TOWN OF STONY PLAIN

bunt & associates

MOBYCON

ACTIVE TRANSPORTATION STRATEGY

FINAL REPORT | JANUARY 28, 2020

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Active transportation includes any form of ***human powered transportation***.

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Rotary Park

1.0 INTRODUCTION

Bunt & Associates Engineering Ltd. (Bunt) in partnership with Mobycon have prepared the following Active Transportation Strategy for the Town of Stony Plain, Alberta. This Active Transportation Strategy is intended to establish a vision and direction to facilitate the implementation of active transportation strategies for the community.

1.1 ACTIVE TRANSPORTATION STRATEGY

1.1.1 WHAT

Active transportation includes any form of human powered transportation. Active transportation is often synonymous with cycling and walking, however there are many other forms of active transportation such as skateboarding, in-line skating, skiing and skating. Changes in technologies have also introduced other forms of transportation beyond solely human powered modes such as the recent growth in pedal assist or fully electric bicycles, and other mobility assistance devices classified as micro-mobility.

An effective and inclusive active transportation system must address the needs and requirements of the broadest range of potential users possible.

An active transportation strategy is a living and evolving document. It is intended to provide direction for initial actions and also to provide a framework for guiding future initiatives. The Town of Stony Plain will need to review the feasibility and desirability of recommended initiatives to ensure they are consistent with community plans and available resources. It is recommended that implementation of the Strategy include ongoing public engagement as new projects and directions are considered.

1.1.2 WHY

The Town of Stony Plain is committed to improving its active transportation infrastructure. Improvements will further connect community destinations, promote public health and safety, environmental sustainability and social cohesion.

HEALTH BENEFITS

Physical activity has been widely documented to improve both physical and psychological health. Active transportation is both an affordable and accessible way to add exercise to a daily routine.

ENVIRONMENTAL BENEFITS

Active transportation reduces vehicle trips, traffic congestion, noise pollution and green house gas emissions. Active transportation also connects residents to their surrounding natural environment.

SAFETY BENEFITS

Increasing awareness and visibility of active transportation users and facilities has been shown to result in lower vehicle speeds, which leads directly to safety benefits for vulnerable road users.

SOCIETAL BENEFITS

Active transportation increases transportation options for residents. It is more equitable for lower income individuals, youth, seniors and others who may not have, or may not desire access to a vehicle. Active transportation builds community by encouraging face to face social interaction.

ECONOMIC BENEFITS

Increased walking and biking can support local businesses since residents' may shop more within their smaller, more local catchment area. The more accessible and attractive transportation option can attract more visitors.

1.1.3 HOW

Bunt and Mobycon (the team) conducted a three-day site visit to Stony Plain from September 16th to 18th, 2019. The team cycled and walked Stony Plain's existing active transportation network to observe and document the current state of the network.

To assist with project scope and focus we also engaged the community using an online conversational based platform. Information obtained from this process was critical to ensure our evaluation of Stony Plain's active transportation network was inclusive and informed.

Recommended actions are derived from key strategies intended to maximize active transportation growth in Stony Plain.

1.2 PROJECT GOALS

Project goals are set to provide a framework to carry out Stony Plain's Active Transportation Strategy. If achieved as outlined, they will stimulate and support the overarching goal of active mode growth in Stony Plain. Project goals include:

- Provide a design guide that can be used to develop future active transportation initiatives.
- Increase active mode safety, both actual safety and perceived safety (comfort).
- Identify gaps in the existing network that do not meet the proposed revised design guidelines.
- Identify an active transportation network that Stony Plain can build towards.
- Prioritize proposed network improvements with associated rationales.
- Stimulate active mode growth with improved infrastructure and effective promotion strategies.

1.3 BACKGROUND DOCUMENTS

This Active Transportation Strategy builds off of the 2005 Trails Master Plan and November 2011 Trails Master Plan Evaluation and Update report.

The recommended design guide (**Section 4**) provided herein draws upon best practices from various industry leading design guides.

1.4 REPORT STRUCTURE

The Active Transportation Strategy is organized as follows:

- Section 2 summarizes the public engagement process.
- Section 3 presents Stony Plain's existing active transportation network.
- Section 4 provides recommended Active Transportation Infrastructure Design Guides.
- Section 5 outlines key recommended strategies and actions.
- Section 6 prioritizes actions with an implementation plan.

2.0 PUBLIC ENGAGEMENT

2.1 THOUGHTEXCHANGE

Thoughexchange provides a platform for public comment and allows participants to rate the comments submitted by others. The rating mechanism synthesizes public feedback and facilitates quantifiable interaction. The comments participants were asked to rate are identified using an algorithm that selects a sample of the highest rated thoughts as well as the thoughts that receive the most divisive ratings.

The Thoughtexchange was active for one month, from October 1st to November 1st, 2019. The exchange was promoted by the Town of Stony Plain using its social media channels.

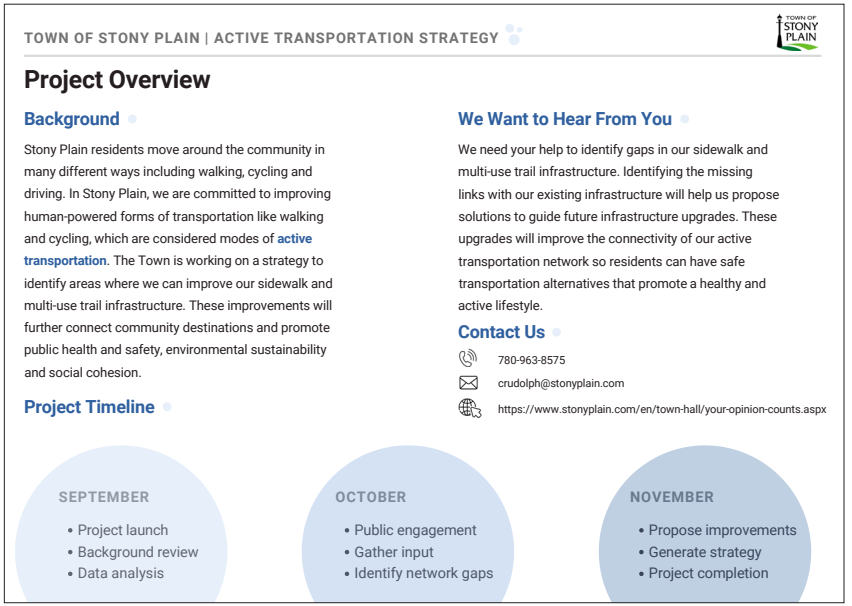
The following question was posed to Stony Plain residents:

How can we improve walking and cycling in Stony Plain? Suggestions can be general ideas or can be specific locations that you feel need improvement.

122 People 161 Thoughts 2586 Ratings

The Thoughtexchange received 161 thoughts from 122 participants. These participants completed 2,586 ratings on posted comments. This is considered a substantive level of participant interaction as the participants rated an average of 21 comments each.

FIGURE 2.1: PROJECT PANEL



2.2 SUMMARY OF PUBLIC INPUT

2.2.1 HIGHEST RATED COMMENTS

Here are 20 thoughts that received the highest star ratings.

We need a trail that connects Stony Plain and Spruce Grove
The highway is a dangerous place to cycle and walk
4.2 (21) Ranked #1 of 20

Connect Stony to Spruce grove via trail system
Safer than traveling on highway. My children could join me.
4.1 (22) Ranked #2 of 20

Extend bike trails to Spruce Grove.
Better access to the Tri Leisure Center, Holy Trinity shops and restaurants.
4.1 (16) Ranked #3 of 20

Expand
We want a greener future so make a path to/from Spruce Grove.
4.0 (26) Ranked #4 of 20

Interconnection
Add more connectivity between trails, designated pathways to make that connection.
4.0 (26) Ranked #5 of 20

Would love to see more garage cans along the paths. Also more lighting would be nice. They can be very dark at night.
4.0 (26) Ranked #6 of 20

I would love a bike path to link stony plain and spruce grove bike trails
There are lots of nice trails but they are not well linked.
4.0 (23) Ranked #7 of 20

More trails leading to Old Stony are required.
The trails seem to end as you get close to old Stony. Sidewalks need to be used and even then, there are not sidewalks everywhere either.
4.0 (23) Ranked #8 of 20

Connect Communities
A trail link between Stony Plain and Spruce Grove would be of great benefit for those who use non vehicular transportation
4.0 (21) Ranked #9 of 20

More lighting
Some areas are dark and uninviting in the dark
4.0 (21) Ranked #10 of 20

