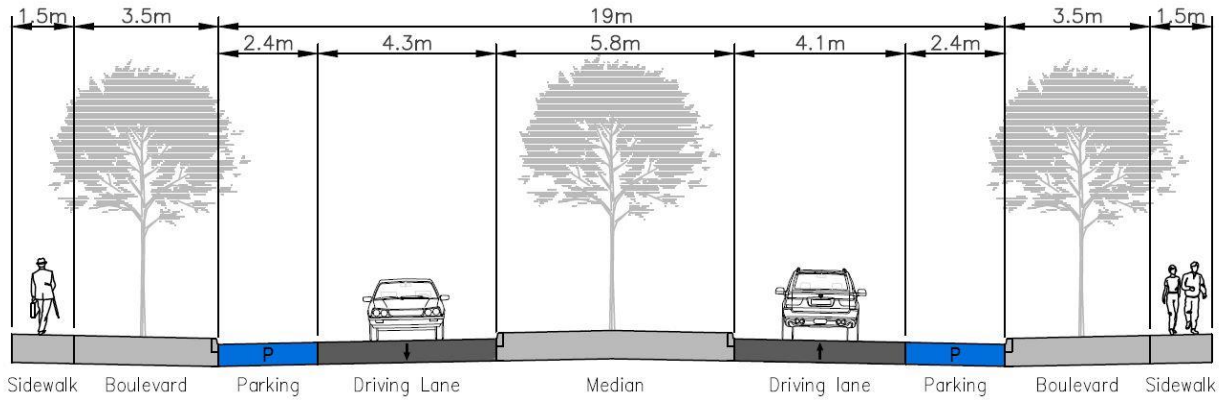


Figure 4: Victoria Avenue - Existing Cross-Section between 6th Street East and Taylor Street East

2.3.2 Road Network Classification and Intersection Controls

Victoria Avenue is classified as a collector street, as shown in Figure 5. There are signalized intersections at the north end of the corridor at 8th Street East and south end of the corridor at Taylor Street East. The side streets are stop controlled along the corridor, assigning right-of-way to Victoria Avenue drivers.

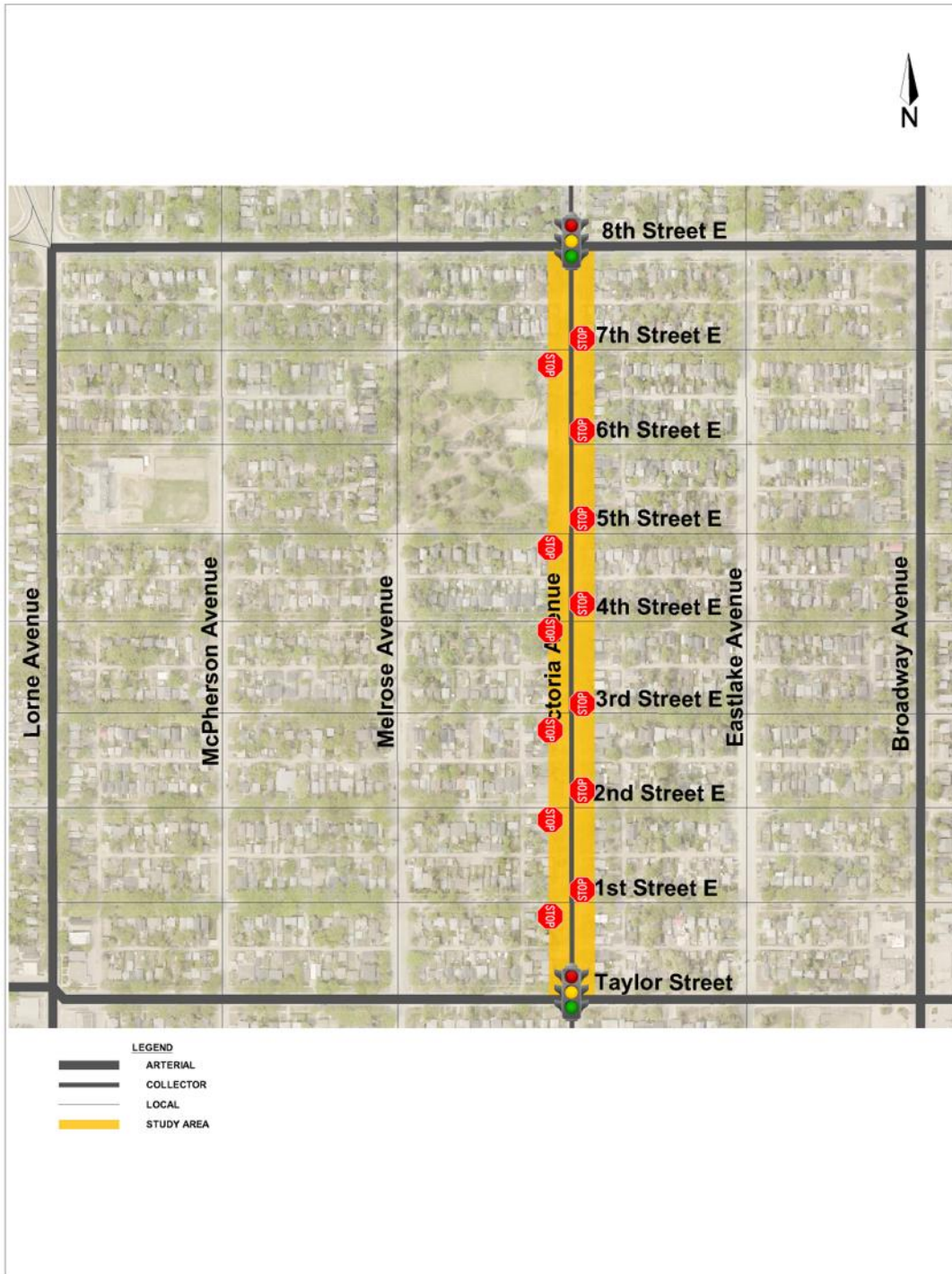


Figure 5: Victoria Avenue - Roadway Classification and Intersection Controls

2.3.3 Pavement Condition

Roadway preservation work along Victoria Avenue took place in 2020. Pavement resurfacing was completed on the west side of Victoria Avenue and as a result the pavement condition along the corridor for southbound travel is expected to be

good. The pavement condition for the east side of Victoria Avenue is poor, and resurfacing work is scheduled for 2021.

2.3.4 Traffic Volumes and Speeds

Table 1 summarizes the average annual daily traffic (AADT) and 85th percentile speeds along Victoria Avenue between 8th Street East and Taylor Street East.

Table 1: Victoria Avenue - Average Annual Daily Traffic and 85th Percentile Speeds

Corridor	From	To	Average Annual Daily Traffic	85 th Percentile Speed
Victoria Avenue	5 th Street East	6 th Street East	4,000 vehicles per day	50 km/h

2.3.5 Parking

A parking study was completed to determine the utilization of parking along Victoria Avenue. There are 64 parking spots present on the west side of Victoria Avenue, and 70 parking spots present on the east side of Victoria Avenue. The parking study was completed at 4:30 p.m. to determine parking utilization during the afternoon, and at 6:30 a.m. to determine overnight utilization. The results of the parking study are summarized in

Table 2.

Table 2: Victoria Avenue - Parking Utilization

Block	Side of Street	Parking Utilization		
		PM Utilization	AM Utilization	Average Utilization
8 th Street East to 7 th Street East	East Side	33%	33%	33%
	West Side	0%	14%	7%
7 th Street East to 6 th Street East	East Side	27%	55%	41%
	West Side	0%	0%	0%
6 th Street East to 5 th Street East	East Side	30%	60%	45%
	West Side	0%	0%	0%
5 th Street East to 4 th Street East	East Side	29%	57%	43%
	West Side	14%	14%	14%
4 th Street East to 3 rd Street East	East Side	13%	25%	19%
	West Side	25%	38%	32%
3 rd Street East to 2 nd Street East	East Side	25%	63%	44%
	West Side	50%	50%	50%
2 nd Street East to 1 st Street East	East Side	0%	13%	7%
	West Side	25%	63%	44%
1 st Street East to Taylor Street East	East Side	11%	22%	17%
	West Side	0%	38%	19%

Legend

0%-25%	26%-50%	51%-75%	76%-100%
--------	---------	---------	----------

2.4 Pedestrian Facilities

Sidewalks are present on both sides of the Victoria Avenue between 8th Street East and Taylor Street East. Curb ramps are in place throughout the corridor. Temporary curb extensions are currently in place at Victoria Avenue and 6th Street East to improve the visibility of pedestrians wanting to cross Victoria Avenue. There are pedestrian push buttons and walk lights at the traffic signals at 8th Street East and at Taylor Street East.

2.5 Bicycle Facilities

Victoria Avenue is considered a shared use road; ‘Share the Road - Side by Side’ signs are in place, as shown in Figure 6.



Figure 6: Share the Road - Side by Side

The traffic signals at 8th Street East and at Taylor Street East do not have detection available for cyclists, and people riding their bike on Victoria Avenue must wait for a vehicle to trigger the signal to change.

2.6 Transit Service and Facilities

There is no transit service along Victoria Avenue. There are transit stops on 8th Street East at Victoria Avenue for the Number 1 and Number 6 routes. There are transit stops on Taylor Street East at Victoria Avenue for the Number 1 route.

2.7 Collisions

Collision Data for Victoria Avenue was analyzed for the years 2015 – 2019 The data is summarized below in

Table 3.

- There were 47 collisions on the Victoria Avenue corridor for the five-year period. Of those collisions, 6 resulted in an injury and 41 were property damage only.
- The most common collision type was a right-angle collision, which accounted for 11 collisions.
- The intersection with the most collisions was Victoria Avenue and 8th Street East, which had 25 collisions.
- There were 0 collisions involving a cyclist.
- There was 1 collision involving a pedestrian at Victoria Avenue and 8th Street East.
- There was 1 collision involving a pedestrian at Victoria Avenue and 5th Street East.

Table 3: Victoria Avenue - Collision History

Year	Property Damage Only	Injury	Total
2015	3	3	6
2016	12	0	12
2017	9	0	9
2018	4	1	5
2019	13	2	15
Total	41	6	47

2.8 Multi-Modal Level of Service

Based on the existing conditions review in the previous section, a Multi-Modal Level of Service (MMLOS) was completed. MMLOS is defined as a set of discrete quantitative measures used to describe the convenience and comfort experienced by all roadway users over a particular roadway segment or at a particular intersection. MMLOS builds on the premise that in the past municipalities focused on vehicular traffic delay in evaluating the level of service (LOS) on streets. MMLOS was developed to provide a similar tool to assess convenience and comfort for all road users.

The MMLOS includes Bicycle Level of Service and Pedestrian Level of Service for the length of the corridor. A letter grade was given to each segment for the corridor. An overall score for each corridor was then developed by taking an average of each segment score. Further details on the MMLOS methodology are provided in Appendix A.

The results of the MMLOS analysis for the Victoria Avenue corridor are presented in Table 4, Figure 7, Figure 8, and Figure 9.

