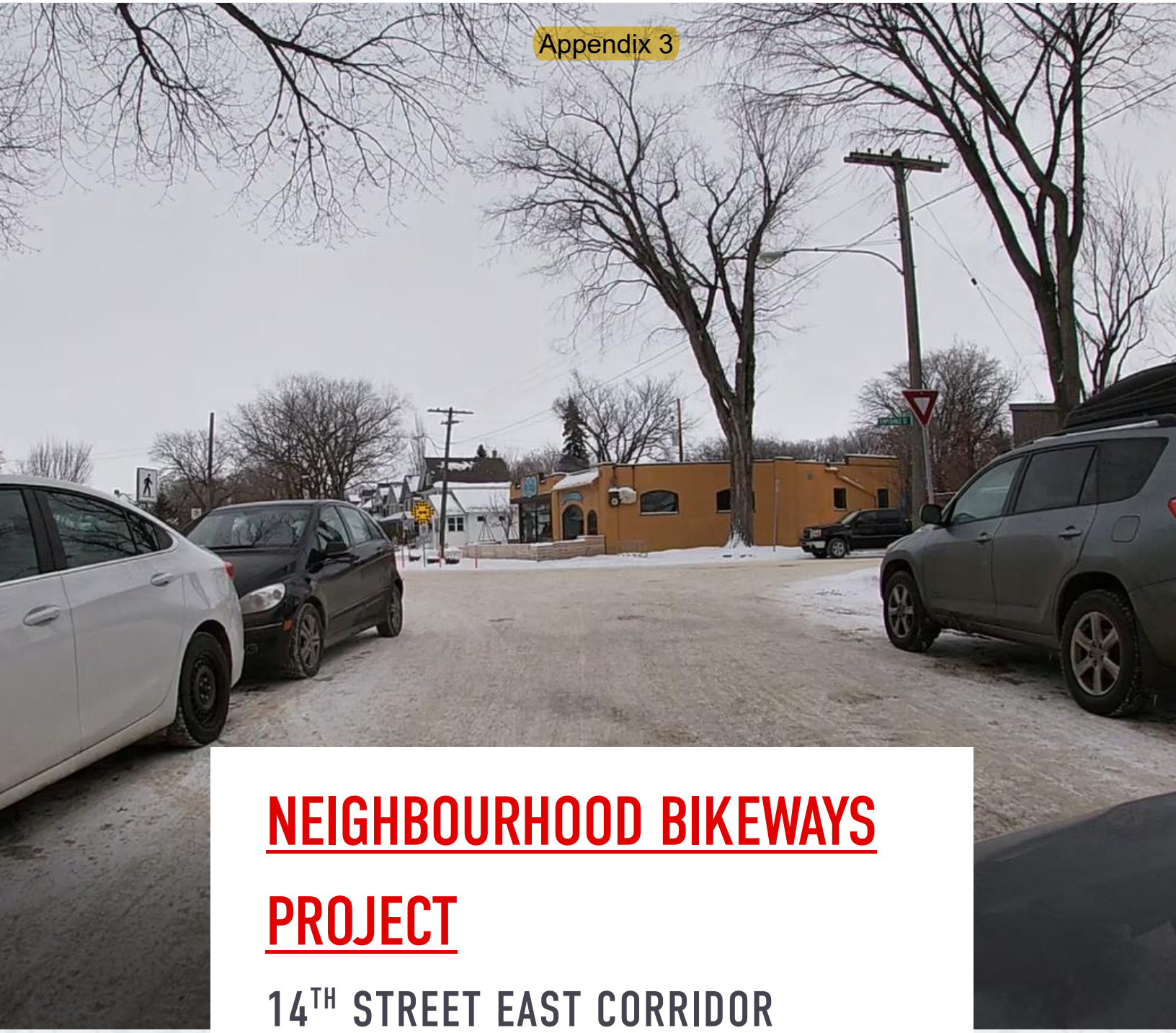
Appendix 3



NEIGHBOURHOOD BIKEWAYS PROJECT

14TH STREET EAST CORRIDOR

November 10, 2020

City of Saskatoon

URBAN SYSTEMS

PREPARED FOR:

City of Saskatoon

222 3rd Avenue North

Saskatoon, SK S7K 0J5

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File: 3257.0009.01

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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 this Neighbourhood Bikeways Project to develop conceptual designs for active transportation facilities on the following four corridors:

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

In addition to these four corridors, the City is also conducting a separate study for improvements on Victoria Avenue from 8th Street East to Taylor Street East. These corridors have been selected for review because they provide important connections to existing or future walking and cycling facilities or were identified in the AT Plan. 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.

These corridors were identified as high priorities due to 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 Trail network, and destination areas in the vicinity of Idylwyld Drive and the Central Business District (CBD). 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.

This report summarizes the existing conditions and recommended concept for the **14th Street East Street** 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 other 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 October 2020, as shown in **Figure 1.**

Figure 1. Study Process

1.3 REPORT OVERVIEW

This report summarizes the overall study process and recommendations for the 14th Street East 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 – Recommended Design** summarizes the key features of the recommended conceptual design;
- **Section 5 – Phase 2 Engagement Summary** provides an overview of the Phase 2 Engagement process and input received; and
- **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 14th Street East 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, traffic operational analysis, 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; and
- **Collisions,** including a review of collision data between 2014 and 2018.

2.1 ROUTE CONTEXT

2.1.1 ROUTE DESCRIPTION AND NEIGHBOURHOOD CONTEXT

The 14th Street East corridor extends 10 blocks for approximately 1.4 kilometres between Saskatchewan Crescent East in the west and Cumberland Avenue South in the east. The 14th Street East corridor passes through the neighbourhoods of Varsity View and Nutana, which are core Saskatoon neighbourhoods near the University of Saskatchewan, the CBD, Broadway shopping district, and Meewasin Trail. Both ends of this corridor have the potential to link to existing multi-use pathways to further expand the active transportation network.

2.1.2 ADJACENT LAND USES

The 14th Street East corridor passes through primarily residential areas in central portions of Varsity View and Nutana. The corridor largely features single family residential development, but also passes through the higher density residential corridor along Clarence Avenue South and some isolated pockets of multi-family residential and commercial land uses. The western end of this corridor terminates on the Meewasin Trail, two blocks from the Broadway Bridge and the commercial, shopping, and entertainment corridor along Broadway Avenue. The Meewasin Trail and Broadway Bridge provide easy access to the CBD and broader trail network in the South Saskatchewan river valley. The eastern end of this corridor meets the University of Saskatchewan's South Management Area with several nearby student housing towers and dormitories. There is also an existing multi-use pathway on the north side of 14th Street East east of Cumberland Avenue South which provides access to the neighbourhoods of Grosvenor Park, Greystone Heights, and College Park to the east. **Figure 2** shows the adjacent land uses to the 14th Street East corridor.

Figure 2. 14th Street East: Adjacent Land Uses

2.1.3 NEARBY INFRASTRUCTURE AND DESTINATIONS

The following notable destinations and infrastructure have been identified near the 14th Street East corridor:

- **Several parks**, including:
  - Cosmopolitan Park
  - Meewasin Trail
  - Nutana Park
  - Albert Recreational Unit Park
  - Alberta Park
  - President Murray Park
  - Green space on University Lands
- **University of Saskatchewan South Management Lands;**
- **Broadway Commercial Corridor,** which includes several commercial, educational, and entertainment destinations;
- **Multi-use paths** in the Meewasin Trail to the west of the corridor study area and along 14th Street East to the east of the corridor study area; and
- **Broadway Bridge** within two blocks of western end with access to CBD.

2.2 BACKGROUND INFORMATION

2.2.1 ACTIVE TRANSPORTATION PLAN

The AT Plan contains the following information relevant to the 14th Street East corridor:

- The 14th Street East corridor was identified as a proposed AAA bicycle route for its entire length. This route is shown to tie into the existing network at 14th Street East to the east of the corridor study area and along the Meewasin trail to the west of the corridor study.
- The ATP 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 14th Street East corridor as having a Level of Traffic Stress (LTS) of 2 for its entire length. This value indicates that adults will tolerate vehicle traffic, but the route is still unsuitable for children.

The AT Plan identified the eastern half of the corridor in Varsity View as having a moderate equity need for additional active transportation infrastructure. The western half of the corridor in Nutana is identified as having a low equity need. This indicates that the Varsity View portion of this work should be a higher priority than the Nutana portions. This corridor has the lowest equity need for active transportation infrastructure of the five examined in this study.

2.2.2 LOCAL AREA PLANS

The LAPs for Varsity View and Nutana are relevant to this corridor. The 2001 Nutana LAP has no considerations for cycling or active transportation. This may reflect the age of this document compared to more recent LAPs.

Some key findings from the 2014 Varsity View LAP which are relevant to this corridor study are as follows:

- The LAP identified improving pedestrian and cycling connectivity as a goal of the LAP. However, this goal is targeted towards north-south routes by increasing connections to the Royal University Hospital and the University of Saskatchewan.
- Coordination with future development in College Quarter directly east of Varsity View is a high priority. This could have implications for the eastern end of this corridor as it connects to future development of University Lands and the existing multi-use pathway on the north side of 14th Street East.
- The LAP identifies that snow and ice clearing on cycling routes should be prioritized.
- The LAP has an entire section of recommendations focused on active transportation, including the following goals:

    - Varsity View should serve as a model community for safe cycling and walking for all ages to enjoy.
    - Promoting walkability and cycling within the neighbourhood through infrastructure improvements and programs.
    - Creating primary routes and corridors for walking and cycling throughout the neighbourhood (east to west and north to south).
    - Developing a network of cycling and walking routes that are continuous and connected to the rest of the city.
    - Ensuring that safety is secured for all users.
- The LAP identified concerns for the 14th Street East corridor including a heavy presence of parked cars and traffic speeds which may be acting as a deterrent for cyclists.
- The LAP identifies Wiggins as a key north-south route which intersects the 14th Street East corridor.

2.2.3 NEIGHBOURHOOD TRAFFIC REVIEW

The NTRs for Nutana and Varsity View are relevant for this project. Through the NTR process, residents identified several concerns, including:

Varsity View (2015):

- Recommendation for enhanced pedestrian crossing features at 14th Street East and Clarence Avenue South (completed);
- Residents expressed concerns regarding alternating yield signs and how they hinder cyclist connectivity;
- 14th Street East was identified as a potential dedicated cycling route by residents;
- Residents expressed concerns regarding pedestrian crossing safety at Clarence Avenue South due to high traffic speeds on Clarence Avenue South and poor sight-lines between pedestrians and oncoming cross-traffic; and
- Residents expressed concerns regarding pedestrian safety at the 4-way stop at 14th Street East and Wiggins Avenue South.

Nutana (2015)

- Residents expressed concerns with the safety of the crossing at 14th Street East and Clarence Avenue South;
- Bicycle lanes were suggested by residents on 12th Street East;
- Residents suggested developing a neighbourhood cycling plan that considers all ages of cyclists;
- Residents expressed concerns with pedestrian safety at 14th Street East between Lansdowne Avenue and Temperance Street. This portion of 14th Street East has since been closed to motorized traffic but is still passable for cyclists. Several new stop and yield signs were also added to the area to address these concerns; and
- Residents expressed concerns for pedestrian safety at the intersection of Albert Avenue and 14th 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 Meewasin Trail to provide access to the CBD.

2.3 ROAD NETWORK CHARACTERISTICS

2.3.1 ROADWAY CROSS-SECTION

Figure 3 to **Figure 5** depict the general cross sections through the corridor. 14th Street East accommodates motor vehicle traffic in both directions as well as parking on both sides of the street.