6. Continue to provide trails in new developments.
6. Trails are a great thing for people's health and happiness so should continue to be installed.
4.0 (20) Ranked #11 of 20

Having the trails constant, there are multiple places they stop and start a block away but no signage to know where they go.
So people don't get lost and/or know they can keep walking on a trail.
4.0 (20) Ranked #12 of 20

What about the next municipality?
It is not far from Spruce. Stony is doing its share (I think), but we need to be able to walk/ bike to Spruce without doing it on the highway
4.0 (18) Ranked #13 of 20

More street lights on trails going through residential neighborhoods - mostly for fall/winter use.
Now the trail that runs right down the middle of stony is pitch black at 6pm but there are still so many hours left in the day to be active.
4.0 (14) Ranked #14 of 20

Multi use path direct from stony to spruce that runs parallel to 16A.
Again improve accessibility of commuting by running/biking in a safe manner.
4.0 (13) Ranked #15 of 20

A walking trail connecting to Westerra along fifth meridian
So much traffic. This is a safety concern
3.9 (27) Ranked #16 of 20

Repairs are needed on some of the older pathways along the creek. Especially between Oatway and 57 Ave
my Kids use all the paths and scooter often but the pathways have huge gaps from roots causing many Accidents and a broken elbow
3.9 (24) Ranked #17 of 20

Old town area doesn't feel connected to the paths throughout the rest of town. Not sure where or if they connect. Better markings & solar lighting?
Bike/walking access to new library and businesses downtown, as well as access to new rec campus. Better for old town residents to enjoy paths too.
3.9 (23) Ranked #18 of 20

Stony Plain's trail system is great, unless you live in Old Town, which is not connected to the current trail system very well.
If we are going to promote active lifestyles including walking and cycling it's important to connect all areas of town, particularly the core.
3.9 (23) Ranked #19 of 20

Better lighting
Safety
3.9 (22) Ranked #20 of 20

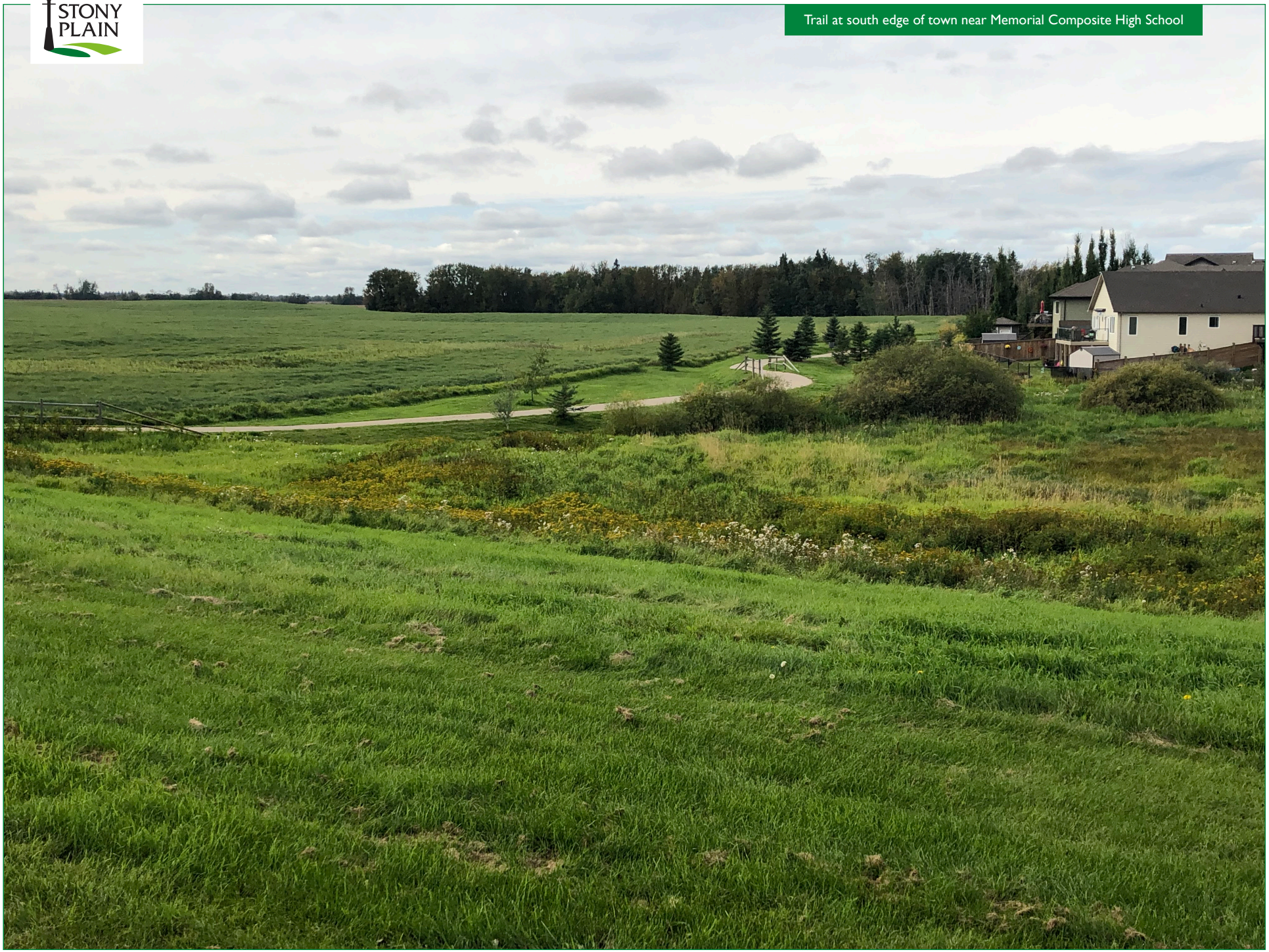
FIGURE 2.2:
WORD CLOUD GENERATED FROM PUBLIC ENGAGEMENT COMMENTS

This word cloud presents frequently occurring words from the Thoughtexchange responses. The larger the text, the more often the word was submitted.

2.2.2 COMMON THEMES

Most popular themes to promote active transportation in Stony Plain are summarized below:

- Create a trail connection to Spruce Grove.
- Increase the number of garbage cans, washrooms, and benches along the paths.
- Add additional lighting.
- Increase maintenance of trails, resurfacing, and clearing of snow and ice.
- Connect Old Town to the creek side trail that runs north/south through town.
- Add additional trail connections.



Trail at south edge of town near Memorial Composite High School

3.0 EXISTING CONDITIONS

Stony Plain is fortunate to have an extensive existing trail network available to residents for walking, cycling and other means of active transportation and recreation. The town is split by a creek (Whispering Waters Creek) where parallel trails create a near ideal active transportation spine extending north/south through the town.

Trail development and preservation has evidently been a priority for Stony Plain. This planning foresight is augmented with a relatively flat topography and a compact town footprint that allows all amenities and services to be within a common active transportation catchment distance.

Stony Plain's existing road network is presented on **Exhibit 3.1**. The existing sidewalk network is presented on **Exhibit 3.2** and existing crosswalks are shown on **Exhibit 3.3**. The existing trail network is presented in **Exhibit 3.4** and **Exhibit 3.5** combines the sidewalk, crosswalk, and trail layers.