Table 4: Victoria Avenue - Overall MMLOS Results

	Bicycle Score		Pedestrian Score
	PM Peak	AM Peak	
Victoria Avenue	C	C	A

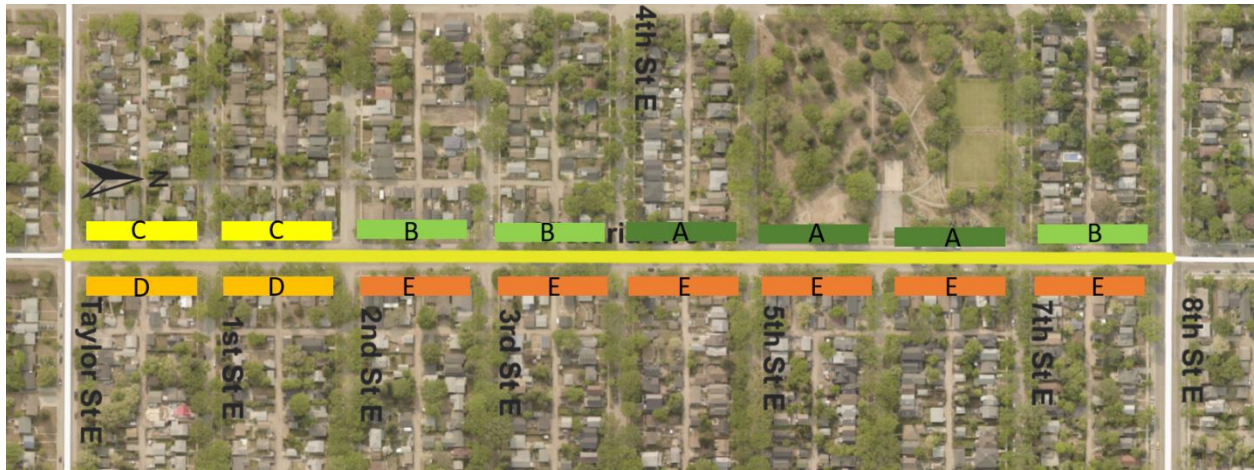


Figure 7: Victoria Avenue - Bicycle Level of Service AM Peak

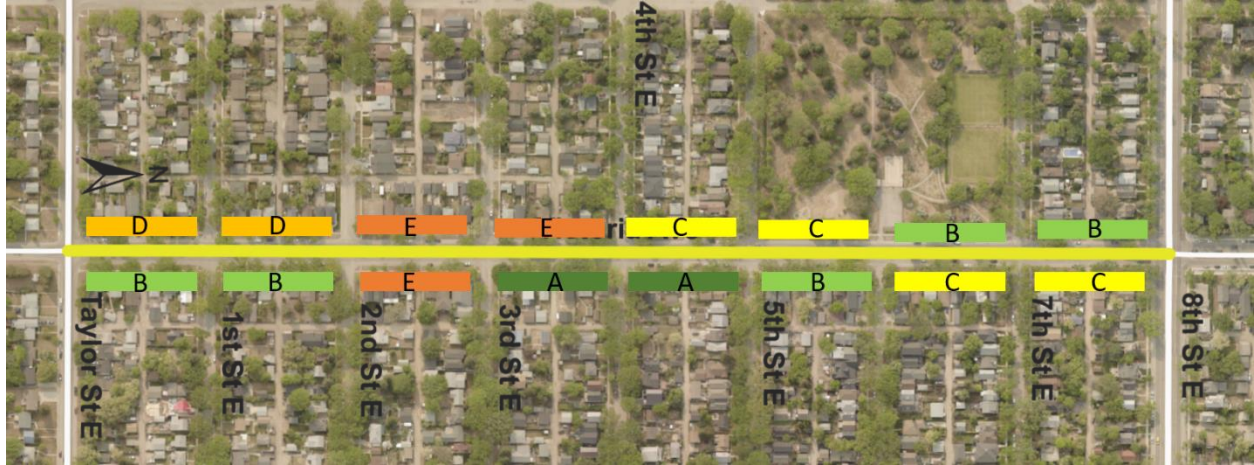


Figure 8: Victoria Avenue - Bicycle Level of Service PM Peak



Figure 9: Victoria Avenue - Pedestrian Level of Service

3.0 Phase 1 Neighbourhood Bikeway Engagement Summary

The first phase of public engagement was conducted in March 2020. A range of opportunities was available to provide input during this phase of engagement, including a series of five open houses, an online survey, social media, emails, and phone calls. This section summarizes the promotion and advertising that was conducted, objectives of the engagement, and engagement opportunities.

The first phase of public engagement was promoted and advertised through a range of channels to ensure that interested community members and stakeholders were aware of the engagement opportunities. Promotion and advertising included:

- Delivering flyers to all residences and businesses with 150 metres on each side of the study corridors;
- Sending flyers to key stakeholders inviting them to submit comments directly to the City, to attend the open houses, and/or to forward the invitations to other members of their stakeholder group;
- Contacting Community Consultants to request they pass information along to the relevant community associations;
- Contacting City Councillors in the affected wards;
- Placing portable billboards or changeable message boards along each study corridor to advertise the open houses; and
- Posting information about the public engagement opportunities on the City of Saskatoon Engage webpage and the City's social media pages.

3.1 Engagement Objectives

The purpose of the first phase of engagement was to obtain input on existing conditions, and opportunities and challenges for each corridor. Specific engagement objectives were to:

- Present general information to the public regarding active transportation and all ages and abilities cycling facilities, including neighbourhood bikeways;
- Discuss existing conditions, issues, and opportunities for each corridor;
- Discuss considerations and possible improvements for all modes of transportation, with a focus on active transportation, for each corridor; and
- Help inform design elements for each corridor's transportation needs.

3.2 Engagement Opportunities

The public was invited to attend and provide input at a series of five open houses held between March 4 and March 12, 2020. Each of the open houses was focused primarily on one of the study corridors and was held at a venue near the subject corridor. Although each open house focused primarily on the subject corridor, project information for all corridors was available at all open houses. An open house was held for the Victoria Avenue bikeway project in conjunction with the other open houses for the Neighbourhood Bikeways Project. The open house for Victoria Avenue was led by City

of Saskatoon staff, while the other project corridor open houses were led by Urban Systems.

The open houses for all five corridors provided background information and an opportunity to provide input on each of the study corridors. A large format roll plot was provided for the public to provide feedback on the corridor of focus at each event.

Residents were invited to share their input by:

- Sharing feedback at www.saskatoon.ca/engage;
- Speaking with project team members;
- Adding sticky note comments to any of the engagement materials;
- Using social media; and/or
- Filling out a comment form.

The following two key questions were asked about each of the corridors.

1. What would you like to see stay the same?
2. What would you like to see improved?

Nearly 100 community members participated in the open house events for the first phase of engagement, including 22 community members for the Victoria Avenue corridor, as shown in Table 5.

An online survey was also available for feedback between March 5 and March 25, 2020 on the City of Saskatoon Engage webpage. Community members were also able to comment directly on the City of Saskatoon Engage webpage. Over 60 survey responses were received.

The public was also invited to provide comments by email, telephone, or through social media channels. The City received emails from 16 residents, 5 phone calls, and one person commented on a social media post for all corridors.

Table 5: Engagement Round 1 Attendance

Event	Location	Date	Number of Attendees
14 th Street East Corridor Open House	Emmanuel Anglican Church	7-9 pm March 4, 2020	25
Dudley Avenue Corridor Open House	Saskatoon French School	7-9 pm March 5, 2020	11
3 rd Avenue South Corridor Open House	Frances Morrison Public Library	7-9 pm March 9, 2020	19
Victoria Avenue Corridor Open House	Queen Elizabeth School	7-9 pm March 11, 2020	22
29 th Street West / 31 st Street West Corridor Open House	Howard Coad Elementary School	7-9 pm March 12, 2020	16

3.3 Summary of Public Input

A number of suggestions and issues were identified by members of the public that attended the open houses and completed the online survey. Figure 10 below summarizes the input received on the roll plot during the Victoria Avenue open house. A detailed summary of input received through engagement can be found in Appendix B.



Figure 10: Victoria Avenue - Open House Feedback Summary

1. The transition at 8th Street East from the raised cycle track to cycling on road is difficult.
2. Continue the raised cycle track south of 8th Street East.
3. There are not that many houses fronting Victoria Avenue from 8th Street East to 5th Street East.
4. Fear of doors and vehicles when biking during the morning rush.
5. Challenging intersection to cross as a pedestrian, people don't stop.
6. Parking near Buena Vista park is busy during the summer.
7. Parking is something I wouldn't want to lose in front of my house. Suggest narrowing the median to make room for the bike lanes.
8. Just south of the back lane the sidewalk is uneven.
9. Illegal median crossing from alley to alley needs to be mitigated.
10. Patchy grass along the median due to lack of maintenance.

General Comments:

- Narrow the median to make room for bike lanes and to maintain parking.
- The mature boulevard trees are more important than the younger median trees.
- Install missing curb ramps.

Additional input received on the open house display boards indicated that users are very happy with the raised cycle track along Victoria Avenue between 8th Street East and the Traffic Bridge and would like to see it continued south through the study corridor. Many attendees suggested narrowing the centre median to make room for a protected facility and to maintain parking along the corridor. There were suggestions to add cyclist detection to the traffic signals at the intersections of 8th Street East and Victoria Avenue, and Taylor Street East and Victoria Avenue to improve the level of service for cyclists. There were comments that some of the sidewalks along the corridor are uneven and in need of maintenance. Attendees also wanted to see more education for both drivers and cyclists in Saskatoon on things such as passing and that cyclists are vehicles. Attendees also wanted to see more promotion of Saskatoon's Cycling

Guide. There was also a suggestion to use Melrose Avenue or Eastlake Avenue as the AAA cycling route instead of Victoria Avenue.

Feedback received through the online survey highlighted similar views to what was heard at the open house. Several respondents commented that trees along the corridor are very important and wish to see them maintained. Several respondents also commented that they appreciate the existing cycling infrastructure along Victoria Avenue north of 8th Street East; however, some more experienced cyclists found the constant ramping up and down at the side streets to be uncomfortable. There were many requests to see a protected cycling facility continued along Victoria Avenue to the south of 8th Street East, and some wish to see it continued south past Taylor Street East. Some respondents wished to see traffic calming along the corridor.

A summary of improvement opportunities identified for Victoria Avenue during the open house includes:

- Narrow the centre median to make space for both a parking lane and a bike lane or raised cycle track.
- It is more important to keep the mature boulevard trees than the younger median trees.
- Improvements are needed to the intersection of 8th Street East and Victoria Avenue so that cyclists can be detected and have a smoother transition between cycling facilities.

3.4 Summary of Opportunities and Challenges

Based on the technical analysis and public input, a number of key themes have been identified that present either challenges or opportunities along this section of Victoria Avenue. These themes were used to develop concept designs to create safe and comfortable cycling facilities that meet the project goals. The key themes for Victoria include:

- The trees along the corridor are very important, especially the mature boulevard trees.
- On-street parking is very important along the corridor.
- Users are very happy with the raised cycle track along Victoria Avenue north of the study corridor, and there is a desire to see a similar facility extended to the south.

4.0 Design

4.1 Design Alternatives

To create an all ages and abilities cycling facility on Victoria Avenue five design alternatives have been developed based on technical analysis and public feedback. The existing traffic volumes and speeds along Victoria Avenue are above the 1,500 vehicle per day, and 30 km/h thresholds for a neighbourhood bikeway. Physical separation between people riding bikes and vehicles is required to be safe and comfortable for

cyclists of all ages and abilities. To improve active transportation on Victoria Avenue, a separate protected cycling facility, such as protected bike lanes or cycle tracks is recommended. The five design options presented would all create a AAA cycling facility and are viable solutions. A “Do Nothing” option that does not include a AAA cycling facility on Victoria Avenue was included to compare the impacts of each design option to the existing conditions of the corridor.

4.1.1 Option 1 – Bidirectional Bike Lane (West Side)

Option 1 features a street-level bidirectional bike lane on the west side of Victoria Avenue. For bidirectional facilities, the bicycle lanes run in both directions on the same side of a street. This option would be adjacent to the single-family homes and Buena Vista Park on the west side of the corridor and would require the removal all parking on the west side of Victoria Avenue. All boulevard and median trees are preserved with this option. The centre median would be narrowed slightly on the west side. Cyclists would be required to make a two-stage crossing at the intersections of 8th Street East and Victoria Avenue, and Taylor Street East and Victoria Avenue to access the facility. Cyclist detection would be provided at both signalized intersections. Figure 11 shows the cross section for Option 1 – Bidirectional Bike Lane (West Side).