Figure 3. 14th Street East: Saskatchewan Crescent to Albert Avenue

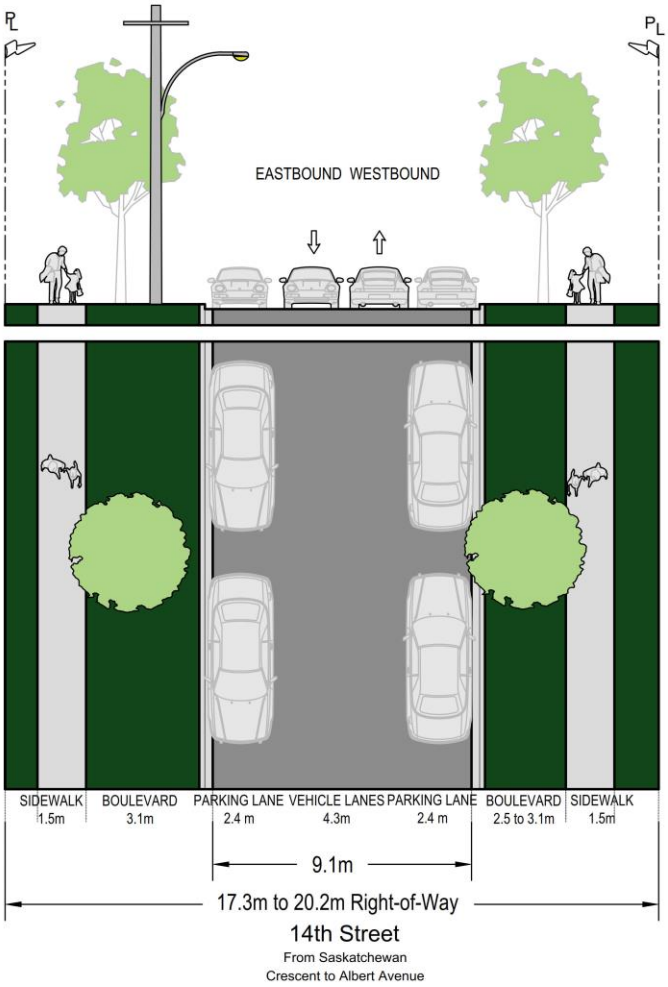


Figure 4. 14th Street East: Albert Avenue to Munroe Avenue South

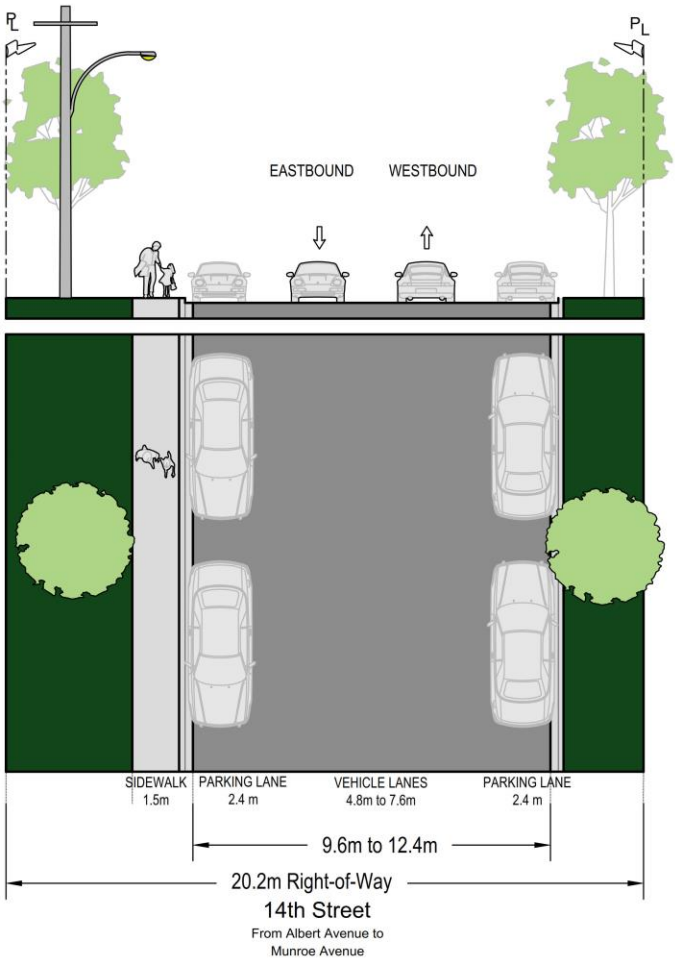
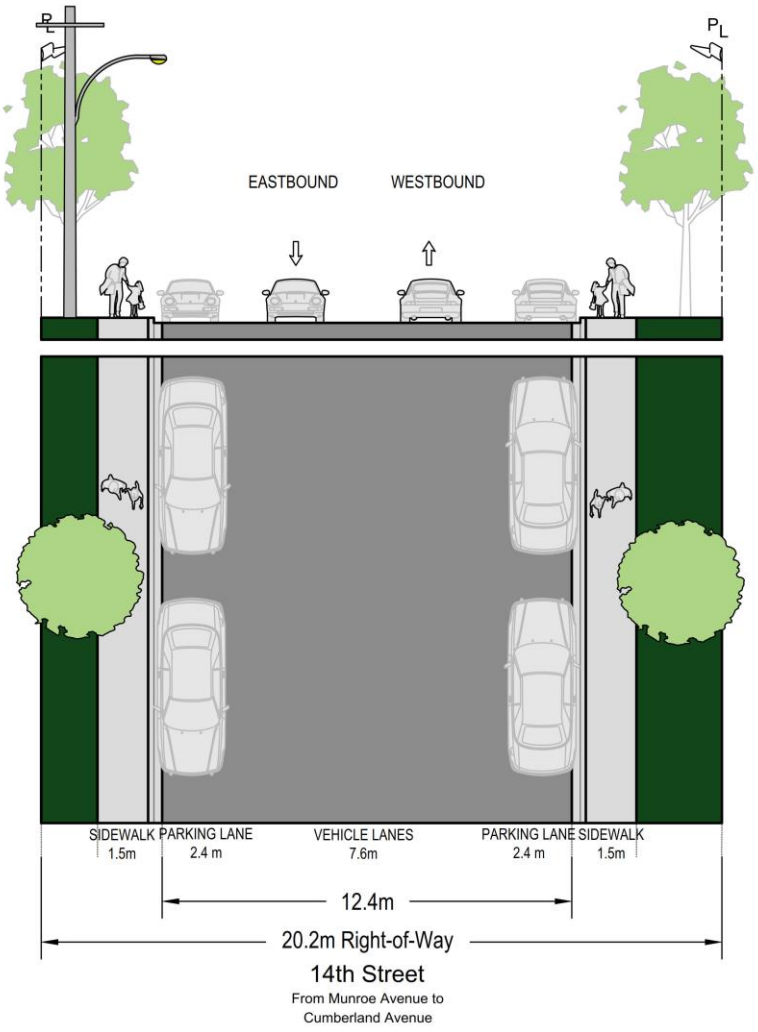


Figure 5. 14th Street East: Munroe Avenue South to Cumberland Avenue South



2.3.2 ROAD NETWORK CLASSIFICATION AND INTERSECTION CONTROLS

14th Street East is classified as a local street, as shown in **Figure 6**. There is one signalized intersection at the east end of the corridor at Cumberland Avenue South, a cyclist and pedestrian activated signal at Clarence Avenue South, and several stop and yield controlled intersections throughout the corridor.

Figure 6. 14th Street East: Roadway Classification

2.3.3 PAVEMENT CONDITION

Pavement condition along the corridor is considered to be fair or good for most of the corridor, as shown in **Table 1**.

Table 1. 14th Street East: Pavement Condition

Corridor	From	To	Average Surface Condition (2017)	Ride Index (2017)	Comments
14th Street East	Cumberland Avenue South	Wiggins Avenue South	Fair	Mediocre	Last treatment in 2007
	Wiggins Avenue South	Clarence Avenue South	Assumed good	Assumed fair to good	Last treatment in 2018
	Clarence Avenue South	University Drive	Good	Fair to good	Last treatment in 2015
	University Drive	Saskatchewan Crescent East	Good	Good	Last treatment in 2010

2.3.4 TRAFFIC VOLUMES AND SPEEDS

The City of Saskatoon provided weekly traffic counts and 85th percentile speeds for the selected corridors. **Table 2** below summarizes the AADT and 85th percentile speeds for this corridor. Based on the data provided, daily traffic volumes are very low along the corridor, with less than 600 vehicles per day. Speeding was not identified as an issue, with 85th percentile speeds of 45 km/h.

Table 2. 14th Street East: Annual Average Daily Traffic (AADT)

Corridor	From	To	Average Daily Traffic (vpd)	85th Percentile Speed (km/h)	Heavy Vehicle Percentage
14th Street East	Lansdowne Avenue	Albert Avenue	200	45	2%
	McKinnon Avenue South	Munroe Avenue South	600	45	3%

Note: *vpd = vehicles per day*

2.3.5 TRAFFIC OPERATIONAL ANALYSIS

Table 3 shows the existing morning and afternoon (in brackets) peak hour turning movement counts and traffic analysis for intersections along the 14th Street East corridor.

Level of Service and Delays

Generally, the intersections studied in the 14th Street East corridor operate at a LOS C or better during AM and PM peak hours, with the exception of one movement which operates at a LOS D. The worst movement has up to a 29 second delay in the peak AM period.

Volume to Capacity Ratios

All intersections along the 14th Street East corridor have a v/c ratio under 0.80.

Queue Lengths

For this corridor, the longest queue lengths occur at the intersection of 14th Street East and Cumberland Avenue South.

The intersection of 14th Street East and Clarence Avenue South has a pedestrian and cyclist activated signal. The performance of this intersection can be estimated between the two-way stop and an actuated signal.

Table 3. 14th Street East: Intersection Analysis – AM (PM)

Intersection Control	Approach	Control	Volume	Level of Service	Total Delay (s)	V/C Ratio	95% Queue Length (m)
14th St & Clarence Ave S*							
Signal	Eastbound Left, Thru, Right	Signal	10 (13)	B (B)	18.5 (13.4)	0.07 (0.08)	3.2 (2.5)
	Westbound Left, Thru, Right	Signal	23 (32)	B (B)	15.6 (15.1)	0.14 (0.18)	5.1 (6.0)
	Northbound Left, Thru, Right	Signal	720 (527)	A (A)	3.7 (3.1)	0.49 (0.39)	53.5 (34.1)
	Southbound Left, Thru, Right	Signal	354 (700)	A (A)	2.4 (4.9)	0.28 (0.56)	18.8 (52.9)
	Overall			A (A)	-	-	-
14th St & Clarence Ave S*							
Two-Way Stop	EB Left, Thru, Right	Stop	10 (13)	D (C)	29.3 (20.3)	0.1 (0.12)	2.6 (3.1)
	WB Left, Thru, Right	Stop	23 (32)	D (D)	27.2 (33.2)	0.18 (0.3)	4.8 (9.2)
	NB Left, Thru, Right	Free Flow	720 (527)	A (A)	0.2 (0.5)	0.01 (0.02)	0.2 (0.4)
	SB Left, Thru, Right	Free Flow	354 (700)	A (A)	0.4 (0.2)	0.01 (0.01)	0.3 (0.2)
	Overall			A (A)	-	-	-
14th St & Cumberland Ave S*							
Signal	Eastbound Left, Thru, Right	Signal	72 (145)	B (B)	14.7 (16.1)	0.23 (0.40)	11.3 (20.0)
	Westbound Left, Thru, Right	Signal	241 (270)	C (C)	24.8 (29.9)	0.70 (0.78)	34.4 (41.3)
	Northbound Left, Thru, Right	Signal	403 (447)	B (B)	11.1 (18.2)	0.50 (0.71)	61.4 (116.6)
	Southbound Left, Thru, Right	Signal	198 (395)	A (B)	8.8 (17.0)	0.27 (0.61)	27.8 (80.6)
	Overall			B (B)	-	-	-

** a full signal model and a two-way stop model were developed to represent a half signal scenario. The half signal's performance is anticipated to be between these two scenarios in reality.*

2.3.6 PARKING

Parking utilization on the study corridors was estimated by counting the number of vehicles parked on each segment of the corridor over 3 time periods throughout the day and is summarized in **Table 4.** Some key findings from this data are:

- The 14th Street East corridor mainly encompasses low density single-family housing, and most of these homes have garage spaces, and as a result parking utilization overnight and early morning is not relatively low.