Stony Plain Trail Map

Near Forest Green School

Exhibit 3.1

EXISTING ROAD NETWORK

Stony Plain Active Transportation Strategy | January 2020 | 03-19-0101

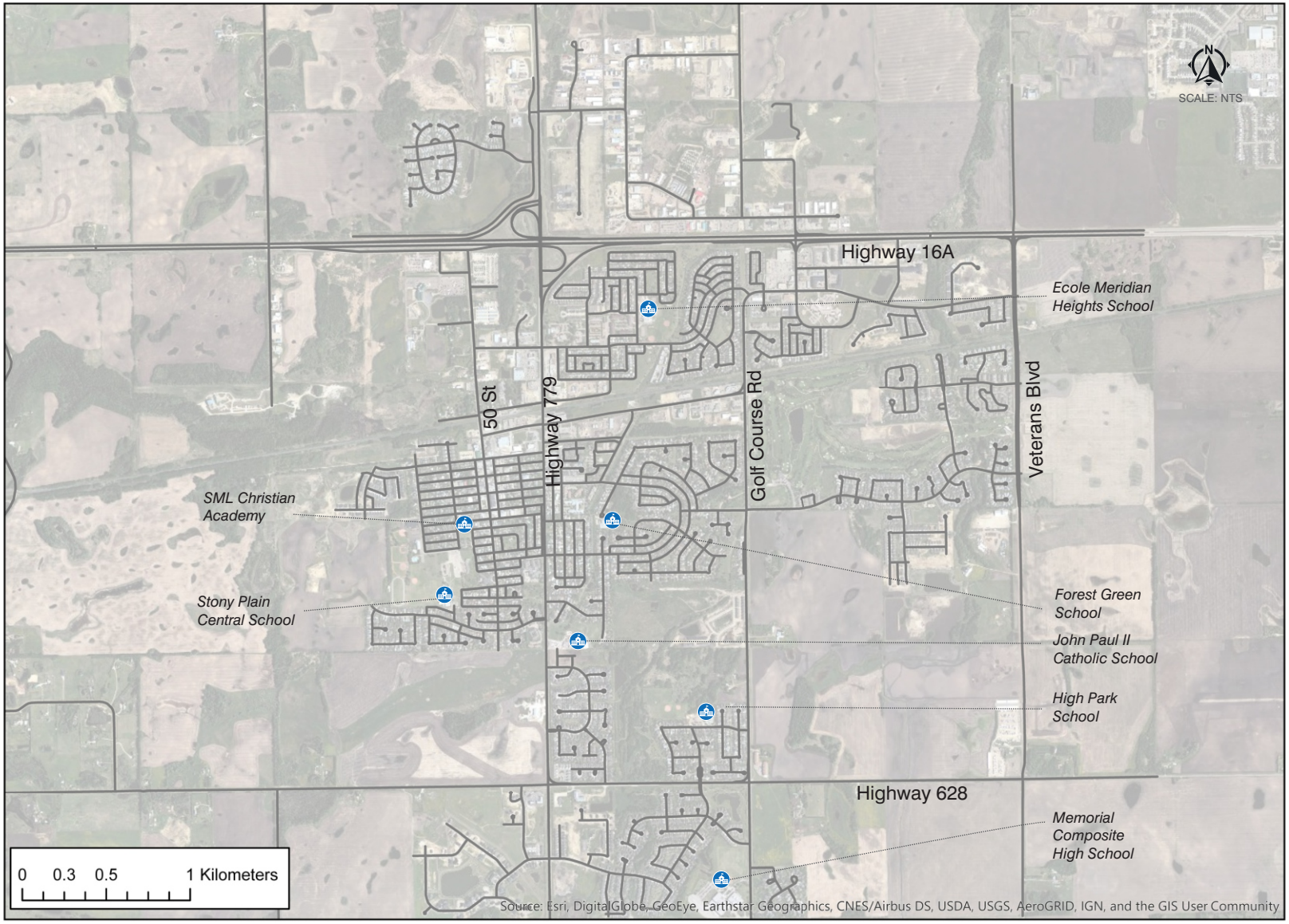


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Exhibit 3.2

EXISTING SIDEWALKS

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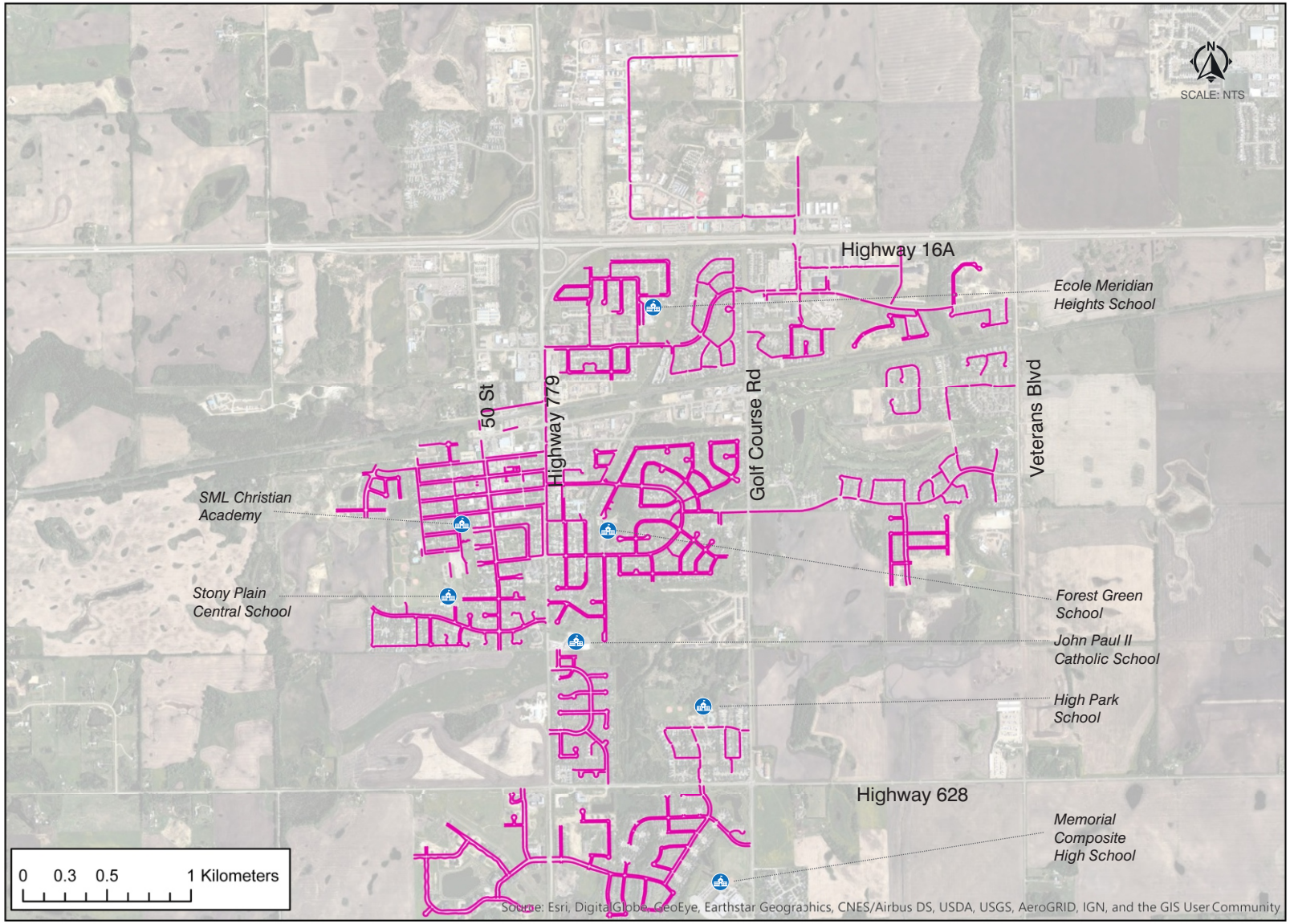