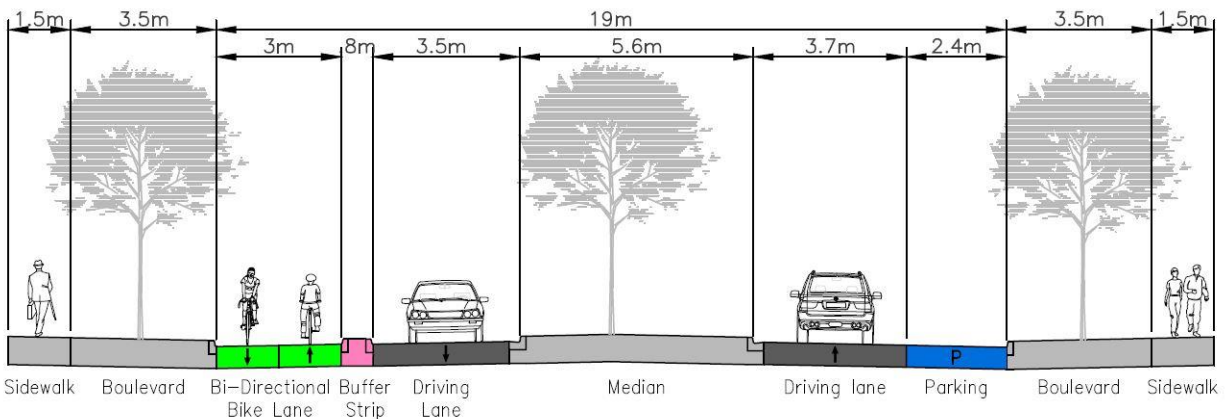


Figure 11: Victoria Avenue - Option 1 - Bidirectional Bike Lane (West Side)

4.1.2 Option 2 – Protected Street-Level Bike Lanes without Parking

Option 2 features protected street-level bike lanes on both sides of Victoria Avenue. This option removes all parking on both sides of Victoria Avenue. All boulevard and median trees are preserved with this option. All existing curbs remain the same with this option. Cyclist crossings at the signalized intersections of 8th Street East and Victoria Avenue, and Taylor Street East and Victoria Avenue are simple: the cyclists proceed across the intersection with traffic. Cyclist detection would be provided at both signalized intersections. Figure 12 shows the cross-section for Option 2 – Protected Street-Level Bike Lanes without Parking.

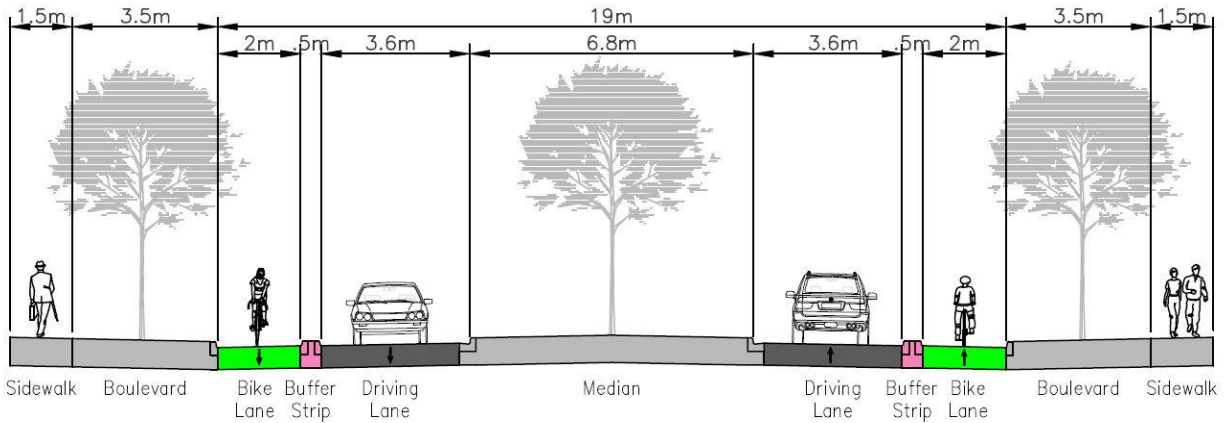


Figure 12: Victoria Avenue - Option 2 - Protected Street-Level Bike Lanes without Parking

4.1.3 Option 3 – Raised Bike Lanes without Parking

Option 3 features raised bike lanes on both sides of Victoria Avenue. This option removes all parking on both sides of Victoria Avenue. All boulevard and median trees are preserved with this option. The existing median curbs remain the same with this option. Cyclist crossings at the signalized intersections of 8th Street East and Victoria Avenue, and Taylor Street East and Victoria Avenue are simple: the cyclists proceed across the intersection with traffic. Cyclist detection would be provided at both signalized intersections. The raised facility is similar to the raised cycle track facility north of 8th Street East. Cyclists would be required to ramp up and down to street-level frequently to accommodate access to side streets, back lanes, and driveways. The option requires a full roadway reconstruction to allow for changes to the roadway drainage. Figure 13 shows the cross-section for Option 3 – Raised Bike Lanes without Parking.

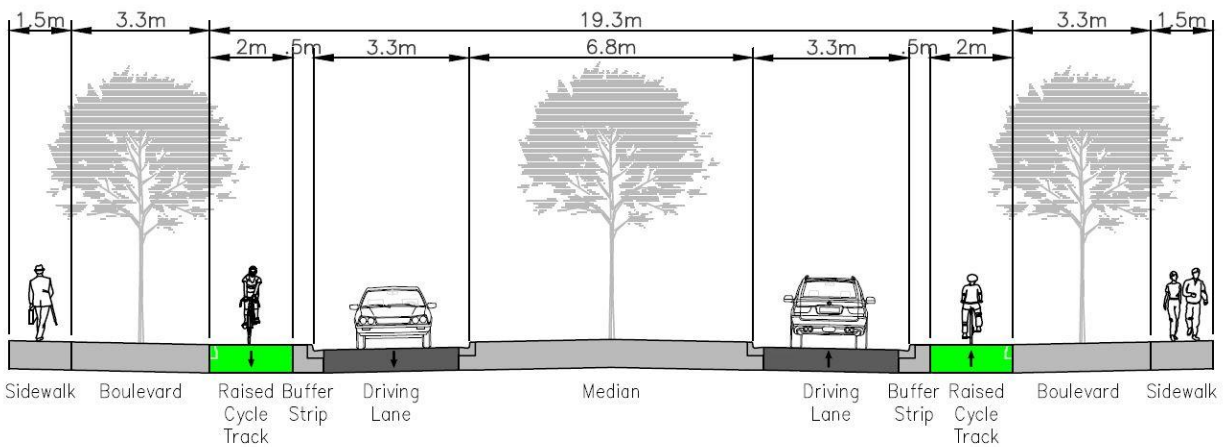


Figure 13: Victoria Avenue - Option 3 - Raised Bike Lanes without Parking

4.1.4 Option 4 – Protected Street-Level Bike Lanes with Parking

Option 4 features protected street-level bike lanes on both sides of Victoria Avenue. To maintain parking on both sides of the street between 7th Street East and Taylor Street East, this option requires the centre median along Victoria Avenue to be narrowed, and all trees located in the median to be removed. Although this option would maintain parking for the majority of the corridor, parking would need to be removed between 8th Street East and 7th Street East. Cyclist crossings at the signalized intersections of 8th Street East and Victoria Avenue, and Taylor Street East and Victoria Avenue are simple: the cyclists proceed across the intersection with traffic. Cyclist detection would be provided at both signalized intersections. The option requires a full roadway reconstruction to allow for changes to the roadway drainage. Figure 14 and Figure 15 show the cross-sections for Option 4 – Protected Street-Level Bike Lanes with Parking.

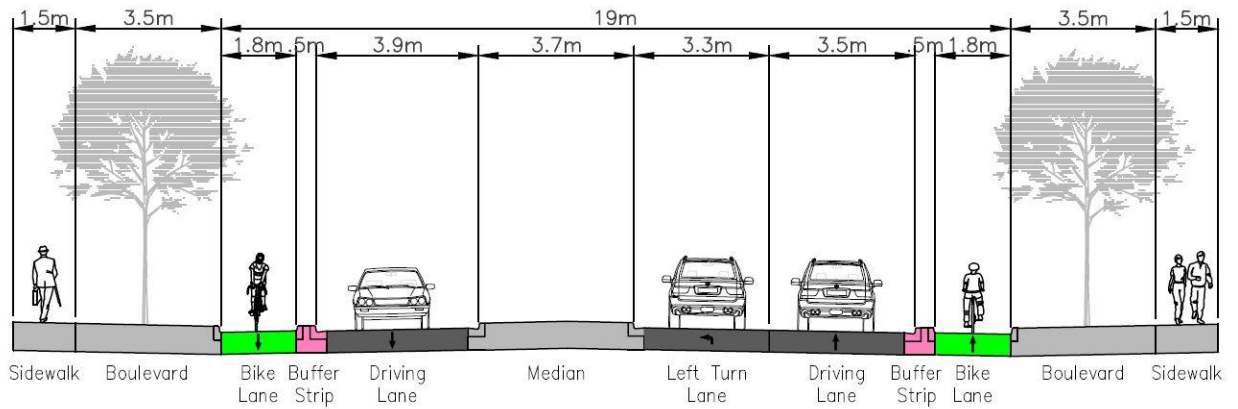


Figure 14: Victoria Avenue - Option 4 - Protected Street-Level Bike Lanes with Parking (8th Street East to 7th Street East)

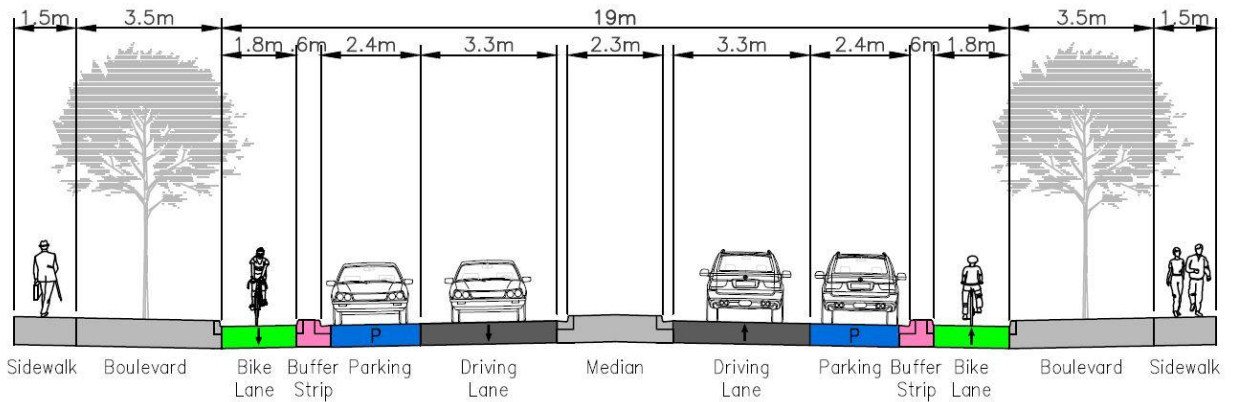


Figure 15: Victoria Avenue - Option 4 - Protected Street-Level Bike Lanes with Parking (7th Street East to Taylor Street East)

4.1.5 Option 5 – Raised Bike Lanes with Parking

Option 5 features raised bike lanes on both sides of Victoria Avenue. To maintain parking on both sides of the street between 7th Street East and Taylor Street East, this option requires the centre median along Victoria Avenue to be narrowed, and all trees located in the median to be removed. Although this option would maintain parking for the majority of the corridor, parking would need to be removed between 8th Street East and 7th Street East. Cyclist crossings at the signalized intersections of 8th Street East and Victoria Avenue, and Taylor Street East and Victoria Avenue are simple: the cyclists proceed across the intersection with traffic. Cyclist detection would be provided at both signalized intersections. The raised facility is similar to the raised cycle track facility north of 8th Street East. Cyclists would be required to ramp up and down to street-level frequently to accommodate access to side streets, back lanes, and driveways. The option requires a full roadway reconstruction to allow for changes to the roadway drainage. Figure 16 and Figure 17 show the cross-sections for Option 5 – Raised Bike Lanes with Parking.