- The higher parking utilization throughout the day can be attributed to the nearby Bishop Murray High School, Brunskill Elementary School, University of Saskatchewan campus, and Royal University Hospital.

Figure 7 through **Figure 10** provide a visual representation of the parking utilization on 14th Street East.

Table 4. 14th Street East: Parking Utilization

Block		Side	Parking Utilization			
From	To		5:00-7:00	11:30-1:30	16:00-18:00	Average
Saskatchewan Crescent East	University Drive	North	49%	41%	41%	43%
		South	16%	8%	24%	16%
University Drive	Temperance Street	North	43%	95%	87%	75%
		South	50%	90%	70%	70%
Lansdowne Avenue	Albert Avenue	North	48%	39%	39%	42%
		South	48%	39%	48%	45%
Albert Avenue	Clarence Avenue South	North	38%	38%	46%	41%
		South	29%	22%	36%	29%
Clarence Avenue South	Arthur Avenue	North	33%	98%	81%	70%
		South	0%	87%	58%	48%
Arthur Avenue	McKinnon Avenue South	North	13%	78%	52%	48%
		South	0%	81%	65%	49%
McKinnon Avenue South	Hugo Avenue	North	43%	65%	54%	54%
		South	43%	98%	76%	72%
Hugo Avenue	Munroe Avenue South	North	22%	76%	54%	51%
		South	35%	52%	61%	49%
Munroe Avenue South	Wiggins Avenue South	North	38%	70%	49%	52%
		South	35%	83%	59%	59%
Wiggins Avenue South	Ewart Avenue	North	26%	52%	46%	41%
		South	7%	34%	21%	21%
Ewart Avenue	Bottomley Avenue South	North	0%	0%	0%	0%
		South	0%	0%	0%	0%
Bottomley Avenue South	Cumberland Avenue South	North	9%	74%	65%	50%
		South	8%	65%	57%	43%

Figure 7. 14th Street East: Morning Parking Utilization

Figure 8. 14th Street East: Mid-day Parking Utilization

Figure 9. 14th Street East: Evening Parking Utilization

Figure 10. 14th Street East: Average Daily Parking Utilization

2.4 PEDESTRIAN FACILITIES

Table 5 and **Table 6** provides a summary of pedestrian facilities along the 14th Street East corridor. Sidewalks are generally provided on at least one side of the street for most of the corridor. **Figure 11** shows the pedestrian amenities on the 14th Street East corridor.

Table 5. 14th Street East: Existing Sidewalks and Pathways Summary

From	To	Sidewalk
Cumberland Avenue South	Munroe Avenue South	• Both sides – Combined curb and sidewalk
Munroe Avenue South	Clarence Avenue South	• South side only – Combined curb and sidewalk
Clarence Avenue South	Albert Avenue.	• North side only – Combined curb and sidewalk
Albert Avenue	Lansdowne Avenue	• Both sides – separated sidewalk with boulevard
Lansdowne Avenue	Temperance Street	• Both sides – Combined curb and sidewalk
Temperance Street	University Drive	• North side only – separated sidewalk with boulevard
University Drive	Saskatchewan Crescent East	• North side only - Combined curb and sidewalk

Table 6. 14th Street East: Intersection Pedestrian Accommodation

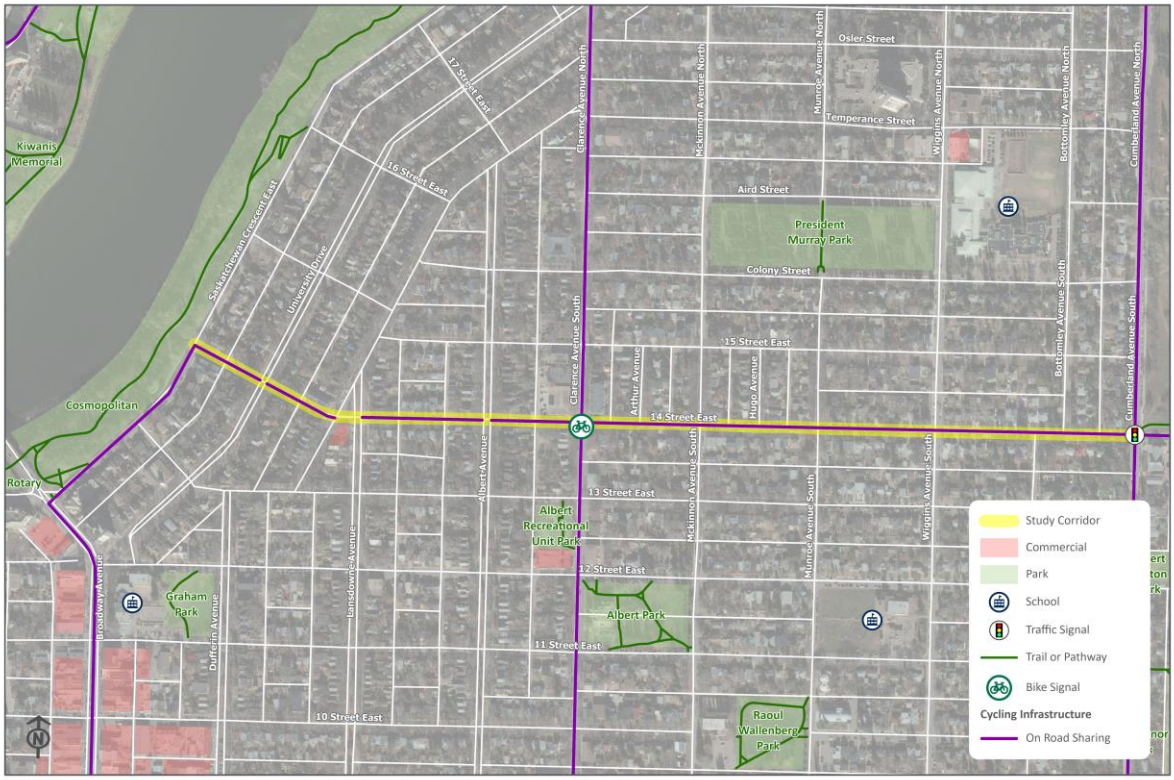
Intersecting Street	Ramps	Comments
Cumberland Avenue South	Lacks ramps oriented in some directions of travel	• Standard crosswalks present in all four directions at traffic signal • Connection to multi-use path on northeast corner of intersection
Bottomley Avenue South	Lacks ramps oriented in some directions of travel	• North-south standard crosswalk present on west leg of intersection
Ewart Avenue	No ramps present	
Wiggins Avenue South	Lacks ramps oriented in some directions of travel	• Standard crosswalks present in all four directions at 4-way stop
Munroe Avenue South	Lacks ramps oriented in some directions of travel	
Hugo Avenue	No ramps present	
McKinnon Avenue South	No ramps present	
Arthur Avenue	Lacks ramps oriented in some directions of travel	
Clarence Avenue South	Ramps present	• East-west zebra crossings present on north-south legs of traffic signal with dedicated bicycle signal
Albert Avenue	Lacks ramps oriented in some directions of travel	• Large central median on Albert Avenue
Lansdowne Avenue	Lacks ramps oriented in some directions of travel	• East-west standard crosswalks present in on north and south legs of intersection • Large central median on Lansdowne Avenue
Temperance Street	No ramps present	• East-west standard crosswalk present in on north leg of intersection
University Drive	No ramps present	• Large central median
Saskatchewan Crescent East	Lacks ramps oriented in some directions of travel	

Figure 11. 14th Street East: Pedestrian Amenities

2.5 BICYCLE FACILITIES

The 14th Street East corridor includes signage and infrastructure specifically for bicycles. **Figure 12** shows the existing bicycle routes in the area.

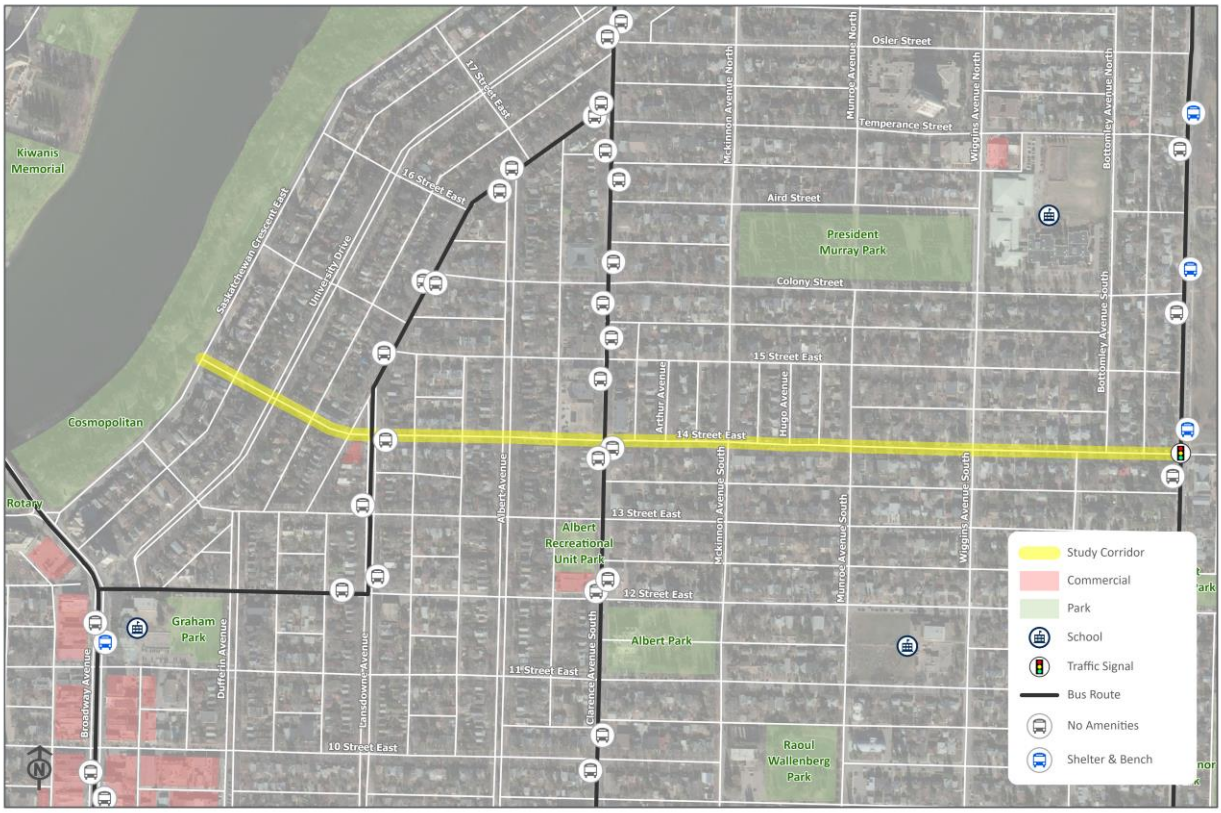
Figure 12. 14th Street East: Cycling Routes



2.6 TRANSIT SERVICES AND FACILITIES

No transit routes currently use 14th Street East. Transit routes cross this corridor at Cumberland Avenue South, Clarence Avenue South, and Lansdowne Avenue. **Figure 13** shows the transit amenities around the 14th Street East corridor.