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Sidewalks School

Exhibit 3.3

EXISTING CROSSWALKS

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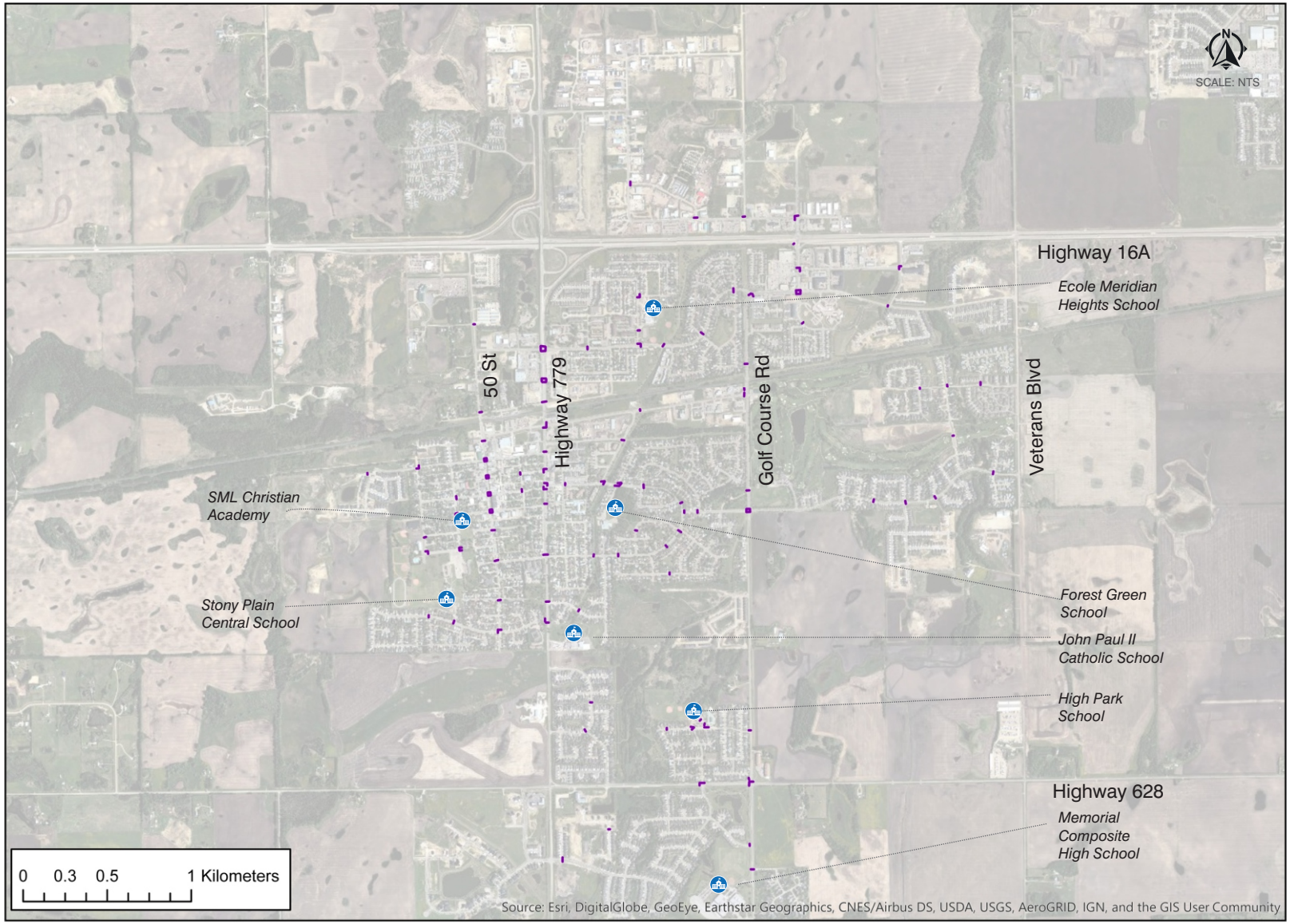

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Exhibit 3.4

EXISTING TRAILS

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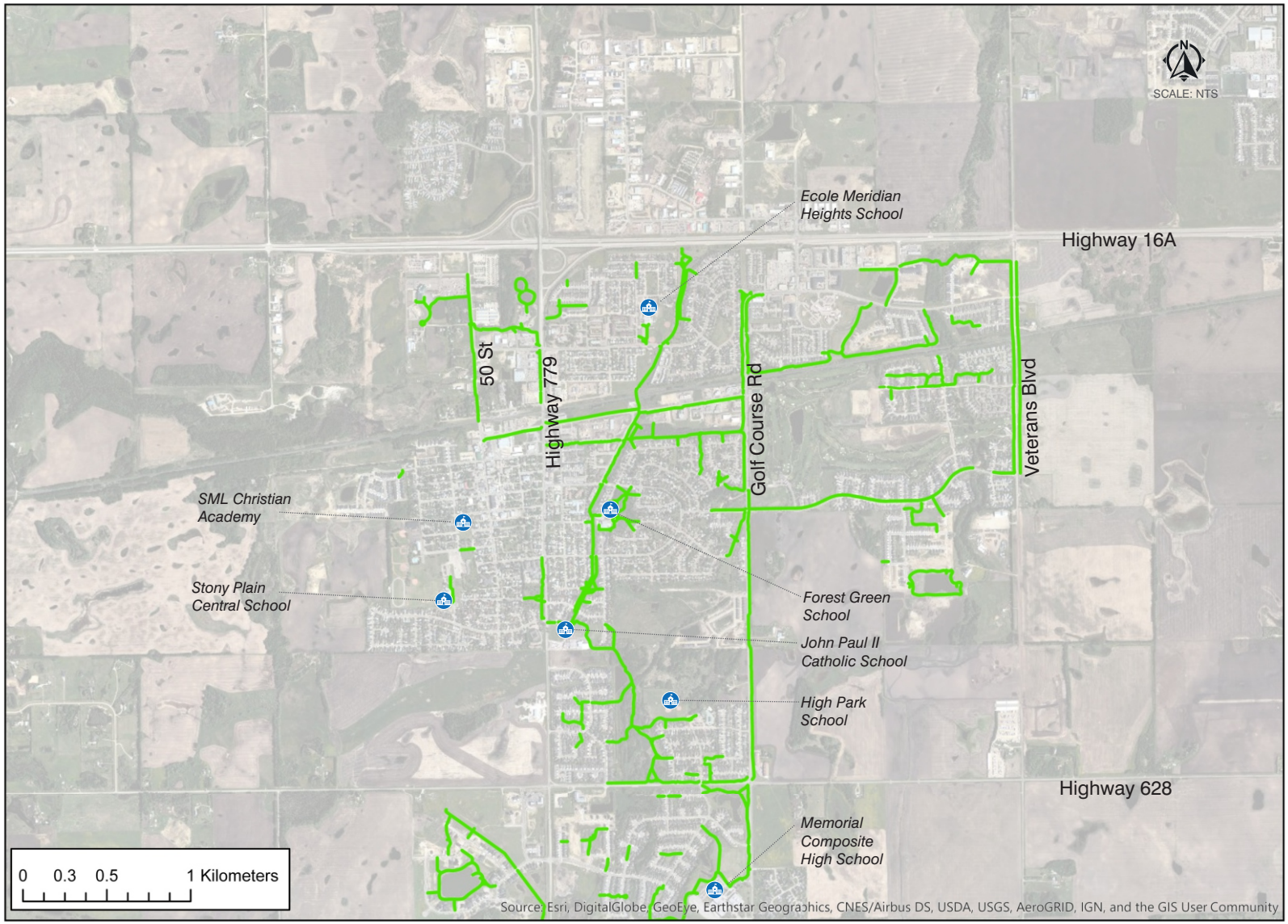

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Exhibit 3.5

EXISTING SIDEWALKS, CROSSWALKS & TRAILS

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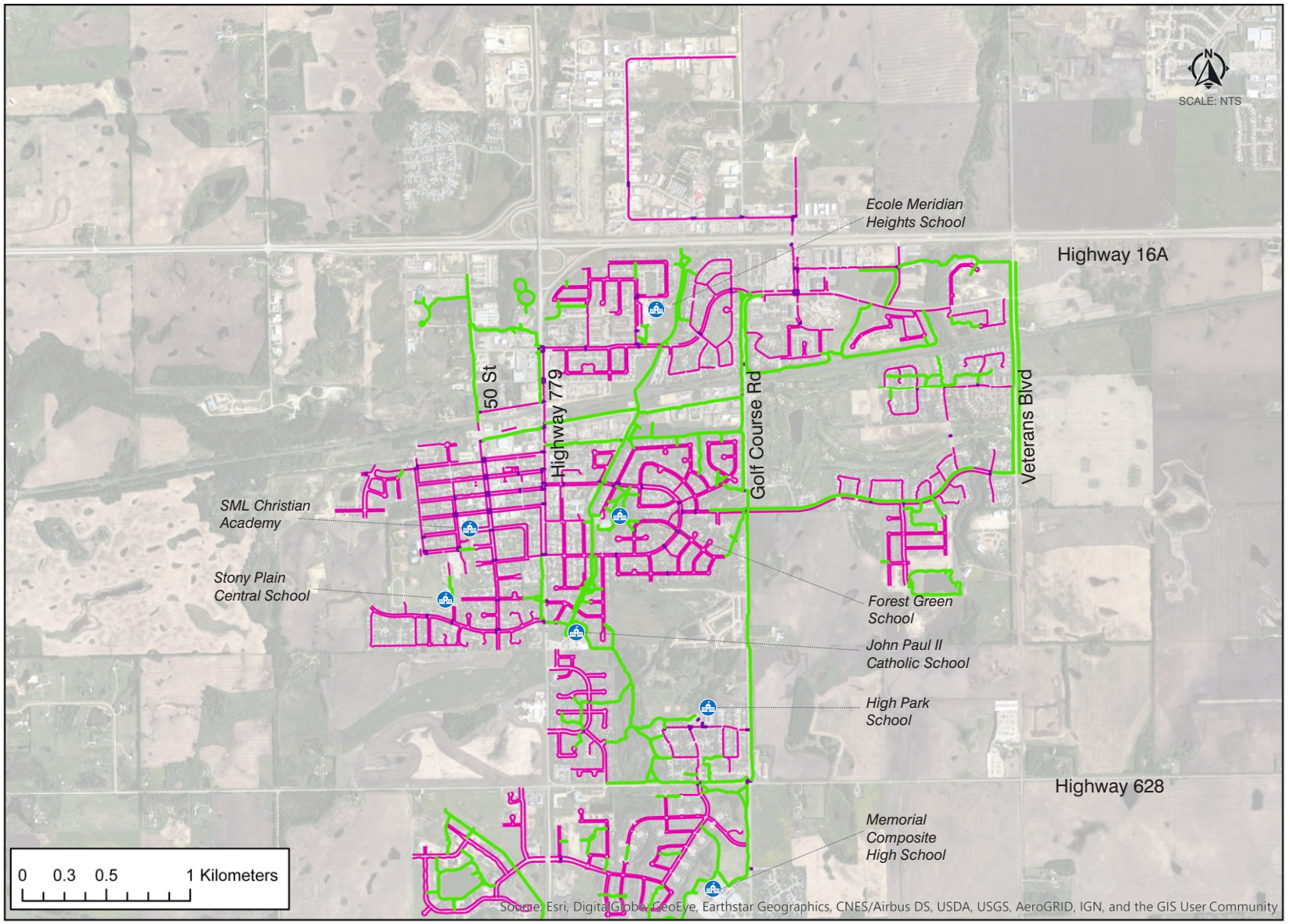