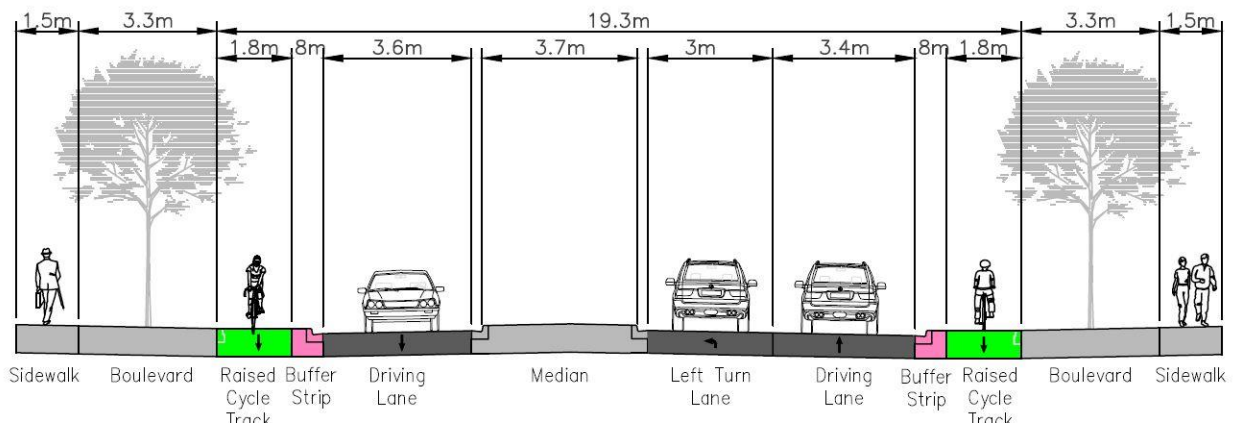


Figure 16: Victoria Avenue - Option 5 Raised Bike Lanes with Parking (8th Street East to Taylor Street East)

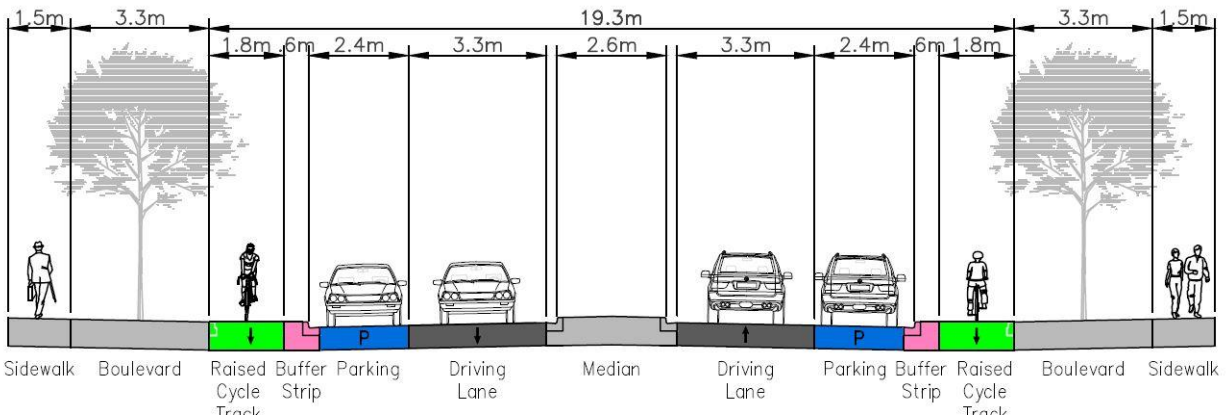


Figure 17: Victoria Avenue - Option 5 Raised Bike Lanes with Parking (7th Street East to Taylor Street East)

Figure 18 shows all five design options for a AAA cycling facility along Victoria Avenue.

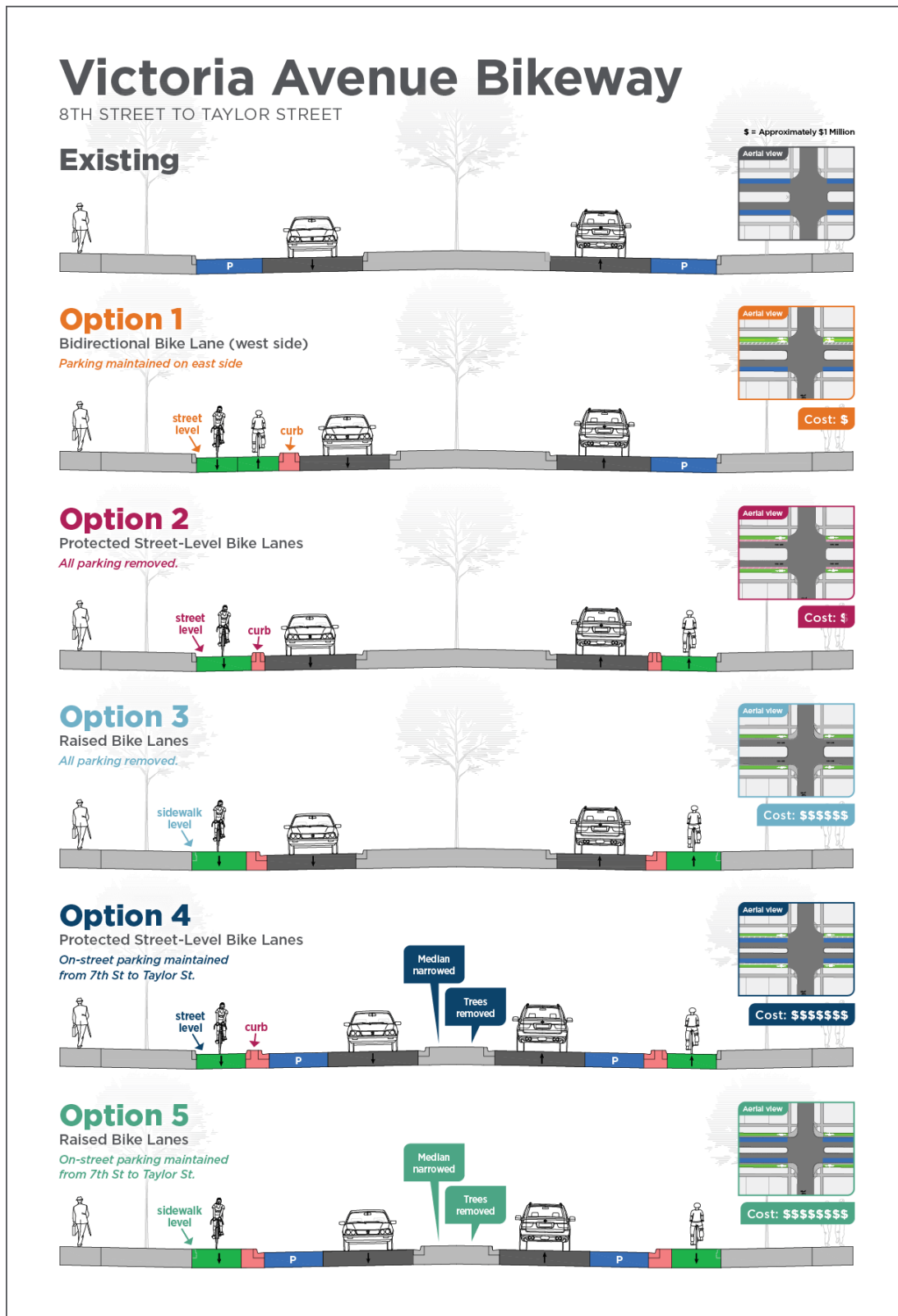


Figure 18: Victoria Avenue - Bikeway Design Options

4.1.6 Option 6 – Do Nothing

Option 6 recommends no improvements for cyclists on Victoria Avenue. People riding bikes would still be permitted to ride in mixed traffic on the street; however, a AAA cycling facility is not provided.

4.2 Traffic Calming Measures at 6th Street East

The Buena Vista NTR recommended that a curb extension be installed at Victoria Avenue and 6th Street East to improve pedestrian safety for those crossing Victoria Avenue.

4.2.1 Raised Crosswalk

The recommendations for bike lanes to be installed with Options 1 to 5 does not allow for horizontal traffic calming, such as curb extensions, to be installed along Victoria Avenue. The bike lanes will narrow the roadway width and reduce the need for additional horizontal deflections. To meet the Buena Vista NTR recommendations for Victoria Avenue, Options 1 to 5 include a raised crosswalk at Victoria Avenue and 6th Street East. Figure 19 shows the raised crosswalk with Option 2 – Protected Street-Level Bike Lanes.

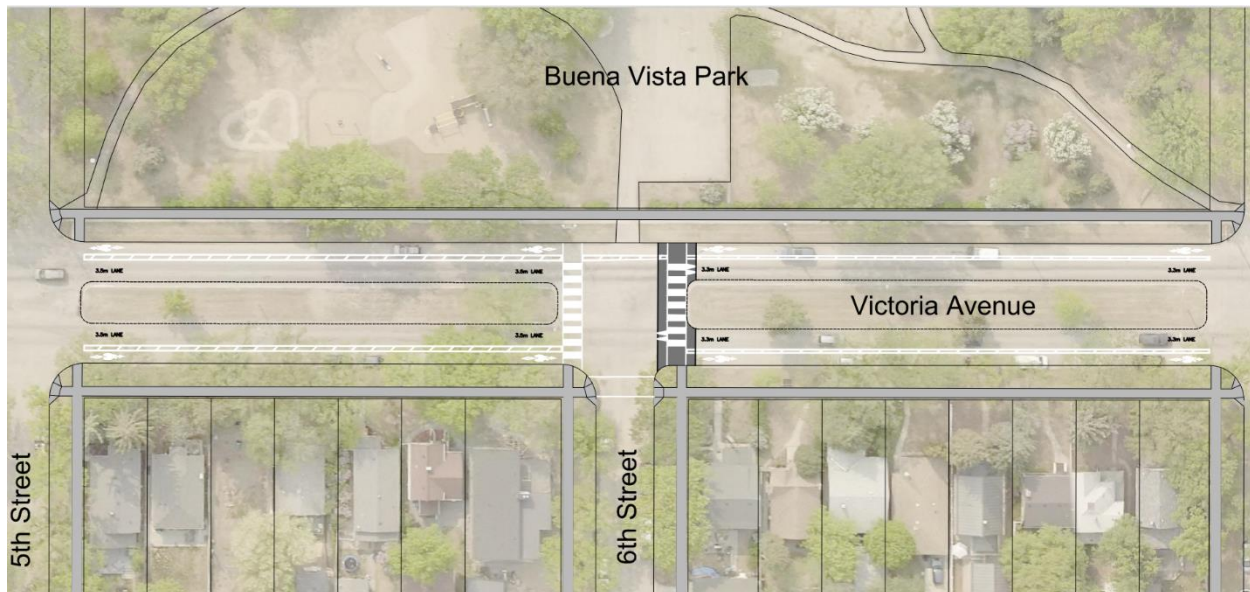


Figure 19: Victoria Avenue - Raised Crosswalk at 6th Street East

4.2.2 Curb Extension

Option 6 does not include the installation of a cycling facility along Victoria Avenue, and as a result horizontal traffic calming can be provided along Victoria Avenue. As such, the temporary curb extension would be installed permanently as part of the NTR permanent implementation once funding is approved.

4.3 Cost Estimates

Cost estimates were prepared based on typical unit costs in the City of Saskatoon. Cost estimates include a 30% contingency distributed throughout. Table 6 shows the estimated cost for each design alternative.

Table 6: Victoria Avenue: Cost Estimates

	Alternatives					
	Option 1 Bidirectional Bike Lane (West Side)	Option 2 Protected Street-Level Bike Lanes without Parking	Option 3 Raised Bike Lanes without Parking	Option 4 Protected Street-Level Bike Lanes with Parking	Option 5 Raised Bike Lanes with Parking	Option 6 Do Nothing
Signage and Pavement Markings	\$110,214	\$73,515	\$73,515	\$73,515	\$73,515	-
Traffic Signal Upgrades	\$32,500	\$32,500	\$32,500	\$32,500	\$32,500	-
Protected Cycling Facility	\$192,649	\$295,151	\$4,915,862	\$474,271	\$1,868,499	-
Median Work	\$325,783	-	-	\$5,116,620	\$4,749,038	-
Traffic Calming	\$28,158	\$28,158	\$28,158	\$28,158	\$28,158	\$45,000
Engineering (10%)	\$68,930	\$42,932	\$505,004	\$572,506	\$675,171	\$4,500
Total	\$758,234	\$472,257	\$5,555,039	\$6,297,570	\$7,426,880	\$ 49,500

4.4 Design Evaluation

A technical analysis was completed to evaluate the five design alternatives. Consideration was given to the following key elements:

- Transportation Network;
- Cyclist Accommodation;
- Safety;
- Traffic Operation;
- Parking Impacts; and
- Vegetation Impacts.





