Figure 13. 14th Street East: Transit Amenities



2.7 COLLISIONS

Data on collisions for the 14th Street East corridor was provided by the City of Saskatoon for the years 2014 to 2018, and the data is summarized below in **Table 7.** The key findings from the data include:

- There were 103 collisions in the past 5 years. Of those collisions, 14% resulted in injuries (14 collisions), while 86% resulted in property damage (89 collisions).
- There were 2 collisions involving a pedestrian or cyclist over this time period, one occurring in 2016 and the other occurring in 2017. These collisions occurred at the intersection of 14th Street East and Clarence Avenue South, and 14th Street East and Albert Avenue respectively.
- The intersection with the greatest number of collisions is 14th Street East and Cumberland Avenue South with 34 collisions over the 5-year period.
- The most common type of collision was right angle collisions, which accounted for 29% of all collisions (30 collisions).

Table 7. 14th Street East: Collision History

Year	Number of Total Collisions		
	Property Damage	Personal Injury	Grand Total
2014	21	2	23
2015	16	4	20
2016	19	4	23
2017	16	3	19
2018	17	1	18
Grand Total	**89**	**14**	**103**

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 developed for each corridor. 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 fact that, in the past, municipalities often focused on the performance of only vehicular traffic 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 analysis included three separate analyses for each corridor: Bicycle Level of Service, Pedestrian Level of Service, and Multi-Modal Intersection Level of Service. For each of these assessments, each segment of the corridor was assigned a score ranging from 0-17 and a letter grade was assigned to each segment for this score. An overall score for each corridor was then developed based on creating a normalized average score by multiplying the segment score by the length of each segment, and then dividing the total score by the total length of the corridor. Further details about the MMLOS methodology are provided in **Appendix A.**

The results of the MMLOS analysis for the 14th Street East corridor are presented in **Table 8** and in **Figure 14** through **Figure 17** on the following pages.

Table 8. Overall Summarized MMLOS Results

Corridor	Bicycle Score		Pedestrian Score		Intersection Score	
	Score	Letter Grade	Score	Letter Grade	Score	Letter Grade
14th Street	11.3	B	10.1	B	13.7	A

Figure 14. 14th Street East: Bicycle Level of Service (Corridor)

Figure 15. 14th Street East: Pedestrian Level of Service (Corridor)

Figure 16. 14th Street East: Intersection Level of Service for East / West Crossings

Figure 17. 14th Street East: Intersection Level of Service for North / South Crossings

3.0 PHASE 1 ENGAGEMENT SUMMARY

The first phase of public engagement was conducted in March, 2020. A range of opportunities were available to provide input during this phase of engagement for all corridors, 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.
- **Community consultants** were contacted and asked to pass information along to the relevant community associations. City councillors were also notified.
- **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 on 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, opportunities, and challenges for each corridor. Specific engagement objectives were to:

- **Present general information** to the public regarding active transportation and neighbourhood bikeways;
- Discuss **existing conditions, issues, and opportunities** for each corridor;
- Discuss **considerations and possible improvements** for all modes of 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. It should be noted that an additional open house was held for the Victoria Avenue bikeway project through the engagement process, although that corridor was not included in this study.

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

Participants 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 25 community members for the 14th Street East corridor, as shown in **Table 9**. A detailed summary of open house input for the 14th Street East corridor is provided in **Appendix B.**

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. A detailed summary of survey responses for the 14th Street East corridor is provided in **Appendix C**.

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.

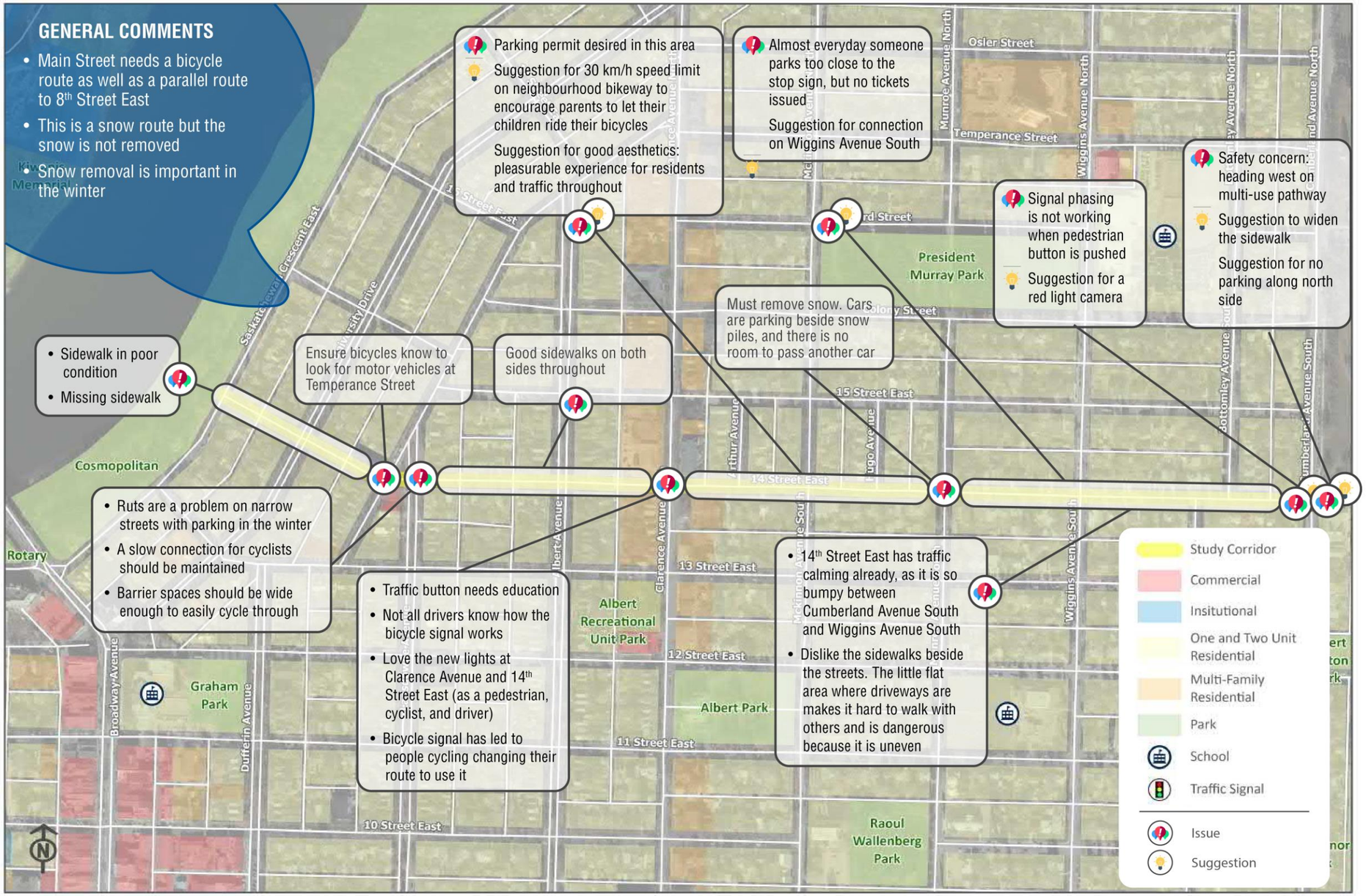
Table 9. Summary of Engagement Opportunities

Event	Location	Date	Number of attendees
14th 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 Avenue South Corridor Open House	Frances Morrisson Public Library	7-9 PM March 9, 2020	19
Victoria Avenue Corridor Open House	Queen Elizabeth School	7-9 PM March 11, 2020	22
29th Street West /31st 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 18** below summarizes the input received on the roll plot during the 14th Street East open house.

Figure 18. 14th Street East Open House Feedback Summary



Additional input received on the open house display boards highlighted that the closure at Temperance Street and the cyclist activated light at Clarence Avenue South already make it a comfortable cycling route, but further changes are desired to both the existing treatments and rest of the corridor. Comments were also received on the need for improved snow clearing and a desire for an improved connection for people walking and cycling across Cumberland Avenue South to access the multi-use pathway east of the project corridor. The corridor was also identified as providing key connections to both the Meewasin Trail and University of Saskatchewan.

Feedback received through the online survey highlighted similar views to what was heard at the open house. Some respondents commented on a desire to see designated bicycle lanes on 14th Street East, while others identified traffic calming and slower speed limits as desired treatments. The dedicated bicycle signal at Clarence Avenue South was mentioned by several members of the public, noting that it is effective for people cycling but can cause some confusion for motorists. Additionally, improved road surface condition and snow clearing were suggested.

A summary of improvement opportunities for the 14th Street East corridor from the public input included:

- Provide education for people driving about how pedestrian and cyclist activated intersections work;
- Improved road surface condition and snow clearing are needed;
- Future cycling connection on Wiggins Avenue;
- Improved connections to the University of Saskatchewan across Cumberland Avenue; and
- Reduce the speed limit to 30 km/h.

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 14th Street East. These themes will be used to develop concept designs that create safe and comfortable cycling facilities that meet the project goals. The key themes for 14th Street East include:

- The existing bicycle and pedestrian activated signal at Clarence Avenue South and the motor vehicle closure between Temperance Street and Lansdowne Avenue create a quality cycling corridor, but an opportunity exists to improve both treatments and the rest of the corridor to further improve the safety and comfort of people walking and biking;
- Improved road surface condition and snow clearing are needed;
- 14th Street East currently acts as an important cycling connection;
- There is an opportunity for improved connections at both the east and west ends of the corridor; and
- There is a desire to see the speed limit reduced to 30 km/h.

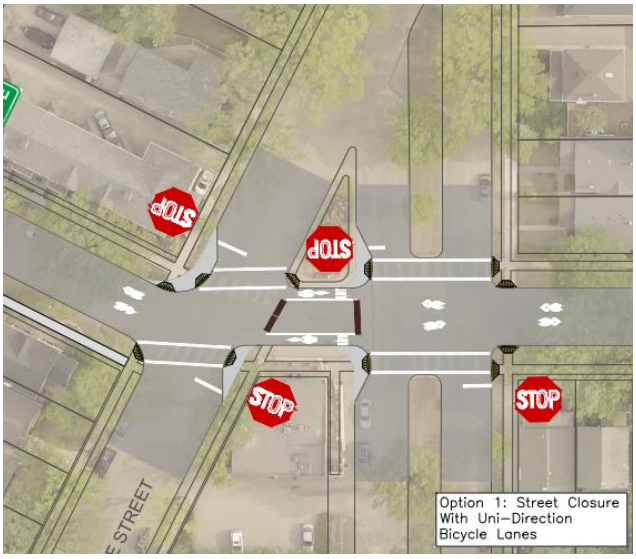
4.0 RECOMMENDED DESIGN

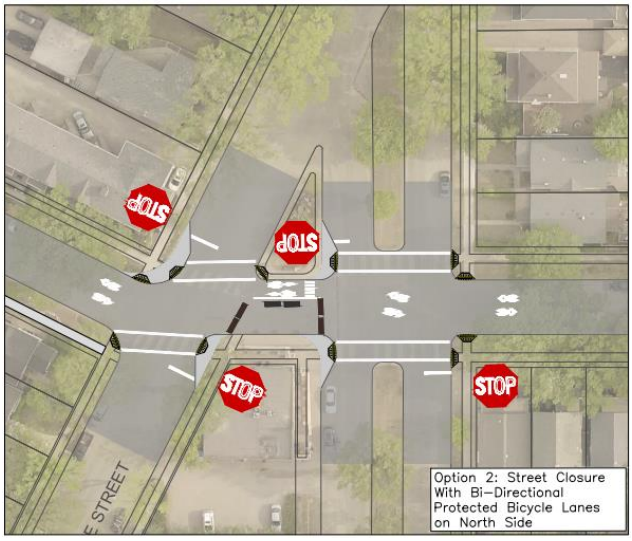
The overall concept for this corridor consists of a neighbourhood bikeway. Key features include:

- **New painted crosswalk and all-way stop control** at Saskatchewan Crescent East to improve intersection safety and connections to the Meewasin Trail, as shown in **Figure 19;**
- **Re-orient stop signs** at University Drive to allow people biking on 14th Street East to continue free flow;
- **Street closure and public space** between Temperance Street and Lansdowne Avenue, including three options. All three options add curb extensions to shorten pedestrian crossing distance and change the intersection traffic control to add stop signs for north-south traffic on both Temperance Street and Landsdowne Avenue to allow people walking and biking to move through the area without stopping. The three options are shown in **Figure 20** and include:
    - Option 1: Uni-directional bike lanes with a plaza area between the westbound and eastbound lanes,
    - Option 2: Bi-directional bike lanes on the north side of the street to allow the plaza space to be adjacent to the south curb, and
    - Option 3: Bi-directional bike lanes on the south side of the street with the plaza space adjacent to the north curb;
- **Yield signs changed to stop signs** on Alberta Avenue to improve safety;
- **New painted north-south crosswalks** at Clarence Avenue at the existing bicycle signal to improve pedestrian safety;
- **New curb extensions** at McKinnon Avenue and Wiggins Avenue to improve pedestrian safety and reduce traffic speeds, as shown in **Figure 21** and **Figure 22;**
- **Intersection improvements** at Cumberland Avenue, including two options, as shown in **Figure 23**:
    - Option 1: Add a bi-directional raised cycle track on the north side of the street to improve the safety and connectivity to the multi-use pathway east of the Cumberland Avenue intersection. This option maintains parking on the south side, but removes parking on the north side, adjacent to the raised cycle track, and
    - Option 2: Keep the neighbourhood bikeway shared street all the way to the Cumberland Avenue intersection where a two phase crossing with crossrides and curb extensions would improve the safety and connectivity the multi-use pathway east of Cumberland Avenue. This option maintains parking on both sides of the street.
- **Changing north-south traffic from yield to stop control** at several locations to improve safety;
- **Bicycle route signage and pavement markings** to improve cyclist visibility;
- **New sidewalks** are proposed at several locations along the corridor, pending further feasibility review; and
- **Parking is maintained on both sides of the street** for the entire corridor.

Figure 19. Saskatchewan Crescent Intersection

Figure 20. Temperance Street and Lansdowne Avenue Intersection Options





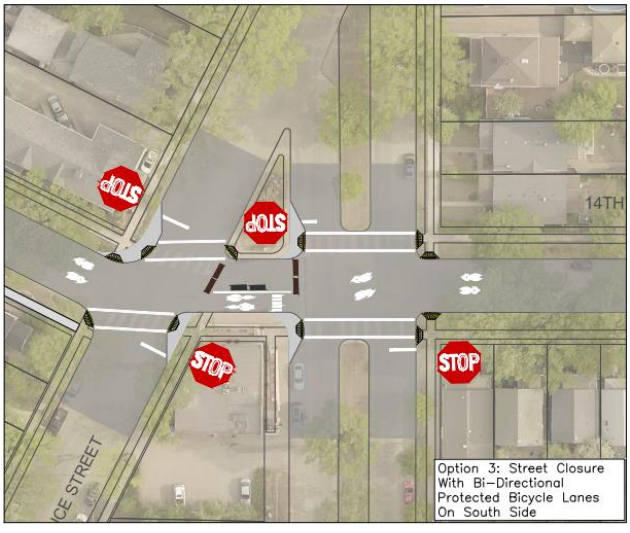


Figure 21 McKinnon Avenue Curb Extensions

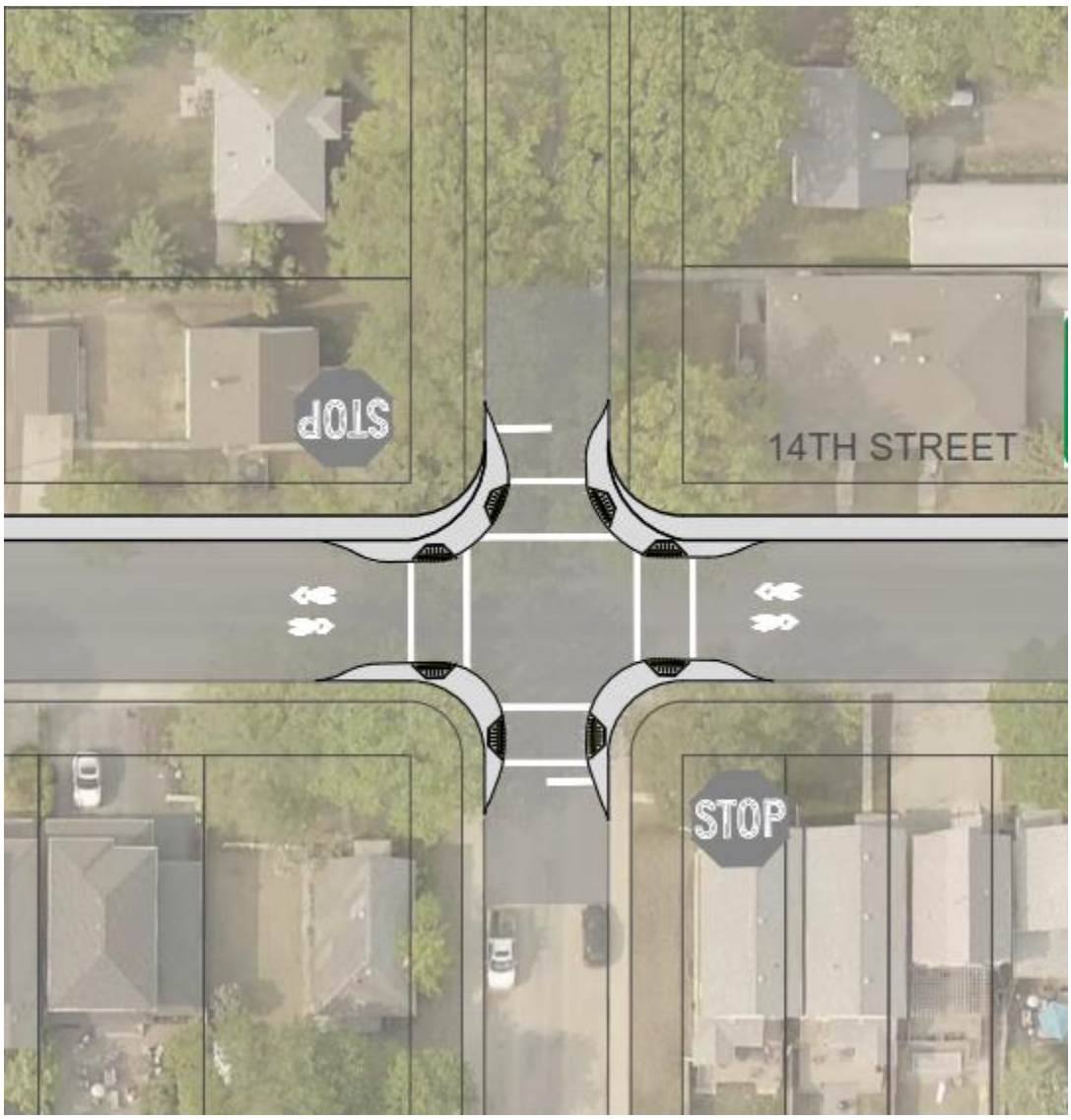


Figure 22. Wigging Avenue Curb Extensions

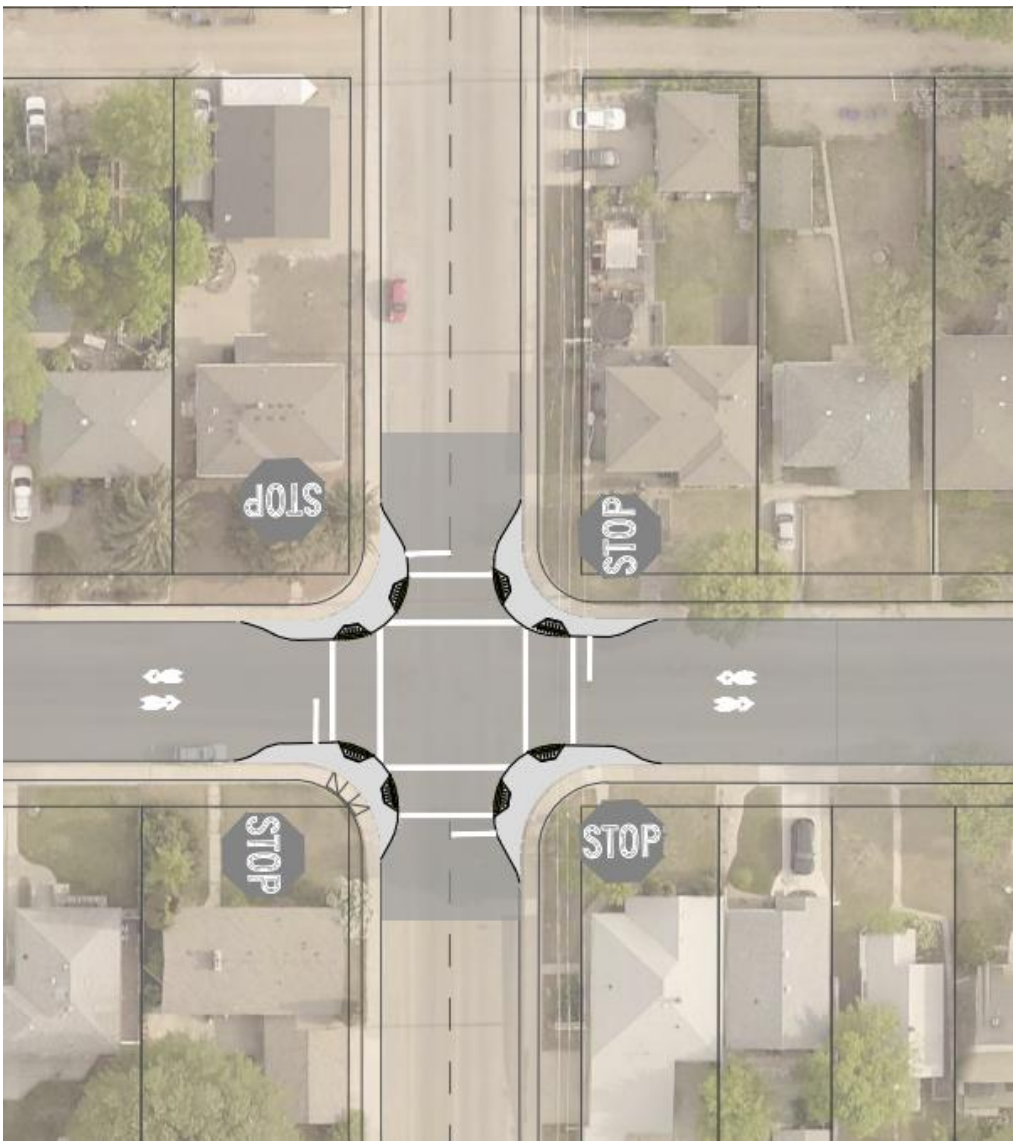
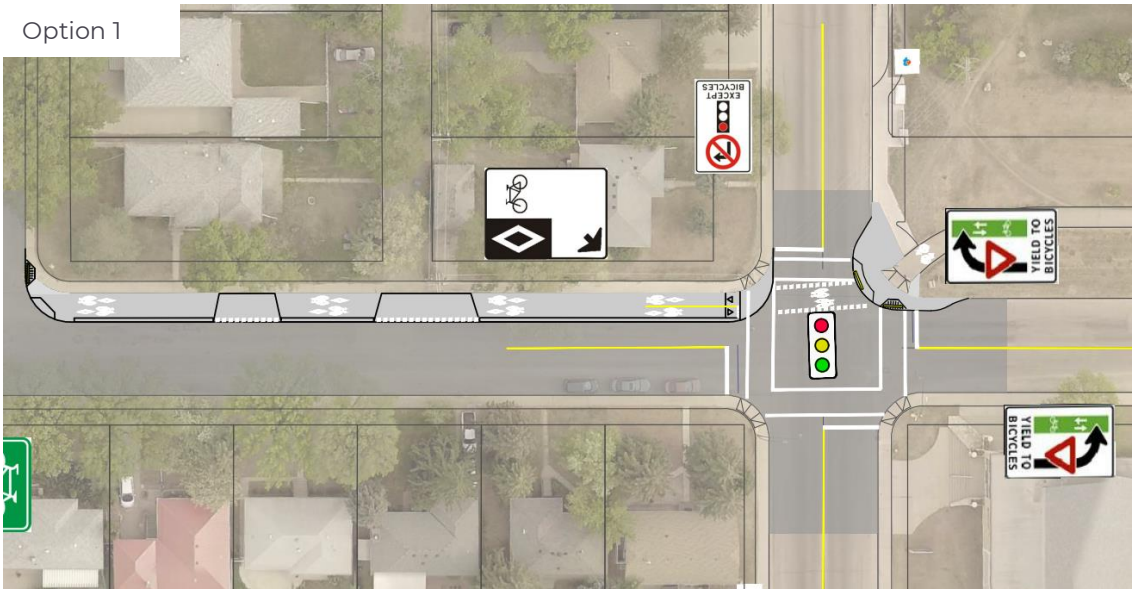
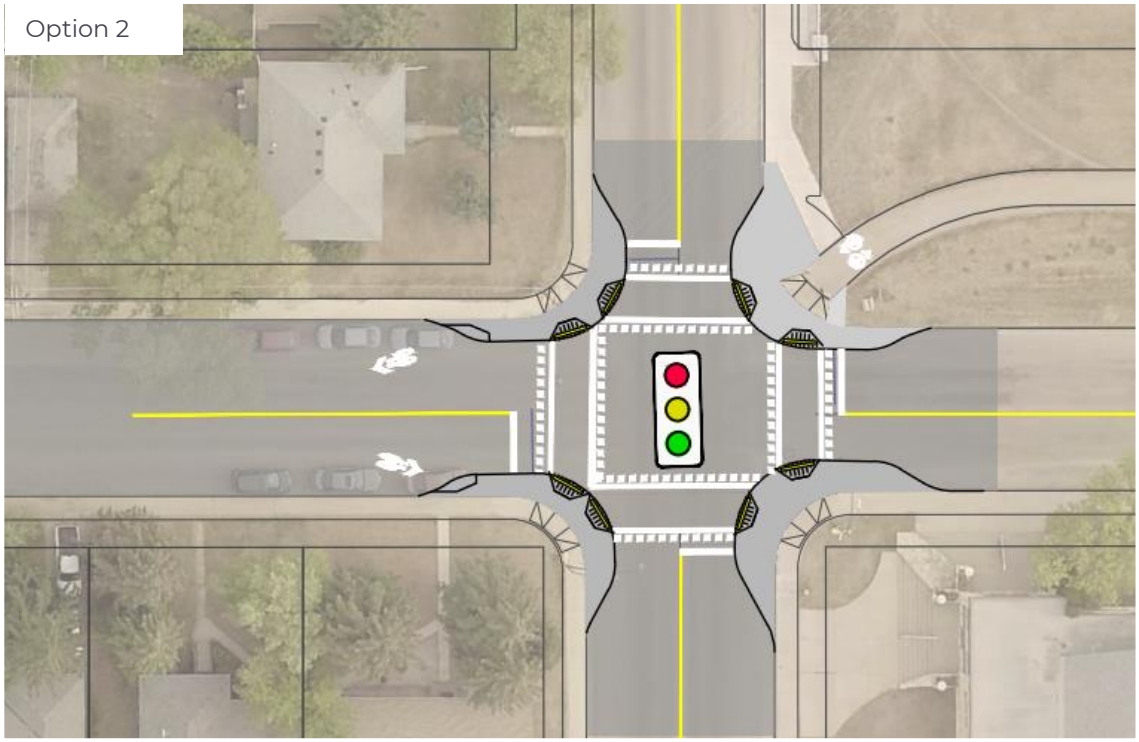