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4.0 INFRASTRUCTURE DESIGN GUIDELINES

The 2005 *Trails Master Plan* provides a comprehensive set of design standards largely focused around recreational multi-use trails and associated amenities or design features such as benches, signage and fences. Since the creation of this document, there has been an increased recognition of the importance of active transportation modes such as walking and cycling, as well as significant development in the design of these facilities with their increasing prominence in other regions throughout North America and around the world.

These guidelines should be employed as a supplement to the standards provided in the 2005 *Trails Master Plan*, and serve as an update to the overall thinking and methodologies that inform facility selection and design. At its core, these guidelines seek to deliver walking and cycling facilities in Stony Plain that are safe and comfortable for users of All Ages and Abilities, also referred to as AAA.

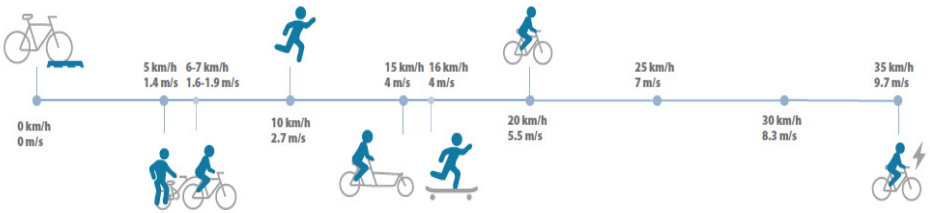
In developing these guidelines, the following industry leading design guides were reviewed and drawn upon as best practice reference materials:

- Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads.
- British Columbia (BC) Active Transportation Design Guide.
- National Association of City Transportation Officials (NACTO) Designing for All Ages and Abilities.
- Ontario Traffic Manual (OTM) Book 18.
- Centre for Research and contract Standardization in Civil and Traffic Engineering (CROW) Design for Bicycle Traffic (Dutch).
- Federal Highway Administration (FHWA) Bikeway Selection Guide.
- Massachusetts Department of Transportation (MASSDOT) Separated Bikeway Planning & Design Guide.

4.1 USER GROUPS

A core component for designing AAA facilities is recognizing and understanding the diversity of users that will be using the facilities. Though traditionally multi-use trails have primarily focused on pedestrians and cyclists, an increasingly diverse set of users are enjoying these amenities including people on skateboards and scooters (both electric and human powered). Each of these users may have a differing set of needs and interact with each other differently. At a basic level, speed is the primary consideration when mixing different users on the same path or trail. **Figure 4.1** highlights typical speeds for different users.

FIGURE 4.1: ACTIVE USER DESIGN SPEEDS
Source: BC AT Design Guide



In order to maximize the safety and enjoyment of all users, the following recommendations should be considered with facility design where a variety of users share space:

- Consider all potential users when designing a facility.
- Provide separate space for cyclists and pedestrians when possible.
- Encourage users such as skateboards and scooters (including electric powered) to mix with cyclists rather than pedestrians.
- Where separate facilities are not feasible or desired, increase the width of the facility.
- Maintain a consistent set of rules for all users while taking into account diverse needs.

The BC Active Transportation Guide provides further contextual guidance on some of the specific needs of different users.

4.2 UNIVERSAL DESIGN

In keeping with the goal of accommodating of a variety of users and providing an equitable environment for residents and visitors in Stony Plain, Universal Design principles should be applied to the design of all infrastructure and programs. These principles ensure that all levels of ability are considered in shaping Stony Plain's built environment and help reduce the barriers that some people face in navigating their community on a daily basis. **Table 4.1** outlines the principles of universal design to be considered during the design process.

The TAC Geometric Design Guide for Canadian Roads provides further detailed design guidance regarding accessible design features.

Skateboard rack outside Stony Plain Central School

TABLE 4.1: UNIVERSAL DESIGN PRINCIPLES
Source: BC AT Design Guide

PRINCIPLE	GUIDELINES
1: EQUITABLE USE The design is useful and marketable to people with diverse abilities.	• Provide the same means of use for all users: identical whenever possible; equivalent when not. • Avoid segregating or stigmatizing users. • Provisions for privacy, security, and safety equally available to all users. • Make the design appealing to all users.
2: FLEXIBILITY IN USE The design accommodates a wide range of individual preferences and abilities.	• Provide choice in methods of use. • Accommodate right- or left-handed access and use. • Facilitate the user's accuracy and precision. • Provide adaptability to the user's pace.
3: SIMPLE AND INTUITIVE USE Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.	• Eliminate unnecessary complexity. • Be consistent with user expectations and intuition. • Accommodate a wide range of literacy and language skills. • Arrange information consistent with it's importance. • Provide effective prompting and feedback during and after task completion.
4: PERCEPTIBLE INFORMATION The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.	• Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information. • Provide adequate contrast between essential information and it's surroundings. • Maximize "legibility" of essential information. • Differentiate elements in ways that can be described (e.g. make it easy to give instructions or directions). • Provide compatibility with a variety of techniques of devices used by people with sensory limitations.
5: TOLERANCE FOR ERROR The design minimizes hazards and the adverse consequences of accidental or unintended actions.	• Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded. • Provide warnings of hazards and errors. • Provide fail safe features. • Discourage unconscious action in tasks that require vigilance.
6: LOW PHYSICAL EFFORT The design can be used efficiently and comfortably and with a minimum of fatigue.	• Allow user to maintain a neutral body position. • Use reasonable operating forces. • Minimize repetitive actions. • Minimize sustained physical effort.
7: SIZE & SPACE FOR APPROACH & USE Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.	• Provide a clear line of sight to important elements to seated of standing users. • Make reach to all components comfortable for any seated or standing user. • Accommodate variations in hand and grip size. • Provide adequate space for the use of assistive devices or personal assistance.

4.3 PEDESTRIAN FACILITIES

Sidewalks represent the majority of pedestrian facilities in Stony Plain and as such, create the core of the pedestrian network. The design of sidewalks and pedestrian crossings have a significant impact on the safety, accessibility, and overall quality of experience for those walking or rolling in the town. In keeping with principles of Universal Design, it is essential that the design of sidewalks and crossings consider the needs of those who may have visual or mobility impairments.

4.3.1 SIDEWALK DESIGN

A notable requirement for sidewalk design in terms of accessibility, as well as comfort and usability for all pedestrians is the overall clearway width and treatment at driveways. Design of sidewalks that allow people to walk side-by-side and easily pass oncoming walkers (including parents with strollers and people in wheelchairs or with other mobility aids), is important to create a safe and welcoming pedestrian environment. The guidelines in **Table 4.2** set out the recommended minimum sidewalk type and widths.