Table 7 shows the scoring used to evaluate the design options. The full evaluation can be seen in Table 8.













Table 7: Evaluation Table Scores

Very Poor	Poor	Fair	Good	Excellent

Table 8: Victoria Avenue - Design Options Evaluation Table

Criteria	Measures	Alternatives					
		Option 1 Bidirectional Bike Lane (West Side)	Option 2 Protected Street-Level Bike Lane without Parking	Option 3 Raised Bike Lanes without Parking	Option 4 Protected Street-Level Bike Lane with Parking	Option 5 Raised Bike Lane with Parking	Option 6 Do Nothing
Transportation Network	Network Continuity	Continues AAA cycling network south of 8 th Street. 	Continues AAA cycling network south of 8 th Street. 	Continues AAA cycling network south of 8 th Street. 	Continues AAA cycling network south of 8 th Street. 	Continues AAA cycling network south of 8 th Street. 	AAA cycling route along Victoria Avenue does not continue south of 8 th Street. Cyclists can continue to share lane with traffic.
	Connections to destinations	Connects to residences and Buena Vista Park on west side of Victoria Avenue. 	Connects to residences and provides easy access to Buena Vista park for southbound cyclists. 	Connects to residences and provides easy access to Buena Vista park for southbound cyclists. 	Connects to residences and provides easy access to Buena Vista park for southbound cyclists. 	Connects to residences and provides easy access to Buena Vista park for southbound cyclists. 	Similar to existing conditions. Cyclists comfortable riding on street can still access destinations.
Cyclist Accommodation	Comfort	Protected bidirectional bike lanes have sufficient space for cyclists with adequate separation from vehicular traffic to provide an AAA facility. 	Protected unidirectional bike lanes allow for wide bike lanes and adequate separation from vehicular traffic to provide a comfortable AAA facility. 	Raised cycle track has sufficient space for cyclist and comfortable separation from vehicular traffic. Cyclist will have to ramp up and down at driveways and side streets. An AAA facility is provided. 	Protected unidirectional bike lanes have sufficient space for cyclists and adequate separation from vehicular traffic to provide an AAA facility. 	Raised cycle track has sufficient space for cyclist and comfortable separation from vehicular traffic. Cyclist will have to ramp up and down at driveways and side streets. An AAA facility is provided. 	The speeds and traffic volumes on Victoria Avenue are too high to provide an AAA facility. It is uncomfortable for cyclists that are not confident riding in the travel lane.
	Convenience	Cyclists need to cross the major crossings in both directions to access the bidirectional facility. Cyclist detection (i.e. 	Cyclists need to cross the major crossings in one direction only resulting in less delay. Cyclist detection (i.e. push 	Cyclists need to cross the major crossings in one direction only resulting in less delay. Cyclist detection (i.e. push 	Cyclists need to cross the major crossings in one direction only resulting in less delay. Cyclist detection (i.e. push 	Cyclists need to cross the major crossings in one direction only resulting in less delay. Cyclist detection (i.e. push 	Lack of dedicated cycling facility results in delays for cyclists at the major crossings.

Criteria	Measures	Alternatives					
		Option 1 Bidirectional Bike Lane (West Side)	Option 2 Protected Street-Level Bike Lane without Parking	Option 3 Raised Bike Lanes without Parking	Option 4 Protected Street-Level Bike Lane with Parking	Option 5 Raised Bike Lane with Parking	Option 6 Do Nothing
		push button) provided in the design. 	button) provided in the design. 	button) provided in the design. 	button) provided in the design. 	button) provided in the design. 	
Safety	Conflict points – West Side	9 driveway crossings 6 minor intersection crossings 	9 driveway crossings 6 minor intersection crossings 	9 driveway crossings 6 minor intersection crossings 	9 driveway crossings 6 minor intersection crossings 	9 driveway crossings 6 minor intersection crossings 	9 driveway crossings 6 minor intersection crossings 
	Conflict points – East Side	0 Driveway Crossings 0 minor intersection crossings 	8 Driveway crossings 7 minor intersection crossings 	8 Driveway crossings 7 minor intersection crossings 	8 driveway crossigns 7 minor intersection crossings 	8 Driveway crossings 7 minor intersection crossings 	8 Driveway Crossings 7 minor intersection crossings 
	Transitions at 8 th Street East and Taylor Street East	Transitions at 8 th Street East and Taylor Street East increase exposure for cyclists. Cyclists may need to cross the intersections in both directions to access the bidirectional facility. 	Transitions at 8 th Street East and Taylor Street East require cyclists to cross the intersections in one direction only, reducing potential conflicts with vehicular traffic. 	Transitions at 8 th Street East and Taylor Street East require cyclists to cross the intersections in one direction only, reducing potential conflicts with vehicular traffic. 	Transitions at 8 th Street East and Taylor Street East require cyclists to cross the intersections in one direction only, reducing potential conflicts with vehicular traffic. 	Transitions at 8 th Street East and Taylor Street East require cyclists to cross the intersections in one direction only, reducing potential conflicts with vehicular traffic. 	Concerns for cyclists transitioning from raised cycle track to shared lane at 8 th Street East. 
Traffic Operations	Addition of bike signals at 8 th Street East and Taylor Street East	Minor impact. Cyclist detection (i.e. push button) on Victoria Avenue could result in minor delays for 8 th Street East and Taylor Street East traffic. 	Minor impact. Cyclist detection (i.e. push button) on Victoria Avenue could result in minor delays for 8 th East Street and Taylor Street East traffic. 	Minor impact. Cyclist detection (i.e. push button) on Victoria Avenue could result in minor delays for 8 th Street East and Taylor Street East traffic. 	Minor impact. Cyclist detection (i.e. push button) on Victoria Avenue could result in minor delays for 8 th Street East and Taylor Street East traffic. 	Minor impact. Cyclist detection (i.e. push button) on Victoria Avenue could result in minor delays for 8 th Street East and Taylor Street East traffic. 	No change. 
	Traffic Calming	Narrow travel lanes for southbound motorist may reduce speed. Raised crosswalk may reduce speed for both directions. 	Narrow travel lanes and raised crosswalk may reduce travel speed. 	Narrow travel lanes and raised crosswalk may reduce travel speed. 	Narrow travel lanes and raised crosswalk may reduce travel speed. 	Narrow travel lanes and raised crosswalk may reduce travel speed. 	No change. NTR recommendation for curb extension at 6 th Street East. 

Criteria	Measures	Alternatives					
		Option 1 Bidirectional Bike Lane (West Side)	Option 2 Protected Street-Level Bike Lane without Parking	Option 3 Raised Bike Lanes without Parking	Option 4 Protected Street-Level Bike Lane with Parking	Option 5 Raised Bike Lane with Parking	Option 6 Do Nothing
Parking impacts	Parking spots removed	64 parking spots removed on west side. 	64 parking spots removed on west side. 70 parking spots removed on east side. 	64 parking spots removed on west side. 70 parking spots removed on east side. 	Approximately 16 parking spots removed between 8 th Street East and 7 th Street East. 	Approximately 16 parking spots removed between 8 th Street East and 7 th Street East. 	No change. 0 parking spots affected. 
Vegetation impacts	Number of trees removed	No impact, 0 trees removed 	No impact, 0 trees removed 	No impact, 0 trees removed 	Most trees on median will be removed 	Most trees on median will be removed 	No impact, 0 trees removed 
Cost	Capital cost	\$758,234	\$472,257	\$5,555,039	\$6,297,570	\$7,426,880	\$ 49,500
Total Score (before cost)		8.25	8.25	7.75	8	7.75	6

The final ranking of design alternatives based on the technical criteria are as follows:

1. Option 2 – Protected Bike Lanes without Parking
2. Option 1 – Bidirectional Bike Lane (West Side)
3. Option 4 – Protected Bike Lane with Parking
4. Option 3 – Raised Cycle Track without Parking
5. Option 5 – Raised Cycle Track with Parking

5.0 Phase 2 Engagement Summary

The second phase of public engagement for the Neighbourhood Bikeways Project was completed in the second half of 2020. The second public meeting for the Victoria Avenue corridor was conducted in December 9, 2020. A range of opportunities were available to provide input during this phase of engagement for Victoria Avenue, including an online meeting, online survey, emails, and phone calls. This section summarizes the promotion and advertising that was conducted, the objectives of the engagement, and the engagement opportunities.

The second phase of public engagement was promoted and advertised through a range of channels to ensure that interested community members and stakeholders were aware of the engagement opportunities. Promotion and advertising included:

- Delivering flyers to all residences and businesses with 150 metres on each side of the study corridor;
- Sending flyers to key stakeholders inviting them to submit comments directly to the City, attend the online meetings, and/or forward the invitations to other members of their stakeholder group;
- Contacting Community Consultants to request that they pass information along to the relevant community associations;
- Notifying City Councillors in the affected wards;
- Placing portable billboards along the study corridor to advertise the online meeting;
- Posting information about the public engagement opportunities on the City of Saskatoon Engage; and
- Sending an email update to the email subscriber list for the project.

5.1 Engagement Objectives

The purpose of the second phase of engagement was to obtain input on the recommended designs for each corridor. Specific engagement objectives were to:

- Present the design alternatives for Victoria Avenue;
- Communicate how previous public input informed the designs;
- Collect public feedback on the design alternatives; and
- Summarize public feedback on the design alternatives for the final report to Standing Policy Committee on Transportation and City Council.

5.2 Engagement Opportunities

The public was invited to attend an online meeting on December 9, 2020 using Microsoft Teams Live. The online meeting presented an overview of the study process, existing conditions, and the five design alternatives for an AAA cycling facility on Victoria Avenue. The meeting started with a presentation and provided an opportunity for questions and answers following the presentation. The online public meetings were recorded and were posted to the City of Saskatoon Engage webpage.

In addition to the online public meetings, the five design options were posted to the City of Saskatoon Engage webpage to provide information in advance of the online public meeting. An online survey was also posted to the Engage webpage so that residents could share their thoughts on the design options and indicate their preferred design.

Residents were invited to share their input by:

- Sharing feedback at www.saskatoon.ca/engage;
- Asking questions during the online public meeting;
- Completing the online survey; and/or
- Emailing or phoning the City.

Twenty community members participated in the online public meeting for Victoria Avenue. The City received 48 responses from residents by email or phone call, and 215 survey responses for the Victoria Avenue corridor.

5.3 Summary of Public Input

A detailed summary of input received through engagement can be found in Appendix B.

5.3.1 Online Meeting

There were several questions raised during the online meeting, including:

- Why Victoria Avenue was chosen for this project instead of Eastlake Avenue or Melrose Avenue, which have lower traffic volumes;
- Why construction of a cycling facility along Victoria Avenue did not occur with the asset preservation work that was completed in 2020;
- Why the two raised cycle track options scored so low on the evaluation table;
- How Option 1 – Bidirectional bike lanes (west side) would integrate with the existing facility along Victoria Avenue north of 8th Street East; and
- What are the next steps for this project?

During the online meeting, several residents expressed concerns over the potential loss of on-street parking along Victoria Avenue.

5.3.2 Online Survey

The online public survey was available on the projects Engage Page from December 9, 2020 to January 11, 2021 and received 215 responses.

The five AAA cycling design options were provided, and respondents were asked to indicate if they strongly support, moderately support, mildly support, or do not support each option. The results are shown in Table 9 below.

Table 9: Level of Support for Victoria Avenue Design Options

	Strongly Support		Moderately Support		Mildly Support		Do Not Support		Total
	#	%	#	%	#	%	#	%	#
Option 1	47	23	48	9	24	12	116	57	205
Option 2	45	22	22	11	15	7	123	60	205
Option 3	22	11	24	12	34	17	124	61	204
Option 4	27	13	35	17	25	12	117	57	204
Option 5	74	36	19	9	40	19	73	35	206

Respondents were also asked if they had a favourite option among the five design options. Responses are presented in Table 10 below in descending order of preference among respondents.

Table 10: Favourite Design Option for Victoria Avenue

	#	%
Option 5	67	32
Option 1	46	22
Option 2	33	16
No Favourite	30	14
Option 4	22	10
Option 3	13	6
Total	211	100

Option 5 had the strongest level of support among the five options with 36% indicating they strongly support that option. Option 5 was also the only option in which fewer than half (35%) of respondents indicated they do not support the option. Respondents were also asked if they had a favourite option among the five design options. Option 5 was selected as the favourite (32%) most often compared to the other options.