Figure 23. Cumberland Avenue Intersection Options

Option 1



Option 2



4.1 COST ESTIMATES

Order-of-magnitude cost estimates were prepared for the proposed cost estimates based on typical unit costs for similar construction in the City of Saskatoon and elsewhere. The cost estimate for this corridor is approximately $1.36 to $1.5 million depending on the options for the Cumberland Avenue intersection (including a 30% contingency and 10% for engineering and project management fees). This

includes approximately $83,000 to $270,000 for bikeway improvements (such as signage and pavement markings), $576,000 for sidewalk improvements, $650,000 for traffic control modifications, $255,000 - $325,000 for traffic calming measures, and $192,000 for other measures, as shown in **Table 10.**

Table 10 Cost Estimates

Item	Unit	Option 1 (with 2-way Bikeway at Cumberland Avenue)	Option 2 (with Curb Extensions at Cumberland Avenue)
Bikeway improvements		$270,660	$83,460
Sidewalk improvements		$576,060	$576,060
Traffic control devices		$65,000	$65,000
Traffic calming measures		$254,475	$324,675
Miscellaneous (Traffic control, drainage, etc)		$192,400	$192,400
Engineering and project management	10%	$135,900	$124,200
Total		**$1,495,000**	**$1,366,000**

5.0 PHASE 2 ENGAGEMENT SUMMARY

The second phase of public engagement for the 14th Street West corridor was conducted in September, 2020. A range of opportunities was available to provide input during this phase of engagement for this corridor, including a series of three online public meetings, social media, 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 corridors;
- **Sending flyers to key stakeholders** inviting them to submit comments directly to the City, to attend the online meetings, and/or to forward the invitations to other members of their stakeholder group.
- **Community consultants** were contacted and asked to pass information along to the relevant community associations. City councillors were also notified.
- **Placing portable billboards or changeable message boards** along each study corridor to advertise the online meetings; and
- Posting information about the public engagement opportunities on the **City of Saskatoon Engage webpage** and on the **City's social media pages**.

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 neighbourhood bikeway designs;
- Communicate how previous public input informed the designs;
- Collect public feedback on the designs to help prioritize the projects; and
- Summarize public feedback on the designs for the final report to City Council.

5.2 ENGAGEMENT OPPORTUNITIES

The public was invited to attend and provide input at a series of online public meetings held in August and September 2020 using Microsoft Teams Live. Each public meeting was dedicated to a specific corridor:

- August 19, 2020: Dudley Street
- September 9, 2020: 29th Street West and 31st Street West
- September 17, 2020: 14th Street West

An online public meeting has not been held for the 3rd Avenue Corridor. Public engagement for this

corridor will be deferred to future public engagement as part of the Downtown Bicycle Network.

The online public meetings presented an overview of the study process, existing conditions, and the recommended concept for each corridor. Each meeting started with a presentation and provided an opportunity for questions and answers following the presentation. All online public meetings were recorded and were posted to on the City of Saskatoon Engage webpage.

In addition to the online public meetings, a video series was made available to provide information in advance of the online public meetings. Videos were prepared to provide a project overview, summarize key features of the designs, and the specific recommendations for each corridor. All videos were posted to the City of Saskatoon Engage webpage.

Participants were invited to share their input by:

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

Twenty community members participated in the online public meetings during the second phase of engagement, as shown in Table 11 . The City received 7 emails, 1 phone call, and 4 surveys for the 14th Street East Street corridor.

Table 11. Summary of Engagement Opportunities

Event	Date	Number of people engaged
Dudley Street Online Public Meeting	7-8 PM August 19, 2020	2
29th Street West and 31st Street West Online Public Meeting	7-8 PM September 9, 2020	8
14th Street West Online Public Meeting	7-8 M September 17, 2020	10

5.3 SUMMARY OF PUBLIC INPUT

There were a number of questions at the online public event, including:

- Consideration for reversing the orientation of stop signs;
- Questions about bicycle use on 14th Street East relative to University Drive and Saskatchewan Crescent;
- Comments about education regarding the bicycle signal at Clarence Avenue;
- Comments wondering if other corridors had been considered instead of 14th Street East;
- Questions about traffic speeds and volumes;
- Concerns about cycling safety and curb extensions; and
- Comments about the desire to maintain on-street parking.

During the online meeting, the public was asked to vote on the different design options. The results for the 14th Street closure at Temperance Street and Lansdowne Avenue were as follows:

- Option 1: Uni-directional bike lane – 3 votes
- Option 2: Bi-directional bike lane on the north side – 5 votes
- Option 3: Bi-directional bike lane on the south side – 1 vote

The results for the intersection improvement options at Cumberland Avenue were as follows:

- Option 1: bi-directional raised cycle track – 5 votes
- Option 2: crossrides and curb extensions – 2 votes

The City also received feedback about the placement of the bicycles lanes from a separate public meeting held for the 14th Street closure at Temperance Street and Lansdowne Avenue, with the results are:

- Option 1: Uni-directional bike lane – 0 votes
- Option 2: Bi-directional bike lane on the north side – 3 votes
- Option 3: Bi-directional bike lane on the south side – 2 votes

Based on the feedback received, no further changes have been made to the recommended concept.

6.0 CLOSING AND NEXT STEPS

This report summarizes the existing conditions, opportunities, and challenges for the 14th Street East corridor along with a recommended concept with cost estimates. This report also summarizes the engagement process and results based on two phases of public engagement. The recommended concept in this report is provided in **Appendix D** and will be presented to Council. The City will seek to identify capital funding to advance these projects to detailed design and construction should funding be obtained. The City would like to thank the residents of the City of Saskatoon for participating in this process.

APPENDIX A:
MULTI-MODAL LEVEL OF SERVICE METHODOLOGY

Based on the assessment of each, a Multi-Modal Level of Service (MMLOS) was developed for each corridor. This included three separate analyses for each corridor:

- Bicycle Level of Service (**Table A.1**);
- Pedestrian Level of Service (**Table A.2)**; and
- Multi-Modal Intersection Level of Service (**Table A.3).**

For each of these assessments, each segment of each corridor was assigned a score ranging from 0-17 (**Table A.4)**.

Table A.1. Bicycle Level of Service Methodology (Corridor)

Indicator	Criteria	Points
Lane Width (Max. value = 3)	Travel lane between 4.0 – 5.5m Travel lane less than 4.0m Travel lane greater than 5.5m	3 2 1
On-Street Parking (Max value = 3)	No Yes	3 0
Conflicts (driveways, laneways, and intersections) (Max. value = 3)	No conflict points 1-2 conflict points / 100m 3-4 conflict points / 100m More than 5 conflict points / 100m	3 2 1 0
Daily Traffic Volumes (Max value = 4)	Less than 1,500 1,500 – 2,000 2,000 – 2,500 2,500 – 3,000 Greater than 3,000	4 3 2 1 0
Heavy Vehicle Percentage (Max value = 2)	0-5% 5-10% ≥10%	2 1 0
Speed Differential (Max. value = 2)	20-30 kph 40-50 kph >50 kph	2 1 0

Table A.2. Pedestrian Level of Service Methodology (Corridor)

Indicator	Criteria	Points
Network Connectivity (Max. value = 4)	Sidewalk on both sides with connections on both ends Sidewalk on both sides with connection on one end Sidewalk only on one side No sidewalk	4 3 2 1
Facility Width (Max. value = 2)	Min. 1.5m wide & barrier free Sidewalk width >1.5 m Non-existent	2 1 0
Conflicts (Max. value = 3)	No conflict points 1-2 conflict points / 100m 3-4 conflict points / 100m More than 5 conflict points / 100m	3 2 1 0
Amenities (Max. value = 2)	Buffer / boulevard more than 1.5 m Buffer / boulevard between less than 1.5m No buffer boulevard	2 1 0
Heavy Vehicle Percentage (Max value = 2)	0-5% 5-10% ≥10%	2 1 0
Daily Traffic Volumes (Max value = 4)	Less than 1,500 1,500 – 2,000 2,000 – 2,500 2,500 – 3,000 Greater than 3,000	4 3 2 1 0

Table A.3. Intersection Level of Service Methodology (Intersection)

Indicator	Criteria	Points
Number of traffic lanes to cross (both directions (Max. value = 4)	2 3 4 5 6	4 3 2 1 0
Traffic Control (Max value = 5)	Traffic Signal 4-Way Stop 2-Way Stop on street perpendicular to crossing Yield on street perpendicular to crossing Crosswalk only No Control	5 4 3 2 1 0
Heavy Vehicle Percentage (Max value = 2)	0-5% 5-10% ≥10%	2 1 0
Motor Vehicle LOS (Max. value = 6)	Local Street (No LOS) LOS = A, B, C LOS = D, LOS = E, F	6 4 2 0

Table A.4. Level of Service Grading

Score	Letter Grade
0 – 2.5	F
2.5 – 5.0	E
5.0 – 7.5	D
7.5 - 10	C
10 – 12.5	B
Above 12.5	A

APPENDIX B: PHASE 1 ENGAGEMENT OPEN HOUSE INPUT

Open house participants were invited to provide input on the current state of the five corridors being considered for the Neighbourhood Bikeways Project. Participants were invited to provide comments on a roll plot outlining the detailed physical characteristics of each corridor, and/or to provide comments on the open house display boards where they were asked 1) what they would like to see stay the same on the corridor, and 2) what they would like to see improved. This section provides a verbatim summary of the comments that were written down for each corridor.