TABLE 4.2: SIDEWALK CLEARWAY WIDTH CONTEXTUAL SELECTION

LAND USE	ROAD TYPE	SEPARATION	DESIRABLE (M)	CONSTRAINED MINIMUM (M)
Residential	Local	Non-Separated or Separated	1.8	1.8
	Collector/ Arterial	Separated	2.1	1.8
Industrial	Any	Separated	2.1	1.8
Commercial	Any	Separated	2.4 - 3.0	1.8

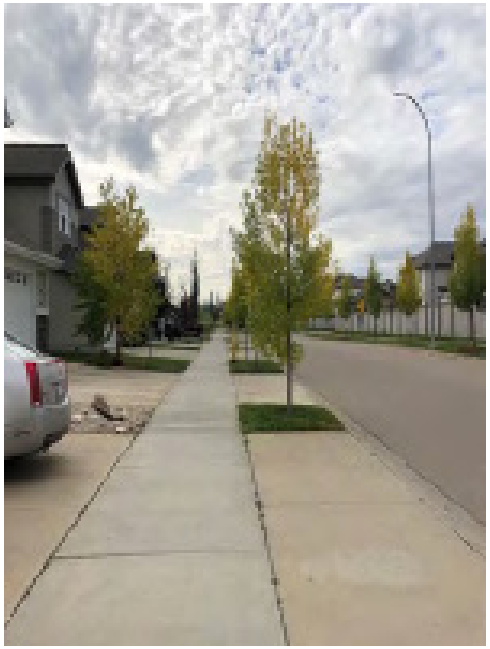


FIGURE 4.2: SEPARATED 2M SIDEWALK
Spruce Grove, AB

RECOMMENDED DESIGN MEASURES:

- If necessary, non-separated sidewalks should ensure a level clearway of >1.5m at driveways and should ideally be buffered by on-street parking.
- Sidewalks adjacent to arterial roads should have a minimum 1m (and ideally ≥1.8m if the speed limit is above 50km/h) planted boulevard buffer to improve comfort from passing vehicles.
- Street furniture or other design features should not infringe on the minimum clearway width.
- Sidewalks should maintain as straight a path as possible to minimize walking distance for convenience.

4.4 BICYCLE FACILITIES

Creating a network of bicycle facilities that accommodates users of all ages and abilities requires a breadth of options that reflect the surrounding environment. Five principles of good bikeway planning & design (CROW 2016) that reflect the unique challenges and needs of those riding bikes, will guide the development of options and help translate them into applicable actions are:

1. SAFETY

Both perceived and real, road users should feel that they have enough space to ride, conflicts are minimized, and outcomes of crashes are not severe.

2. COMFORT

Surfaces should be smooth, turn angles and gradients gentle, with minimal obstructions.

3. DIRECTNESS

Alignments should be competitive with the driving network, have as few turns as possible, and minimize stops.

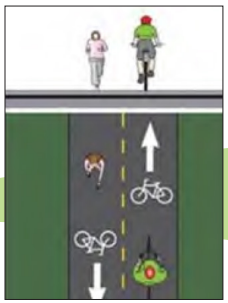
4. COHERENCE

Facilities and routes should be intuitive in their design and direction, and integrate seamlessly with other transportation systems.

5. ATTRACTIVENESS

Routes should be enjoyable, relatively quiet, and connect to points of attraction.

Drawing upon these principles, a core elements of bicycle facility design is providing connected options that are both safe and comfortable. While many people enjoy cycling, it has been found that a large part of the population would enjoy riding a bike more often if there was a more comfortable network of facilities to use. Understanding what types of facilities those on bikes find comfortable is important to encourage increased ridership. **Figure 4.3** identifies the continuum of commonly used bicycle facilities based on their level of comfort to all users. Specific design guidance for each facility type can be found in each of the reference design manuals cited in this strategy. Each designated facility type identified can be described as follows:



OFF STREET MULTI-USE PATHWAY

A multi-use pathway is a facility that is typically (though not always), located outside the road right-of-way and often passes through parks or other green spaces. They are designed to support bidirectional active transportation users, such as pedestrians, cyclists, runners, in-line skaters and skateboarders etc. Users are expected to share the space on the path in accordance with organizational markings.

PROTECTED BIKE LANE OR CYCLE TRACK

A protected bike lane is a dedicated cycling facility adjacent to but separated from motor vehicle traffic by a physical vertical barrier (e.g. curb, planter boxes, etc). A protected bike lane may be designed for one-way or two-way travel and is designated for the exclusive use by cyclists and is distinct from the sidewalk.

LOCAL STREET BIKEWAY

A local street bikeway is where cyclists share the road with motor traffic on a street with low traffic volumes and speeds. These bikeways often employ traffic calming measures to achieve the desired traffic speeds and volume (30km/h, ≤1000 annual average daily traffic volume). Where local street bikeways meet collector or arterial roads, signals or other design measures should be employed to provide a safe crossing.

BUFFERED BICYCLE LANE

A buffered bicycle lane is a dedicated cycling facility where pavement markings, potentially along with other delineators (e.g. flex posts), are used to define a buffer space between cyclists in the bicycle lane and the portion of the roadway traveled by motorists. Generally, the painted buffer is ≥0.5m to improve comfort and safety.

PAINTED BICYCLE LANE

A painted bicycle lane is a portion of the travelled roadway designated for exclusive use by cyclists with pavement markings and regulatory signage. Motorists are typically not permitted to enter the bicycle lane to park, stand or drive, however, they are permitted to cross them when turning at an intersection.

These examples demonstrate the range of cycling facility types where higher levels of separation from vehicles equates to higher levels of comfort. Increased comfort not only provides safer routes, it also increases the potential cyclist demographic to include the large percentage of people who would consider cycling if it were more comfortable.

FIGURE 4.3: AAA BICYCLE FACILITY COMFORT
Source: City of Vancouver

4.5 FACILITY SELECTION

Identifying the appropriate pedestrian or cycling facility type for a given location is largely a factor of the traffic environment. **Table 4.3** provides a framework for identifying the appropriate facility type based on the traffic environment, (speed and volume). This tool can be applied in two primary ways:

1. Facility types can be identified using the existing traffic environment.
2. The possible facility type can be used to determine an acceptable traffic environment.

In both cases, the tool can be used to identify the acceptable combinations of facilities that ensures safety and comfort for all users.

GUIDELINES FOR SELECTING ALL AGES & ABILITIES ACTIVE TRANSPORTATION FACILITIES

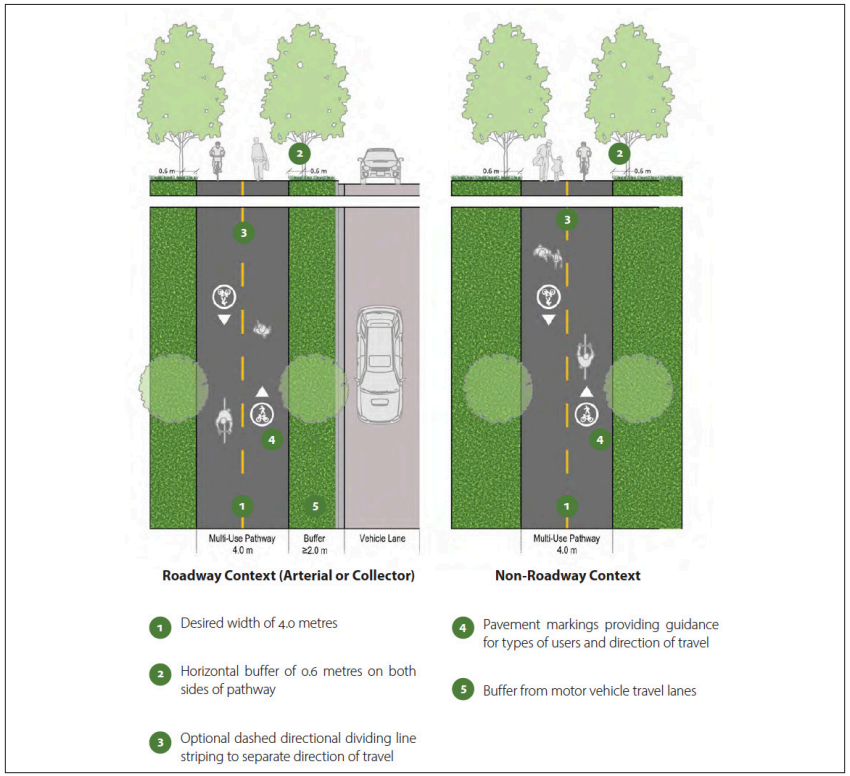
Roadway Context				Facility Type	
Target Motor Vehicle Speed	Target Max Motor Vehicle Volume (ADT)	Motor Vehicle Lanes	Operational Considerations	Bicycle Facility	Pedestrian Facility
				MUP or Separated Bicycle Path	MUP or Separated Pedestrian Path
<30km/h	<1,000	No centerline, or single lane one-way	< 50 motor vehicles per hour in the peak direction at peak hour	Local Street Bikeway	Non-Seperated or Seperated Sidewalks
>40km/h	<500 - 1,500				
	<1,500 - 3,000	Single lane each direction, or single lane one-way	Low curbside activity, or low congestion pressure	Painted Bicycle Lane, Paint Buffered Bicycle of Protected Bicycle Lane	
	<3,000 - 6,000				
	Greater than 6,000			Painted Buffered Bicycle lane of Cycle Track	Seperated Sidewalk (>1.0m buffer from Roadway)
	Any	Multiple Lanes per Direction		Protected Bicycle Lane	
>50km/h				Protected Bicycle or Reduce Speed	Seperated Sidewalk (>1.5m buffer from Roadway)
				Protected Bicycle or Reduce to Single Lane & Reduce Speed	
	Greater than 6,000	*Any*		Protected Bicycle Lane or Bicycle Path	Seperated Sidewalk (>2.0m buffer from Roadway)