Respondents were also asked to provide their comments. Below are the most common themes provided.

- Opposition to the loss of any on-street parking;
 - Infill in the area has increased demand for on-street parking;
 - On-street parking is the only available option for some;
 - Accessibility concerns for those with disabilities over the loss of parking;
 - On-street parking is needed for visitors, deliveries, taxies, contractors, etc.;

- Concerns of the impact to property resale values;
- Opposition to the removal of trees;
- Suggestions for alternative bikeways routes such as Eastlake Avenue, Melrose Avenue, or McPherson Avenue;
- The project is too costly, and should not be a priority;
- Victoria Avenue is an important AAA cycling network connection; and
- Communications for engagement events could be improved.

5.3.3 Emails and Phone Calls

Residents contacted the city via email and phone call to submit questions and comments including the following:

- 30 residents expressed concerns over the loss of on-street parking on Victoria Avenue, 8 of those residents also felt that demand for on-street parking has increased due to infill development in the neighbourhood;
- 11 residents were concerned that this project, specifically with the loss of on-street parking, would negatively affect their property values;
- 16 residents requested that an alternate route, such as Eastlake Avenue or Melrose Avenue, be used instead of Victoria Avenue;
- 6 residents had questions about how the public was notified about this project, and felt the City could have done more to notify residents in the area;
- 5 residents had questions about the demand for a cycling facility in the area;
- 2 residents expressed concerns about pedestrian safety at 8th Street East and Victoria Avenue;
- 4 residents had questions about why this project was not completed in the summer of 2020 to align with the asset preservation work on Victoria Avenue;
- 6 residents supported having a protected cycling facility on Victoria Avenue; and
- 3 residents stated that they would be okay with reduced parking on Victoria Avenue.

Residents were very concerned about the potential loss of on-street parking on Victoria Avenue with some of the design options. Their concerns include:

- Residents and visitors with limited mobility would be negatively affected by not being able to park on Victoria Avenue near their homes. Disabled parking spots would no longer be available on Victoria Avenue, and would need to be accommodated on the side streets.
- The back alleys are not cleared of snow in the winter which could create issues for access in the winter, particularly during a snow event.

- Delivery vehicles, taxis, contractors, etc., would not be able to park along Victoria Avenue.
- There is already high demand for parking on the side streets along Victoria Avenue between 8th Street East and Taylor Street East.
- Residents that must park on side streets would not be able to plug their car in during the winter.

6.0 Closing

This report summarizes the existing conditions, opportunities, and challenges for the Victoria Avenue corridor along with five AAA cycling facility design options and cost estimates. This report also summarizes the engagement process and results based on two phases of public engagement. Options 1 to 5 are all feasible options to provide a AAA facility on Victoria Avenue. Option 4 – Protected Street-Level Bike Lanes with Parking is recommended to provide an AAA cycling facility on Victoria Avenue because it strikes a balance between the transportation benefits and impacts to parking and vegetation, and can be seen in Appendix C.

Appendix A: Multi-Modal Level of Service

A multi-modal level of service (MMLOS) was developed for the corridor and included considerations for Bicycle Level of Service (BLOS) and Pedestrian Level of Service (PLOS). BLOS and PLOS were calculated by following the Highway Capacity Manual's MMLOS methodology. Table A. 1 shows the considerations for BLOS. Table A. 2 shows the considerations for PLOS

Table A. 1: BLOS Factors

Factors	Effect on Level of Service (LOS)
Parking Occupancy	Increased parking decreased the LOS
Vehicle speed	Increased speed decreases the LOS
Midsegment vehicle flow rate (vehicles/hour)	Increased vehicle volumes decreased the LOS
Number of through lanes in direction of travel	Multiple through lanes increases the LOS
Lane width	Wider travel lanes have a higher LOS
Parking lane width	Wider parking lanes can have a higher LOS
Presence of curbs	When curbs are present the LOS decreases
% heavy vehicles	Increased volumes of heavy vehicles decreases the LOS
Pavement condition rating	Poor pavement condition decreases the LOS
Street divided	When the street is divided the LOS decreases

Table A. 2: PLOS Factors

Factors	Effect on Level of Service (LOS)
Vehicle speed	Increased speed decreases the LOS
Midsegment vehicle flow rate (vehicles/hour)	Increased vehicle volumes decreased the LOS
Number of through lanes in direction of travel	Multiple through lanes increases the LOS
Lane width	Wider travel lanes have a higher LOS
Parking lane width	Wider parking lanes can have a higher LOS
Parking Occupancy	Increased parking decreased the LOS
% heavy vehicles	Increased volumes of heavy vehicles decreases the LOS
Buffer Width between roadway and sidewalk	increased buffer width increases the LOS
Presence of a barrier in the buffer	Having trees, bollards, etc. increases the LOS
Sidewalk width	wider sidewalks increase LOS

The grading for BLOS and PLOS can be seen in Table A. 3.

Table A. 3: Level of Service Grading

Grade	Score
A	$x < 2.00$
B	$2.00 < x < 2.75$
C	$2.75 < x < 3.50$
D	$3.50 < x < 4.25$
E	$4.25 < x < 5.00$
F	$x > 5.00$

Appendix B: Engagement Summary



Victoria Avenue Bikeway

What We Heard
March 15, 2021



Executive Summary

The City of Saskatoon is committed to promoting active transportation and providing transportation choices that are safe and comfortable for people of all ages and abilities year round.

Saskatoon's Active Transportation Plan (2016) identified Victoria Avenue as a future all ages and abilities (AAA) cycling route. Victoria Avenue provides an important connection to existing and future walking and cycling facilities.

Two phases of public engagement were conducted as part of the evaluation and design process for cycling facilities on Victoria Avenue between 8th Street East and Taylor Street.

Phase 1

The objectives of the first phase of engagement, conducted in March 2020, were:

- present general information to the public regarding active transportation and neighbourhood bikeways;
- provide participants an opportunity to discuss concerns, considerations and possible improvements regarding all forms of transportation in their area; and
- to help inform the neighbourhood bikeway designs that will be specifically tailored for each corridor's transportation needs.

An open house was held in the evening of March 11 at the Queen Elizabeth School and had 22 attendees. An online public survey was open for responses from March 5 through March 23 and received 87 responses.

Participants in both the survey and open house were asked what they would like to see the same and what they would want to see improved for Victoria Avenue between 8th Street East and Taylor Street.

Common themes from the open house comments included:

- Narrow the centre median to make space for both a parking lane and a bike lane or raised cycle track;
- It is more important to keep the mature boulevard trees than the younger median trees; and
- Improvements are needed to the intersection of 8th Street East and Victoria Avenue so that cyclists can be detected and have a smoother transition between cycling facilities.

Common themes from the survey responses included:

- interest in maintaining the trees and boulevard;
- appreciation for the existing cycling facilities on Victoria Avenue between 8th Street East and the river, though some had suggestions for improvements to the infrastructure;
- some wanted to see the cycling facilities continue further south than Taylor Street; and
- some wish to see traffic calming measures put in place.

This public input helped inform the five neighbourhood bikeway design options presented in Phase 2.

Phase 2

Due to public health orders related to the COVID-19 pandemic, all public engagement was conducted virtually.

In Phase 2, five design options for a neighbourhood bikeway on Victoria Avenue between 8th Street East and Taylor Street were presented, including the following implications:

- estimated cost;
- location of bike lanes in relation to sidewalks, curbs, and driving lanes;
- raised or protected street-level bike lanes;
- wider bidirectional lane or separate unidirectional lanes;
- impacts to on-street parking;
- impacts to the median and trees.

The objective of this phase of engagement was to gauge public support for these design options from local residents, as well as other key stakeholders.

An online meeting held through Microsoft Teams on the evening of December 9, 2020 and had 20 live viewers. As of February 11, 2021, there have been an additional 118 viewers of the [meeting recording](#) that was uploaded to YouTube. An online public survey received responses from December 9, 2020 to January 11, 2021 and received 215 responses. In addition, 48 emails were received by Administration to provide feedback.

Respondents to the survey were presented the five design options and asked to indicate if they strongly support, moderately support, mildly support, or do not support each option. Option 5 had the strongest level of support among the five options with 36% indicating they strongly support that option. Option 5 was also the only option in which fewer than half (35%) of respondents indicated they do not support the option. Respondents were also asked if they had a favourite option among the five design options. Option 5 was selected as the favourite (32%) most often compared to the other options.

Respondents were also asked to provide their comments. Below are the most common themes provided.

opposition to any loss of on-street parking

The most common reason provided for opposing a bikeway on Victoria Avenue were concerns with loss of on-street parking. The following are more specific sub-themes of comments on parking: Infill in the area has already made parking more congested on Victoria Avenue and side streets; on-street parking is the only available parking for some; accessibility concerns for those with disabilities; back alley parking is not feasible / safe for all residents; on-street parking is needed for visitors, deliveries, emergency vehicles, contractors, etc.; concerns of impacts to resale value; taxpayers should not have their on-street parking removed.

opposition to the removal of trees

Unlike with concerns regarding on-street parking, which were most often expressed by local residents who also oppose a bikeway on Victoria Avenue, those who expressed concerns with tree removal came from both supporters and non-supporters of a bikeway.

alternative bikeway routes suggested

There were several suggestions for nearby roadways to be considered for a bikeway instead of Victoria Avenue, such as Eastlake Avenue, Melrose Avenue, and McPherson Avenue. Rationale for considering these instead include these streets being wider corridors to work with, as well as lower vehicle traffic to contend with.

too costly / should not be a priority / not an issue

Several respondents expressed frustration with the City spending money on and prioritizing bike lanes. Some also expressed frustration that 2020 road construction that occurred on Victoria Avenue will be ripped up for this project. Others feel that cycling on Victoria Avenue is not a concern so this project is unnecessary.

Victoria Avenue an important connection in the AAA cycling network

Some comments expressed support for a continuation of the cycling network that currently stops at Victoria Avenue and 8th Street to continue on Victoria Avenue.

various preferences among those who support a bikeway

Those who support a bikeway on Victoria Avenue provided a variety of preferences for the infrastructure (e.g., raised bike lanes vs street-level; one bi-directional lane vs two uni-directional bike lanes).

improve communication on engagements

Several respondents indicated they want the City to do a better job providing information to those residents and homeowners who would be impacted, as well as providing notice for engagement opportunities.

Contents

Executive Summary	2
Contents	5
List of Tables	6
1 Background.....	7
2 Stakeholder Groups	7
2.1.1 Local Residents / Homeowners	7
2.1.2 Cyclists	7
3 Engagement Activities.....	7
4 Data Limitations	8
5 What We Heard	8
5.1 Phase 1: Public Open House	8
5.1.1 Purpose	8
5.1.2 Marketing Techniques.....	8
5.1.3 Input Received.....	9
5.2 Phase 1: Online Survey	10
5.2.1 Purpose	10
5.2.2 Marketing Techniques.....	10
5.2.3 Input Received.....	10
5.3 Phase 2: Five Design Options.....	10
5.4 Phase 2: Online Public Meeting	13
5.4.1 Purpose	13
5.4.2 Marketing Techniques.....	13
5.4.3 Input Received.....	13
5.5 Phase 2: Online Survey	14
5.5.1 Purpose	14
5.5.2 Marketing Techniques.....	14
5.5.3 Input Received.....	14
5.6 Phase 2: Emails Received	16
5.6.1 Input Received.....	16

List of Tables

Table 1: Summary of Engagement Strategy.....	7
Table 2: Level of Support.....	13
Table 3: Favourite Among Design Options.....	13

1 Background

The City of Saskatoon is committed to promoting active transportation and providing transportation choices that are safe and comfortable for people of all ages and abilities year round.

Saskatoon's Active Transportation Plan (2016) identified Victoria Avenue as a future all ages and abilities (AAA) cycling route. Victoria Avenue provides an important connection to existing and future walking and cycling facilities.

2 Stakeholder Groups

Two stakeholders were identified with potential to be impacted by the construction of a neighbourhood bikeway on Victoria Avenue. These groups include:

2.1.1 Local Residents / Homeowners

- Those who live or own property on or near Victoria Avenue between 8th Street East and Taylor Street.