General Comments

- Main Street needs a bike system as well – close to 8th Street East.
- Ensure bikes know to look for cars at Temperance Street.
- Maintain slow bike connection through (parklet at Temperance Street & 14th Street East).
- Make barrier spacing wide enough to easily bike through (parklet at Temperance Street & 14th Street East).
- Good sidewalks throughout.
- Ruts are a problem on narrower streets with parking (winter).
- 25-30 km/hr max throughout.
- Love the lights at Clarence Avenue South and 14th Street East (as a pedestrian, cyclist and driver).
- Bike light has led to people changing their route to use it.
- Not all drivers know how the bike signal works.
- Safety!! 30km speed limit on Bikeway to encourage parents to let their kids back on their bikes.
- Don't know if a bike lane will work with parking. Snow clearing an issue.
- Good aesthetics, pleasurable experience for residents and at traffic throughout.
- Must remove snow. Cars are parking beside snow piles.
- No room to pass, another car etc.
- This is a snow route why was the snow not removed?
- 14th Street East has calming already, it is so bumpy between Cumberland Avenue South and Wiggins Avenue South.
- Traffic button needs education.
- Almost everyday some one is parking too close to stop sign – No tickets issued.
- Connection on Wiggins Avenue South.
- One-way travel on 14th Street East with dedicated bike facilities.
- I hate the sidewalks beside streets. The little flat area where driveways are to walk on makes hard to walk with others. Also dangerous-uneven.
- Signal phasing is not working when pedestrian button is pushed at 14th and Cumberland Avenue South.
- Park too close to stop signs.
- Improve signal timing.
- No parking along first block east of Cumberland Avenue South would be good.
- Widen the north sidewalk throughout to create a MUP.
- Dark along corridor.

What would you like to see stay the same?

- Like bike light.
- Parking is important to maintain.
- Keep trees!
- Enhance the pleasant street.
- 14th Street East and Clarence Avenue South bike light! (activated signal).
- Plant trees, then, plant more trees!

What would you like to see improved?

- Yes to bikes.
- Reduce speed.
- Better snow clearing of road.
- I am not sure 14th Street East will be safe even with these improvements.
- A bike corridor that doesn't have lots of yield/stops. It's nice to have a stretch where bikes have right of way / can maintain speed.
- Improved transition from multi-use pathway to 14th Street East at Cumberland Avenue South.
- Information/advertising re: cyclists on these bikeways. Motorists must know.
- Traffic circles to slow and create visual barrier.
- If you use sharrows on a narrow street, put them in the middle of the street, not in the car door zone.
- No right turn on red at Cumberland Avenue South or separate phase for bikes.
- 30 km/hr traffic.
- Signs and enforcement.
- Reduced speed to 30 km/hr.
- Like to see one-way car traffic w/ counterflow for bikes.
- Snow ruts.
- Single lane only in the winter.
- Snow clearing (no windrows).
- Facilitate through movement to MUP at Cumberland Avenue South.
- Add sidewalk east of Clarence Avenue South (unless trees need to be cut).
- Bike signal at 14th and Clarence needs a stop line for drivers. Most come to a stop in the crosswalk.
- Bike lane through the parklet at 14th Street East and Temperance Avenue South.
- Cumberland Avenue South intersection poor. Bike only signal maybe?
- Traffic calming is all that's needed.
- Stop sign visibility from cyclist view (hidden).
- Consider way finding at endpoints/transitions.
- Traffic circles or speed humps to reduce speed.
- More than only signs is needed to make this a bike route.

APPENDIX C: PHASE 1 ENGAGEMENT SURVEY INPUT

Respondents were asked to provide input on the current state of the five corridors being considered for the Neighbourhood Bikeways Project. In particular, respondents were asked 1) what they would like to see stay the same on the corridor, and 2) what they would like to see improved. Respondents were also asked how often they utilize each corridor: often, sometimes, rarely, or never. For this summary, comments from those respondents who utilize each corridor often or sometimes were grouped together, similarly respondents who utilize each corridor rarely or never were grouped together.

Respondents also had an opportunity to provide general comments about the project. General comments from all respondents are included in this summary.

What would you like to see stay the same?

Sometimes or Often Utilize the Street

- I love that there is a button cyclists can push from the roadway for crossing Clarence.
- Nice sidewalks for walking, and also folks with residences there should still have vehicle access and parking.
- Sidewalks can remain. Street parking on one side can remain. And I looooove the new button at Clarence Avenue South and 14th Street East to allow cyclists and pedestrians to cross safely. Install more of these signals around the city.
- Snow removal.
- Very little as this corridor is not too bike friendly.
- Bike traffic light.
- Good option as it will connect with the Meewasin river trail and the existing trail from Cumberland Avenue along 14th Street East.
- Bike light/stop on Clarence Avenue Norht intersection.
- Fantastic that lights were added at 14th Street East and Clarence Avenue South. Road closure at Temperance Street and 14th Street East. The connected route from the river and the 14th Street East separated path past Cumberland Avenue South.
- Good river connection.
- Access to the Meewasin trail.

Rarely or Never Utilize the Street

- Single lane vehicle traffic.
- 14th is fine how it is.
- Low use from motorized vehicles.
- License bikes to pay for the lanes

What would you like to see improved?

Sometimes or Often Utilize the Street

- I honestly think the light should change for motor vehicles approaching that intersection, too. The reverse problem has been created vis-à-vis many other Saskatoon intersections, where the light will only change for other motor vehicles, and not for bicycles. Here, motorists are out of

luck. I worry that motorists may become frustrated with cyclists having this advantage at that intersection. I worry that it may cause confusion as to who is to proceed first if a motorist is waiting to cross and a cyclist presses the button to cross, also on the roadway. I worry that people traveling along Clarence Avenue South may get used to that light changing for cyclists and pedestrians and forget that when motorists cross at that intersection, they will be doing so with the light changing. I think all of these discrepancies, where only certain road users are able to trigger a walk sign or green light (in other words, a signal to proceed) and others are not should be fixed.

- This could be a good place for a bike lane. It would be nice if there was eventually a bike lane leading along Cumberland Avenue South, probably back up to 8th Street East and also to campus.
- I live in Greystone and cycle commute using this street every single day, all year. Been brushed by cars numerous times. Cars often use this street not because they live nearby but as a shortcut, to avoid traffic signals on nearby 12th Street East or College. Please reduce the speed limit on this street to discourage this traffic. Suggest limiting parking to one side of the street to make space for a safe painted bike lane. There will still be ample parking. And please, please repair potholes. They are dangerous to cyclists.
- Space for bike lane.
- Traffic calming. Cyclist safety, particularly at intersections.
- Clear and wide bicycle access.
- Bike lanes.
- Protected bike lane. Better crossing at Clarence Avenue South, it's kind of a hard intersection to see pedestrians/cyclists coming down the hill from the north. Safe transitions to the existing path on 14th Street East of Cumberland Avenue South. Would be nice to tie in a safe bike path to the University along Wiggins Avenue South or Cumberland Avenue South.
- Reduce car traffic between Clarence Avenue South and Lansdowne Avenue.
- This is an important connection.
- Improved street cleaning. Smoother road surfaces. Physical separation of bike lanes from traffic.
- 30 km/hr speed limit traffic calming permeable to bike road blockages. Make crossing 14th at Cumberland Avenue South safer. Determine the north/south bike route (Munroe?) and integrate that into the plan so you are not spending money (my tax dollars!) twice. Stop cars from turning onto 14th Street East at Clarence Avenue North, but allow bikes. Inform emergency services, Transit, and other City departments of your plan so they can plan routes accordingly; again, spend money wisely. Traffic calming on surrounding streets. If cars divert off 14th Street East, channel the cars to 12th Street East, College Drive, Main Street, and 8th Street East.
- Have better pavement. Separation between bikes and pedestrians.
- Car speeds are too fast, make it 30 km/hr.
- Addition of protected bike lanes.
- Bike lanes on both sides.

Rarely or Never Utilize the Street

- Install a separated bidirectional bikeway on one side of the street by removing on street parking from one side .
- Nothing.
- Dedicated lanes for bikes - this is a great opportunity as this road is very little used by motorized vehicles. In drafting a report, one could point out that orienting this route to being used for active transportation only would have a net zero affect on motorized vehicle transportation.Not 14th Street East, but the overpass from Sutherland is NOT handicap friendly!! There is a hole/passage through the fence a handicap boy uses to get to work(bicycling). some city worker has been putting his life in danger-by blocking this passage! forcing him to ride on 105th Street & on College Drive -up the McKercher Drive off ramp- he is in fear of his life & has instructed his family to sue the city & the worker-in the event he is hit on either of these routes!! In just 3 weeks he has almost been hit 4x's. but when he just cross's College Drive. - he has ZERO incidence!!!
- Licence bikes to pay for the lanes.
- I'm all for more bike lanes, but what are you trying to connect with this one? Not very many people that bike live on Spadina Crescent. Connect to Broadway and deeper into Nutana and you're more likely to get users.

Hard Copy Survey Responses for 14th Street East

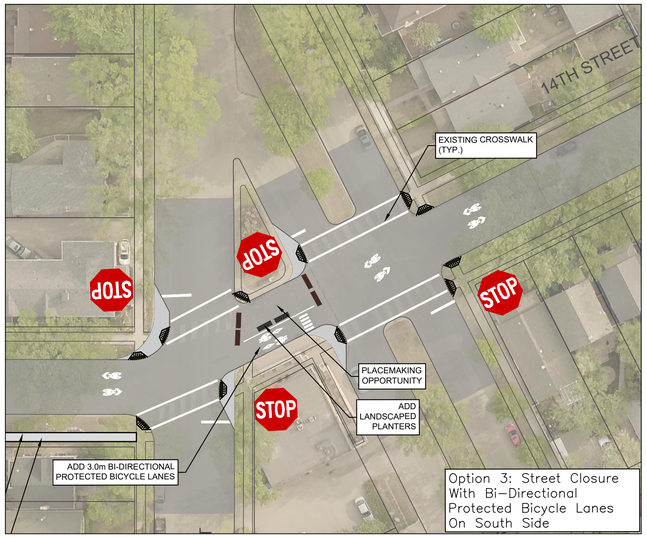
What would you like to see stay the same?