4.6 MULTI-USE PATHS & TRAILS

Along with sidewalks and trails, multi-use paths (MUPs) comprise the most extensive portion of Stony Plain's active transportation facilities. Though the history of these facilities has been largely for recreational purposes, they have the potential to play an increasing role in a multimodal transportation system. There are two key areas where updates to the design standards are necessary to reflect this change in use, along with the growing understanding of safety on these facilities:

1. Facility width.
2. Crossing & intersection treatments.

FIGURE 4.4: MULTI-USE PATHWAY DESIGN
Source: BC AT DESIGN GUIDE



4.6.1 PATH WIDTH & KEY FEATURES

Path design plays an important role in the safety and satisfaction of users. Though pathways are found to be more comfortable by users, their generally circuitous design and poor sightlines have shown to have problematic safety impacts.

RECOMMENDED MEASURURES TO CONTINUE TO CAPTURE THE INHERENT COMFORT AND ENJOYMENT OF MUPS WHILE IMPROVING SAFETY:

- Minimum 3m width, with 4m being preferred.
- Avoid overly circuitous routing.
- Maintain clear sightlines, particularly around corners.
- Avoid the use of bollards or other obstacles on the pathway.
- Apply a centreline and edge lines to improve visibility for users at night.
- Consider separate spaces for pedestrians and cyclists where high volumes of users are expected.

4.6.2 ROADWAY CROSSINGS & INTERSECTIONS

Intersections present the primary conflict points between pathway users and motor vehicle traffic. This makes their design a priority for ensuring a consistently safe and comfortable network of facilities.

Trails and MUPs are unique in terms of bicycle and pedestrian facilities in that they function for both cyclists and pedestrians in two directions. This context results in an increased safety risk at intersections with the roadway as drivers must look out for users traveling in two directions and at varying speeds Compared to unidirectional bike facilities, MUPs and bidirectional facilities are found to be ~50% less safe at intersections. These risks can be mitigated through design that highlights the presence of the facility and reduces conflicts by slowing turning vehicles and providing optimal signal phasing where applicable.

RECOMMENDED SAFETY FEATURES:

- Set back crossing from main roadway 5-6m (**Figure 4.5**).
- Leading or protected bicycle/pedestrian signal phase when feasible.
- Raised crossings at minor intersections, driveways, and midblock crossings (**Figure 4.6**).
- High-conspicuity pavement markings.
- Provide refuge island (≥3m in width) on collector and arterial streets, when possible, to allow pedestrians and cyclists to deal with one direction of traffic at a time and help slow drivers at crossings.

FIGURE 4.5: SET-BACK CROSSING AT SIDESTREET
(SOURCE: MASSDOT 2017)

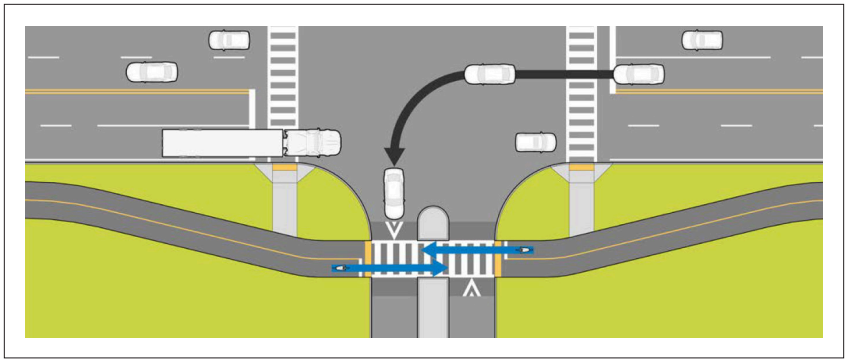
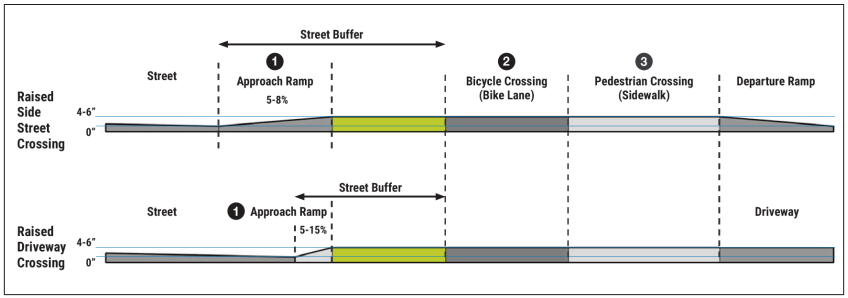


FIGURE 4.6: ELEVATION PROFILE FOR RAISED CROSSINGS
(SOURCE: MASSDOT 2017)



4.6.3 ROUNDABOUTS

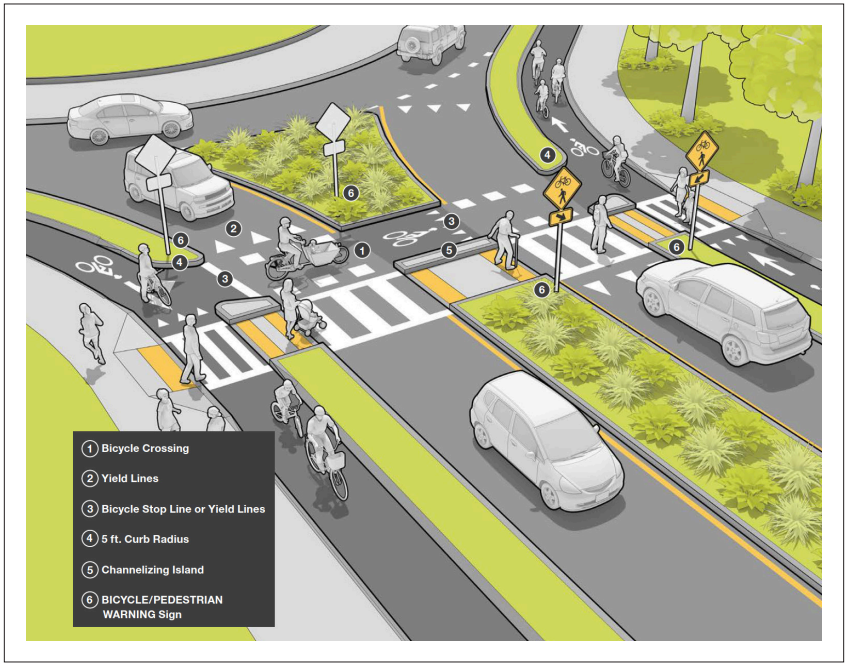
Roundabouts can provide safety and aesthetic benefits for road users but have also presented barriers for pedestrians and cyclists when not designed with proper consideration.

RECOMMENDED MEASURES AT ROUNDABOUTS WHERE PEDESTRIAN AND OR CYCLING FACILITIES EXIST:

- Entry and exit design speed of the roundabout should be limited to 30km/h.
- Raised pedestrian and cycling crossings should be used. This is highly recommended at crossing with a multi-use path or bidirectional bicycle facility.
- Pedestrian and cyclist crossings should be perpendicular to the curb line.

Figure 4.7 highlights the key components required to create a pedestrian and bicycle friendly roundabout. Though this illustration presents separate pedestrian and cycling facilities, the same approach applies to a context where multi-use paths are present.

FIGURE 4.7: BICYCLE AND PEDESTRIAN CROSSING AT ROUNDABOUTS
(SOURCE: MASSDOT 2017)



4.6.4 TRAIL TERMINUS

Where a trail or MUP terminates at a roadway (with no connecting off-street facility) it is important to provide a design treatment that allows cyclists to transition smoothly onto, or from the roadway without the need to use the adjacent sidewalk. This ensures that the connection between facilities is obvious and does not require significant detour or dismounting the bike.