2.1.2 Cyclists

- Those who have shown interest in a AAA Cycling Network in Saskatoon.

3 Engagement Activities

Individual stakeholder meetings and two online surveys – one for industry members and one for the general public - were used to collect feedback to inform the development of the PACE Financing Draft Program Options.

The general public were able to provide input through the City of Saskatoon Engage page forum, or contact the Project Manager directly via email, mail, or telephone.

Table 1: Summary of Engagement Activities

Stakeholder	Level of Influence	Objective	Engagement Goal	Engagement Activity
All stakeholders	Consult	Gain input.	Phase 1: Receive input on what people want to see stay the same and what people want to see improved re: cycling, walking and driving on Victoria Avenue.	Public open house Online survey
All stakeholders	Consult	Obtain feedback.	Phase 2: Present five potential options for adding AAA cycling facilities to Victoria Avenue, including implications of each. Determine a preference among options.	Online public meeting Online survey

4 Data Limitations

Phase 1 of public engagement occurred in March 2020, around the same time as the first case of COVID-19 was detected in Saskatchewan. This may have impacted the amount of attention and participation Saskatoon residents were giving to public engagement on City projects.

Due to the public health orders related to the COVID-19 pandemic, all Phase 2 engagement activities were conducted virtually. Multiple avenues were available to the public for providing input to help mitigate potential issues of inclusivity due to the inability to conduct in-person activities, including an online meeting, and online survey, and a chat forum on the project's [Engage page](#). However, engagement practises and procedures were limited due to the pandemic, especially in conducting physical meetings with individual stakeholders.

5 What We Heard

5.1 Phase 1: Public Open House

5.1.1 Purpose

The purpose of the Phase 1: Public Open House was to:

- present general information to the public regarding active transportation and neighbourhood bikeways;
- discuss existing conditions, issues, and opportunities for each corridor (including Victoria Avenue) included in the Neighbourhood Bikeways Project;
- discuss considerations and possible improvements for all modes of transportation for each corridor; and
- help inform design elements for each corridor's transportation needs.

The display boards at the open house included the following specific questions for each corridor:

- What would you like to see stay the same?
- What would you like to see improved?

5.1.2 Marketing Techniques

Stakeholders were informed of the public house and online survey.

Techniques included:

- Flyers were delivered to all residences and businesses with 150 metres on each side of the study corridor.
- The Buena Vista Community Association was informed of the open house.
- Information on the open house was posted on the project's Engage page.
- A portable billboard was placed along the study corridor advertising the open house.
- The open house was promoted on City of Saskatoon social media pages.
- Nearby schools were informed

- Other key stakeholders were contacted to inform them of the open houses and were also provided contact information for the City Project Lead to submit comments. Key stakeholders were also encouraged to share this information to their group memberships. These stakeholder groups included:
 - Saskatoon Cycles
 - Walking Saskatoon
 - Tourism Saskatoon
 - Saskatoon Council on Aging
 - Bus Riders of Saskatoon
 - Saskatoon Health Authority

5.1.3 Input Received

There were 22 attendees at the open house for Victoria Avenue.

Input received at the open house included suggestions to narrow the centre median along Victoria Avenue to make room for a protected bike lane and to maintain parking along the corridor. Residents felt that the mature trees along the boulevard were more important than the younger trees in the centre median. Residents noted that they were very happy with the raised cycle track along Victoria Avenue north of 8th Street.

Residents were asked to respond to two questions:

1. What would you like to see stay the same?
 - Keep the trees.
2. What would you like to see improved?
 - Continuation of raised cycle track.
 - Drainage and ponding along the median.
 - Better lighting.
 - Narrow centre median to make room for a protected facility.
 - Uneven sidewalks.
 - Potholes/pavement quality
 - Curb extensions are difficult to navigate as a cyclist.
 - 40km/h speed limit.
 - Cycle track through the centre median.
 - At the intersection of Victoria Avenue and 8th Street East vehicles cut across the curb extensions when making right turns.
 - More permeable surfaces.
 - Consider using Eastlake Avenue instead of Victoria Avenue.
 - Install cyclist detection at Victoria Avenue and 8th Street East, and Victoria Avenue and Taylor Street East.
 - More cyclist and driver education such as passing rules, and that bikes are vehicles.
 - Promote cycling guide.

5.2 Phase 1: Online Survey

5.2.1 Purpose

The purpose of the online survey was to give interested members of the public an opportunity to provide their concerns, considerations and possible improvements regarding all forms of transportation on the corridors under consideration in the Neighbourhood Bikeways Project (including Victoria Avenue). Input was being collected to help inform neighbourhood bikeway designs specifically tailored for each corridor's transportation needs.

Respondents were asked how often they utilize each corridor being considered for the study (often, sometimes, rarely, or never). Like in the open house, respondents were asked the following specific questions for each corridor:

- What would you like to see stay the same?
- What would you like to see improved?

5.2.2 Marketing Techniques

A link to the online survey was provided in all flyers and City of Saskatoon social media pages. The link was also available on the project's Engage page.

5.2.3 Input Received

The survey was open for responses from March 5 through March 23 and received 87 responses.

Of those 87 respondents, 37 often utilize Victoria Avenue between 8th Street East and Taylor Street, 32 sometimes utilize this corridor, 15 rarely utilize this corridor, and 2 never utilize this corridor (1 respondent skipped this question).

Common themes from the survey responses related to Victoria Avenue included:

- interest in maintaining the trees and boulevard;
- appreciation for the existing cycling facilities on Victoria Avenue between 8th Street East and the river, though some had suggestions for improvements to the infrastructure;
- some wanted to see the cycling facilities continue further south than Taylor Street; and
- some wish to see traffic calming measures put in place.

5.3 Phase 2: Five Design Options

Five design options for adding all ages and abilities (AAA) cycling facilities to Victoria Avenue between 8th Street East and Taylor Street were developed based on community input received in Phase 1. The graphic below presents the five options and was used to help communicate the implications of each option to local residences and businesses, and other stakeholders.

Implications presented in the graphic include:

- estimated cost;
- location of bike lanes in relation to sidewalks, curbs, and driving lanes;
- raised or protected street-level bike lanes;

- wider bidirectional lane or separate unidirectional lanes;
- impacts to on-street parking;
- impacts to the median and trees.

The objective of this phase of engagement was to gauge preferences and support for these five design options from local residents, as well as other key stakeholders.

Victoria Avenue Bikeway

8TH STREET TO TAYLOR STREET

\$ = Approximately \$1 Million

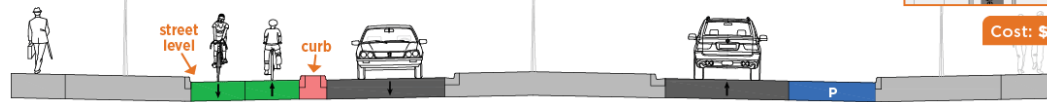
Existing



Option 1

Bidirectional Bike Lane (west side)

Parking maintained on east side



Option 2

Protected Street-Level Bike Lanes

All parking removed.



Option 3

Raised Bike Lanes

All parking removed.



Option 4

Protected Street-Level Bike Lanes

On-street parking maintained from 7th St to Taylor St.



Option 5

Raised Bike Lanes

On-street parking maintained from 7th St to Taylor St.



5.4 Phase 2: Online Public Meeting

5.4.1 Purpose

The online public meeting was held on the evening of December 9, 2020 and was hosted on Microsoft Teams Live.

The meeting included an opening presentation by the project team that included background information on the Neighbourhood Bikeways Project, an overview of Victoria Avenue, and information on the five design options.

Following the presentation, the project team responded to questions and comments submitted by attendees through the meeting's chat function.

5.4.2 Marketing Techniques

Stakeholders were informed of the public house and online survey.

Techniques included:

- Flyers were delivered to all residences and businesses with 150 metres on each side of the study corridor.
- The Buena Vista Community Association was informed of the open house.
- Information on the open house was posted on the project's Engage page.
- A portable billboard was placed along the study corridor advertising the open house.
- Nearby schools were informed

Other key stakeholders were contacted to inform them of the open houses and were also provided contact information for the City Project Lead to submit comments. Key stakeholders were also encouraged to share this information to their group memberships. These stakeholder groups included:

- Saskatoon Cycles
- Walking Saskatoon
- Tourism Saskatoon
- Saskatoon Council on Aging
- Bus Riders of Saskatoon
- Saskatoon Health Authority

5.4.3 Input Received

The online public meeting had 20 live viewers. As of February 11, 2021, there have been an additional 118 views of the [meeting recording](#) that was uploaded to YouTube.

There were several questions raised during the online meeting, including:

- Why Victoria Avenue was chosen for this project instead of Eastlake Avenue or Melrose Avenue, which have lower traffic volumes;

- Why construction of a cycling facility along Victoria Avenue did not occur with the asset preservation work that was completed in 2020;
- Why the two raised cycle track options scored so low on the evaluation table;
- How Option 1 – Bidirectional bike lanes (west side) would integrate with the existing facility along Victoria Avenue north of 8th Street East; and
- What are the next steps for this project?

During the online meeting, several residents expressed concerns over the potential loss of on-street parking along Victoria Avenue.

5.5 Phase 2: Online Survey

5.5.1 Purpose

Respondents were presented the graphic displaying the impacts of each of the five design options for adding all ages and abilities (AAA) cycling facilities to Victoria Avenue between 8th Street East and Taylor Street.

Respondents were asked to indicate their level of support for each option (strongly support, moderately support, mildly support, do not support, or not sure/no opinion). Respondents were also asked if they had a favourite among the five options. Respondents also had opportunity to provide comments on the options, about a bikeway on Victoria Avenue in general, and evaluations of the virtual engagement process.

5.5.2 Marketing Techniques

The link to the online survey was available on the project’s Engage page. Participants at the online meeting were also encouraged to fill out the survey.

5.5.3 Input Received

The online public survey received responses from December 9, 2020 to January 11, 2021 and received 215 responses.

Respondents to the survey were presented the five design options and asked to indicate if they strongly support, moderately support, mildly support, or do not support each option.

Table 2: Level of Support

	Strongly support		Moderately support		Mildly support		Do not support		Total #
	#	%	#	%	#	%	#	%	
Option 1	47	23	18	9	24	12	116	57	205
Option 2	45	22	22	11	15	7	123	60	205
Option 3	22	11	24	12	34	17	124	61	204
Option 4	27	13	35	17	25	12	117	57	204
Option 5	74	36	19	9	40	19	73	35	206

Option 5 had the strongest level of support among the five options with 36% indicating they strongly support that option. Option 5 was also the only option in which fewer than half (35%) of respondents indicated they do not support the option.

Respondents were also asked if they had a favourite option among the five design options. Responses are presented below in descending order of preference among respondents.

Table 3: Favourite Among Design Options

	#	%
Option 5	67	32
Option 1	46	22
Option 2	33	16
No favourite	30	14
Option 4	22	10
Option 3	13	6
Total	211	100

Respondents were also asked to provide their comments. Below are the most common themes provided.

opposition to any loss of on-street parking

The most common reason provided for opposing a bikeway on Victoria Avenue were concerns with loss of on-street parking. The following are more specific sub-themes of comments on parking: Infill in the area has already made parking more congested on Victoria Avenue and side streets; on-street parking is the only available parking for some; accessibility concerns for those with disabilities; back alley parking is not feasible / safe for all residents; on-street parking is needed for visitors, deliveries, emergency vehicles, contractors, etc.; concerns of impacts to resell value; taxpayers should not have their on-street parking removed.

opposition to the removal of trees

Unlike with concerns regarding on-street parking, which were most often expressed by local residents who also oppose a bikeway on Victoria Avenue, those who expressed concerns with tree removal came from both supporters and non-supporters of a bikeway.

alternative bikeway routes suggested

There were several suggestions for nearby roadways to be considered for a bikeway instead of Victoria Avenue, such as Eastlake Avenue, Melrose Avenue, and McPherson Avenue. Rationale for considering these instead include these streets being wider corridors to work with, as well as lower vehicle traffic to contend with.

too costly / should not be a priority / not an issue

Several respondents expressed frustration with the City spending money on and prioritizing bike lanes. Some also expressed frustration that 2020 road construction that occurred on Victoria Avenue will be ripped up for this project. Others feel that cycling on Victoria Avenue is not a concern so this project is unnecessary.