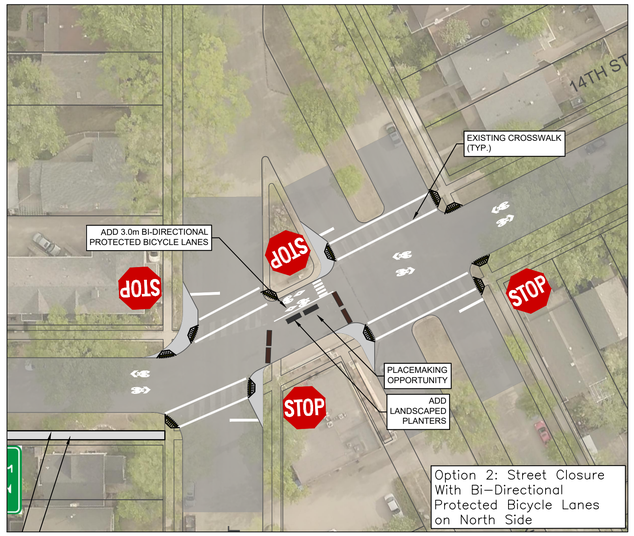
- No feedback

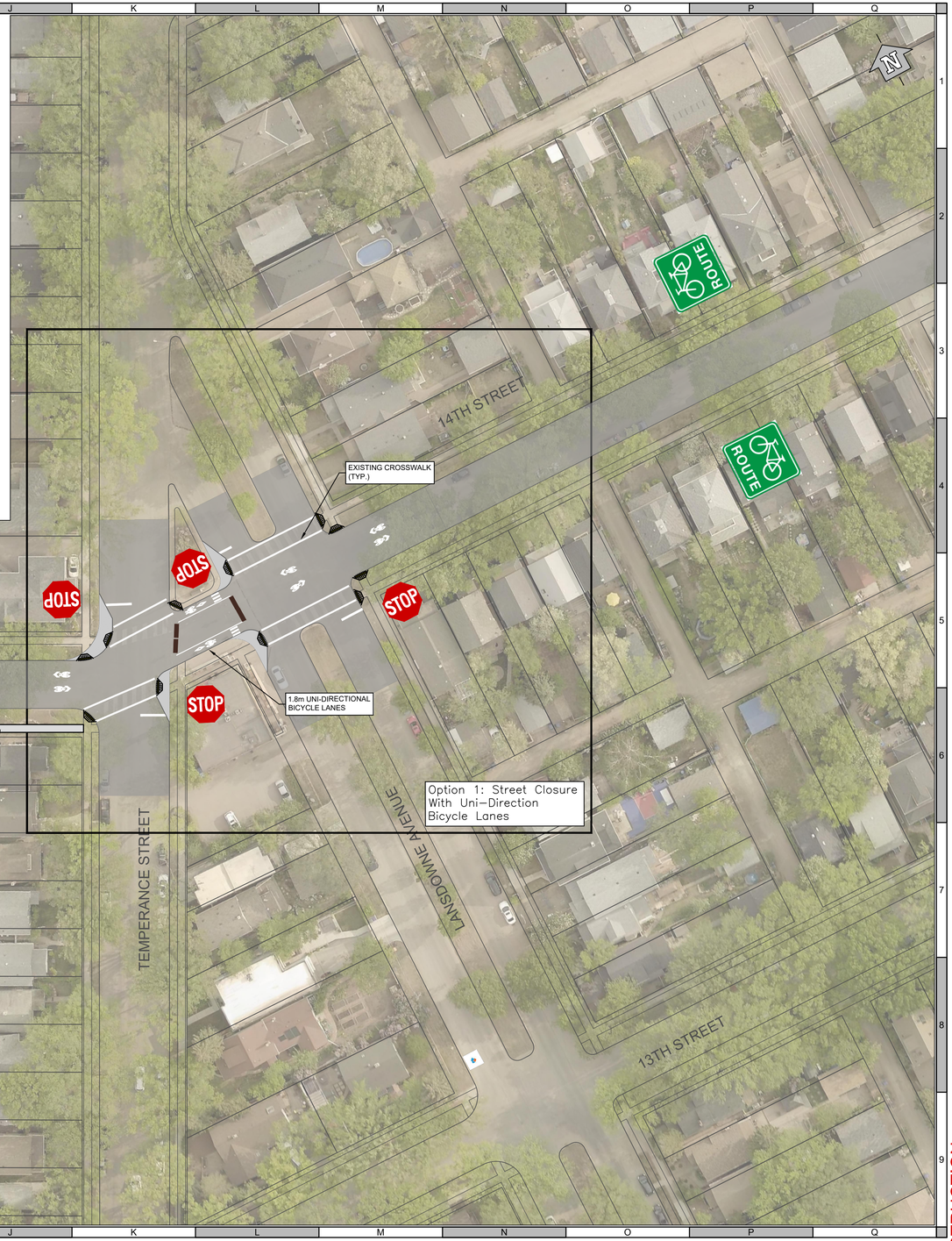
What would you like to see improved?

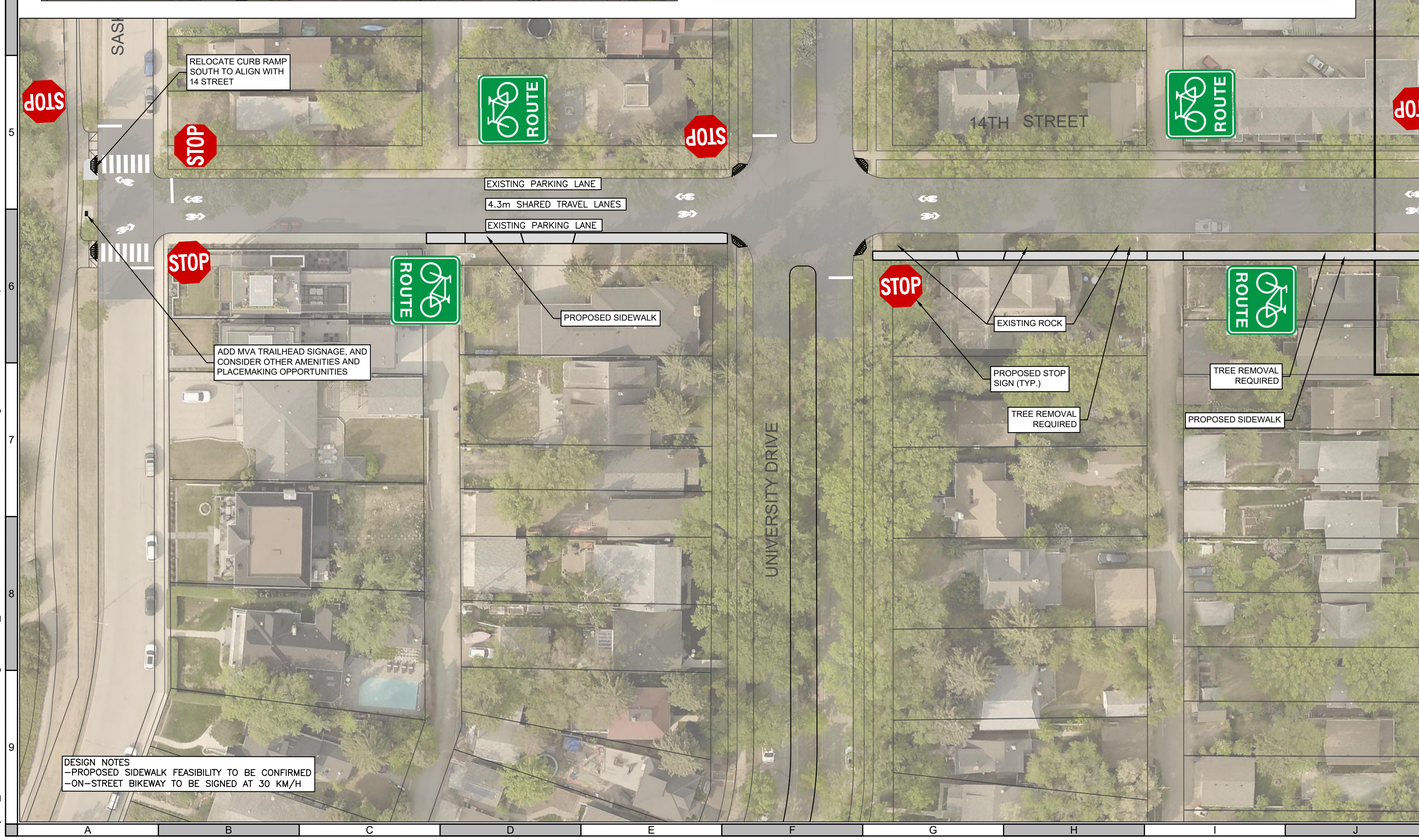
- Connection to downtown
- Separated (AAA) facilities

APPENDIX D: RECOMMENDED CONCEPT









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SASKATOON
NEIGHBOURHOOD BIKEWAYS PROJECT
14th STREET EAST

Sheet Number 9 of 21
Project Number 3257.0009.01
Drawing Number B1
Revision B

NOT FOR CONSTRUCTION

15TH STREET

15TH STREET

14TH STREET

14TH STREET

ALBERT AVENUE

CLARENCE

ARTHUR AVE

MCKINNON AVE

STOP

ROUTE

EXISTING CROSSWALK (TYP.)

EXISTING STOP SIGN (TYP.)

EXISTING PARKING LANE
4.5m SHARED TRAVEL LANES
EXISTING PARKING LANE

EXISTING PARKING LANE
5.6m SHARED TRAVEL LANES
EXISTING PARKING LANE

PROPOSED SIDEWALK

PROPOSED STOP SIGN (TYP.)

EXISTING STREET LIGHT

MULTIPLE TREE REMOVALS REQUIRED

EXISTING STREET LIGHT

EXISTING UTILITY POLE

MULTIPLE TREE REMOVALS REQUIRED

EXISTING PEDESTRIAN AND CYCLIST ACTUATED SIGNAL

DESIGN NOTES
–PROPOSED SIDEWALK FEASIBILITY TO BE CONFIRMED
–ON–STREET BIKEWAY TO BE SIGNED AT 30 KM/H

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SASKATOON
NEIGHBOURHOOD BIKEWAYS
PROJECT
14th STREET EAST

Sheet Number		10 of 21
Project Number	Drawing Number	Revision
3257.0009.01	B2	B

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SASKATOON
NEIGHBOURHOOD BIKEWAYS
PROJECT
14th STREET EAST

Sheet Number 11 of 21

Project Number	Drawing Number	Revision
3257.0009.01	B3	B

NOT FOR CONSTRUCTION

15TH STREET

14TH STREET

BOTTOMLEY AVE

EWART AVENUE

CUMBERLAND AVE

LESLIE AVENUE

ROUTE

STOP

PROPOSED STOP SIGN (TYP.)

REMOVE EXISTING PARKING

0.5m BUFFER WITH CONCRETE BARRIER

3.0m BI-DIRECTIONAL CYCLETRACK

6.6m TRAVEL LANES

EXISTING PARKING LANE

BIKE PUSH BUTTON

EXCEPT BICYCLES

YIELD TO BICYCLES

Option 1: Bi-Directional Protected Bike Lane

EXISTING PARKING LANE

7.7m SHARED TRAVEL LANES

EXISTING PARKING LANE

CROSSRIDES ON ALL LEGS TO MINIMIZE DELAY FOR PEOPLE CYCLING

Option 2: Two Phase Crossing

DESIGN NOTES
–PROPOSED SIDEWALK FEASIBILITY TO BE CONFIRMED
–ON-STREET BIKEWAY TO BE SIGNED AT 30 KM/H

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SASKATOON
NEIGHBOURHOOD BIKEWAYS
PROJECT
14th STREET EAST

Sheet Number		12 of 21
Project Number	Drawing Number	Revision
3257.0009.01	B4	B

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