Victoria Avenue an important connection in the AAA cycling network

Some comments expressed support for a continuation of the cycling network that currently stops at Victoria Avenue and 8th Street to continue on Victoria Avenue.

various preferences among those who support a bikeway

Those who support a bikeway on Victoria Avenue provided a variety of preferences for the infrastructure (e.g., raised bike lanes vs street-level; one bi-directional lane vs two uni-directional bike lanes).

improve communication on engagements

Several respondents indicated they want the City to do a better job providing information to those residents and homeowners who would be impacted, as well as providing notice for engagement opportunities.

5.6 Phase 2: Emails and Phone Calls Received

Administrations received emails and phone calls from 48 residents to provide feedback on the potential for a bikeway on Victoria Avenue.

5.6.1 Input Received

The most common themes heard through emails and phone calls are provided below.

opposition to any loss of on-street parking

The most common reason provided for opposing a bikeway on Victoria Avenue were concerns with loss of on-street parking. The following are more specific sub-themes of comments on parking: Infill in the area has already made parking more congested on Victoria Avenue and side streets; on-street parking is the only available parking for some; accessibility concerns for those with disabilities; back alley parking is not feasible / safe for all residents; on-street parking is needed for visitors, deliveries, emergency vehicles, contractors, etc.; concerns of impacts to resell value; taxpayers should not have their on-street parking removed.

alternative bikeway routes suggested

There were several suggestions for nearby roadways to be considered for a bikeway instead of Victoria Avenue, such as Eastlake Avenue, Melrose Avenue, and McPherson Avenue. Rationale for considering these instead include these streets being wider corridors to work with, as well as lower vehicle traffic to contend with.

Victoria Avenue an important connection in the AAA cycling network

Some comments expressed support for a continuation of the cycling network that currently stops at Victoria Avenue and 8th Street to continue on Victoria Avenue.

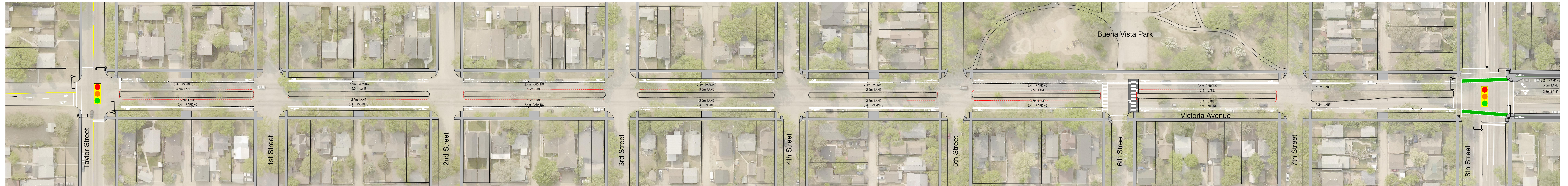
too costly / should not be a priority / not an issue

Several respondents expressed frustration with the City spending money on and prioritizing bike lanes. Some also expressed frustration that 2020 road construction that occurred on Victoria Avenue will be ripped up for this project. Others feel that cycling on Victoria Avenue is not a concern so this project is unnecessary.

improve communication on engagements

Several respondents indicated they want the City to do a better job providing information to those residents and homeowners who would be impacted, as well as providing notice for engagement opportunities.

Appendix C: Victoria Avenue Recommended Design



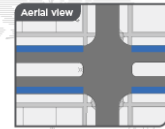
Victoria Avenue Bikeway Options

Victoria Avenue Bikeway

8TH STREET TO TAYLOR STREET

\$ = Approximately \$1 Million

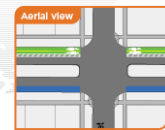
Existing



Option 1

Bidirectional Bike Lane (west side)

Parking maintained on east side

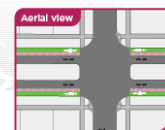


Cost: \$

Option 2

Protected Street-Level Bike Lanes

All parking removed.

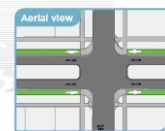
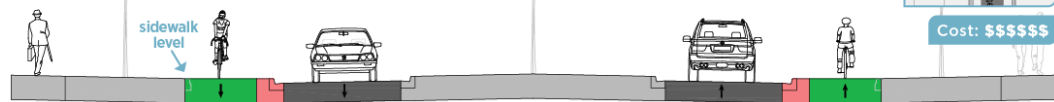


Cost: \$

Option 3

Raised Bike Lanes

All parking removed.

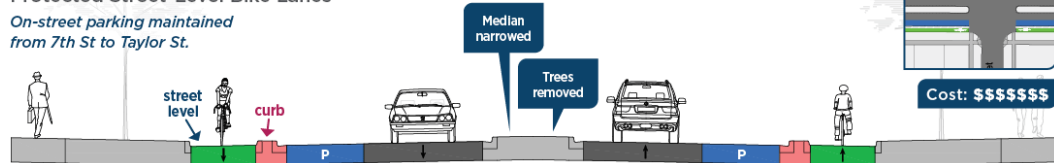


Cost: \$\$\$\$\$

Option 4

Protected Street-Level Bike Lanes

On-street parking maintained from 7th St to Taylor St.

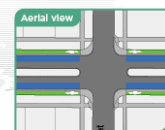
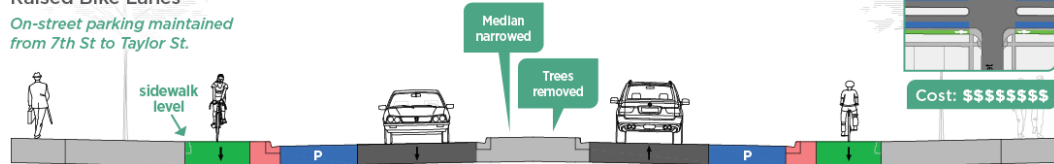


Cost: \$\$\$\$\$\$

Option 5

Raised Bike Lanes

On-street parking maintained from 7th St to Taylor St.



Cost: \$\$\$\$\$\$

Option 1 (Bidirectional Bike Lane, West Side)

Option 1 – Bidirectional Bike Lane (west side) provides a 3 m wide bidirectional cycling facility on the west side of Victoria Avenue.

Advantages:

- AAA cycling facility is provided;
- All on-street parking on the east side of Victoria Avenue is maintained; and
- Centre median trees are maintained.

Disadvantages:

- Two-stage crossing at Victoria Avenue and 8th Street East, and Victoria Avenue and Taylor Street East required for cyclists to access the facility; and
- All on-street parking on the west side of Victoria Avenue is removed between 8th Street and Taylor Street.

Option 2 (Protected Street-Level Bike Lanes without Parking)

Option 2 – protected street-level bike lanes provide a 1.8 m bike lane on either side of Victoria Avenue from 8th Street to Taylor Street.

Advantages:

- Protected unidirectional bike lanes allow for wide bike lanes and adequate separation from vehicular traffic to provide a comfortable AAA facility;
- Cyclists need to cross the major crossings in one direction only resulting in less delay and reducing potential conflicts with vehicular traffic; and
- Centre median trees are maintained.

Disadvantages:

- All on-street parking on Victoria Avenue is removed between 8th Street and Taylor Street.

Option 3 (Raised Bike Lanes without Parking)

Option 3 – raised bike lanes without parking provide a 1.8 m wide raised cycle track on either side of Victoria Avenue.

Advantages:

- Raised cycle track has adequate space for cyclist and comfortable separation from vehicular traffic to provide AAA cycling facility;
- Cyclists need to cross the major crossings in one direction only resulting in less delay and reducing potential conflicts with vehicular traffic; and
- Centre median trees are maintained.

Disadvantages:

- All on-street parking on Victoria Avenue is removed between 8th Street at Taylor Street; and
- Frequent ramping up and down at side streets and driveways may be uncomfortable for cyclists.

Option 4 (Protected Street-Level Bike Lanes with Parking)

Option 4 – protected street-level bike lanes with parking provide a 1.8 m bike lane on either side of Victoria Avenue, the centre median is narrowed to allow the parking lane to be maintained between 7th Street and Taylor Street. Between 8th Street and 7th Street the centre median is not narrowed resulting in the removal of parking along the sides of houses. Narrowing the median is not possible due to the existing northbound left turn lane.

Advantages:

- Protected unidirectional bike lanes have sufficient space for cyclists and adequate separation from vehicular traffic to provide an AAA facility;
- Cyclists need to cross the major crossings in one direction only resulting in less delay and reducing potential conflicts with vehicular traffic; and
- On-street parking on Victoria Avenue is maintained between 7th Street and Taylor Street.

Disadvantages:

- On-street parking on Victoria Avenue is removed between 7th Street and 8th Street; and
- Median trees are removed.

Option 5 (Raised Bike Lanes with Parking)

Option 5 – raised bike lanes with parking provide a 1.8 m raised cycle track on either side of Victoria Avenue, the centre median is narrowed to allow the parking lane from 7th Street to Taylor Street to be maintained. Between 8th Street and 7th Street the centre median is not narrowed resulting in the removal of parking along the sides of houses. Narrowing the median is not possible due to the existing northbound left turn lane.

Advantages:

- Raised cycle track has sufficient space for cyclist and comfortable separation from vehicular traffic to provide an AAA cycling facility;
- Cyclists need to cross the major crossings in one direction only resulting in less delay and reducing potential conflicts with vehicular traffic; and
- On-street parking on Victoria Avenue is maintained between 7th Street and Taylor Street.

Disadvantages:

- On-street parking on Victoria Avenue is removed between 7th Street and 8th Street;
- Median trees are removed; and
- Frequent ramping up and down at side streets and driveways may be uncomfortable for cyclists.

Option 6 (Do Nothing)

Option 6 – do nothing does not involve improvements for cyclists on Victoria Avenue from 8th Street East to Taylor Street East. Cyclists would still be allowed to ride in-street.

Advantages:

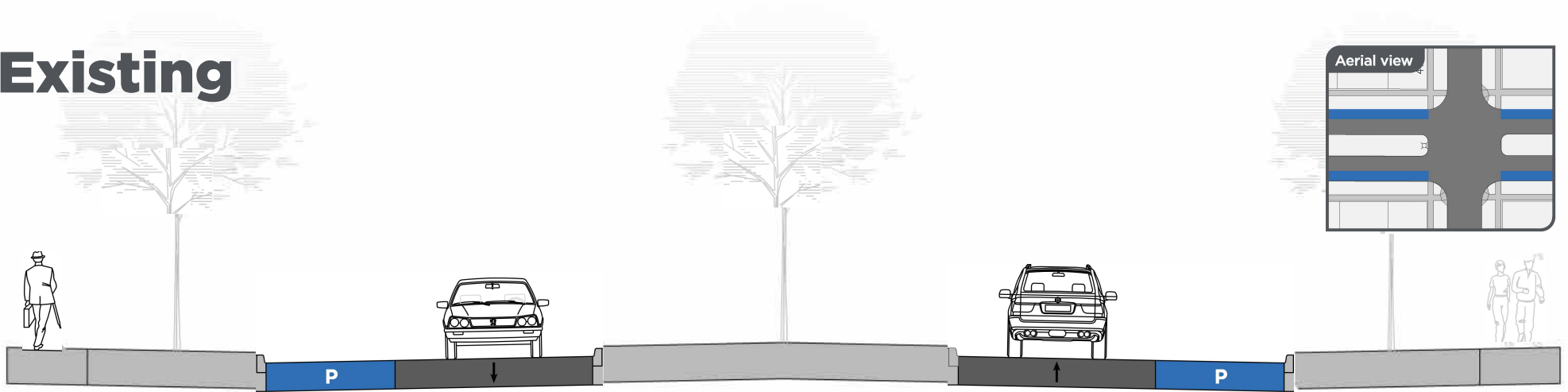
- All on-street parking on Victoria Avenue is maintained between 8th Street and Taylor Street; and
- Centre median trees are maintained.

Disadvantages:

- Does not provide an AAA cycling facility.

Victoria Avenue Bikeway Recommended Design

Existing



Option 4

Protected Street-Level Bike Lanes

On-street parking maintained from 7th St to Taylor St.