RECOMMENDATIONS:

- All trail termini should have an accessible curb ramp to the roadway.
- Curb cuts should be as wide or wider than the approaching facility.
- Provide cyclist crossings on collector roads.
- Install a TAC approved trail crossing sign (e.g. WC-32) along the intersecting roadway.
- Ensure all transitions are as smooth as possible.

4.7 PAVEMENT MARKINGS

Providing clear and consistent pavement markings is important to communicate facility information to all road users. As MUPs and trails are multimodal facilities, it is important to communicate this when they cross the roadway so that drivers can expect users crossing at different speeds than if it were only a pedestrian crossing.

RECOMMENDATIONS:

- Provide a mixed crossing where pedestrians and cyclists are mixed (**Figure 4.8**).
- Use elephant's feet markings (shown in **Figure 4.9**) to denote a bicycle crossing.
- Use a green surface treatment to increase the conspicuity of the crossing in locations with high bicycle volumes or high vehicle turning (**Figure 4.9**).

FIGURE 4.8: COMBINED CROSSING WITH ELEPHANT'S FEET MARKINGS
Source: OTM BOOK 18

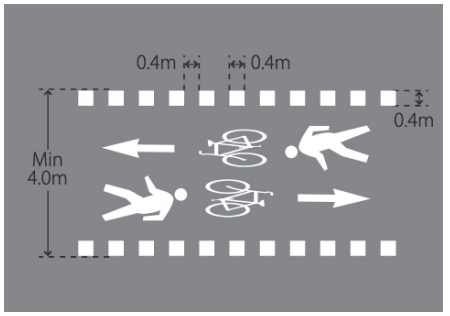


FIGURE 4.9: COMBINED CROSSING WITH GREEN PAVEMENT MARKINGS

4.8 TRAIL SUPPORTING AMENITIES

Common trailside amenities include benches, bike racks, bicycle repair stations, water fountains, garbage and recycling bins, shelters in case of rain, and educational materials.

The presence and location of trailside amenities can significantly improve the experience for all users. While the design of individual elements may be subject to site specific context, the following design principles should be considered:

MAINTAIN A CONSISTENT LOOK AND FEEL:

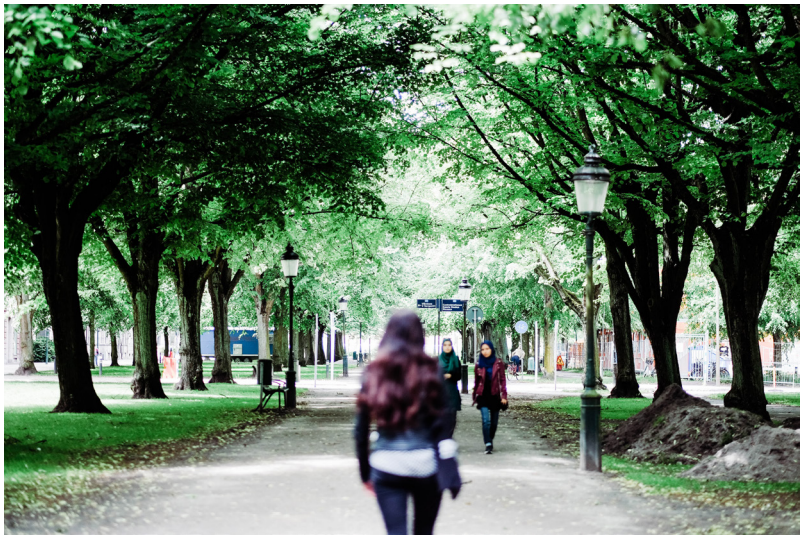
- Deliver a sense of continuity throughout the trail system.

PLACE AMENITIES WELL OUTSIDE THE CLEAR ZONE OF THE PATHWAY:

- Ensure users engaging with the trailside amenities do not obstruct other trail users (e.g. place benches ≥1m from edge of the pathway so those sitting are a comfortable distance from passing users).
- Reduce the likelihood of users colliding with amenities.

ENSURE AMENITIES DO NOT OBSTRUCT SIGHTLINES OF TRAIL USERS:

- Reduce safety challenges associated with blocked sightlines.



5.0 STRATEGIES AND ACTIONS

Active transportation strategies presented herein include infrastructure aimed at increasing connectivity, convenience and safety. In addition, effective promotion of active transportation strategies are offered to further promote and enable active transportation in Stony Plain.

Priority actions and projects were identified by desktop and in-field observation of existing conditions and consideration of the recommended infrastructure design guidelines from **Section 4**.

Descriptions of strategies and recommendations are provided within each strategy subsection. Specific actions are then presented to achieve strategy recommendations.

The actions include five Catalyst projects that are high priority actions which are described in greater detail. The Catalyst projects may be introduced on a trial basis to inform future ongoing prioritization of similar projects.

Recommended actions from **Section 5** are summarized in **Section 6** which provides further implementation guidance.

5.1 STRATEGY 1: INFRASTRUCTURE DESIGN

Four infrastructure areas were selected based on their importance in creating a safe and comfortable active transportation network that is suitable for all ages and abilities (AAA):

1. Trail transitions.
2. Bike route buffering.
3. Pedestrian crossings.
4. Trail crossings.

1. TRAIL TRANSITIONS

2. BIKE ROUTE BUFFERING

3. PEDESTRIAN/BICYCLE CROSSINGS

4. TRAIL CROSSINGS

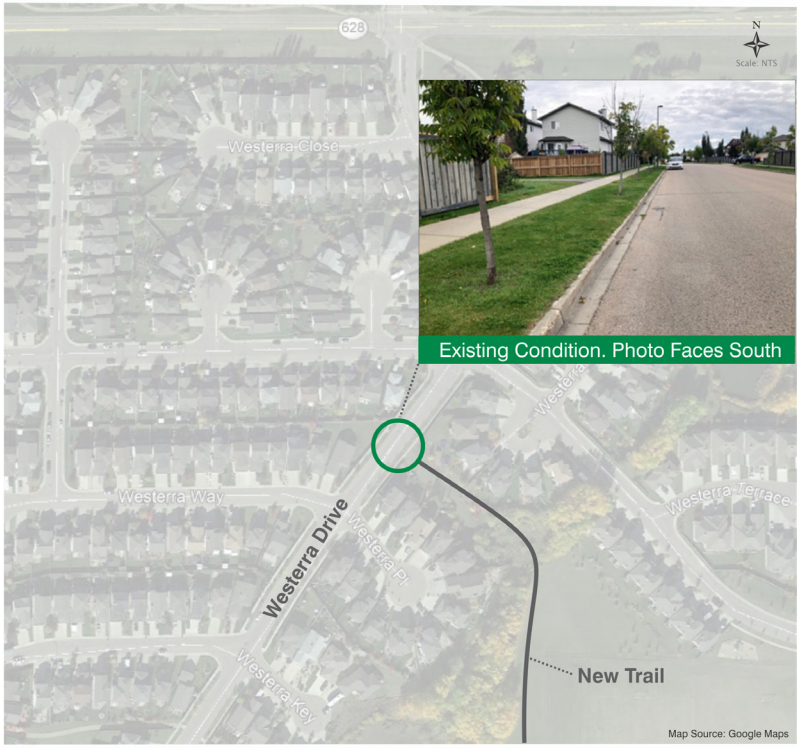
5.1.1 TRAIL TRANSITIONS

During the team's site visit inconsistent trail to road transitions were observed in terms of letdown widths or the lack of a letdown. Inconsistent trail transitions present safety obstacles for cyclists. Consistent letdown treatments help create motorist awareness of potential cyclist presence.

Exhibit 5.1 shows recommended trail to road transition sites that could be addressed through the town. Locations that do not meet desired standard should consider provision of curb letdowns and indication of the trail's presence on the roadway. Indication of the trail may be in the form of a marked or special crosswalk or signage or pavement markings.

ACTIONS:

- Conduct spot improvements to areas requiring curb letdowns and or better indication of trail and road transitions. Begin with Trail that runs parallel with Whispering Waters Creek.
- **Catalyst Project 1** offers a recommendation for a high priority location where introduction of curb letdowns and road markings signage is encouraged.



CATALYST PROJECT 1: WESTERRA DRIVE CURB LET-DOWN

- Consider introduction of a trail to road curb let-down and marked pedestrian bicycle crossing on Westerra Drive between Westerra Boulevard and Westerra Place.
- This location was given priority due to it's proximity to Memorial Composite High School and its connection to new trail.
- This location is labelled Cat1 in the Recommended Trail Network.

Exhibit 5.1

Trail Transitions

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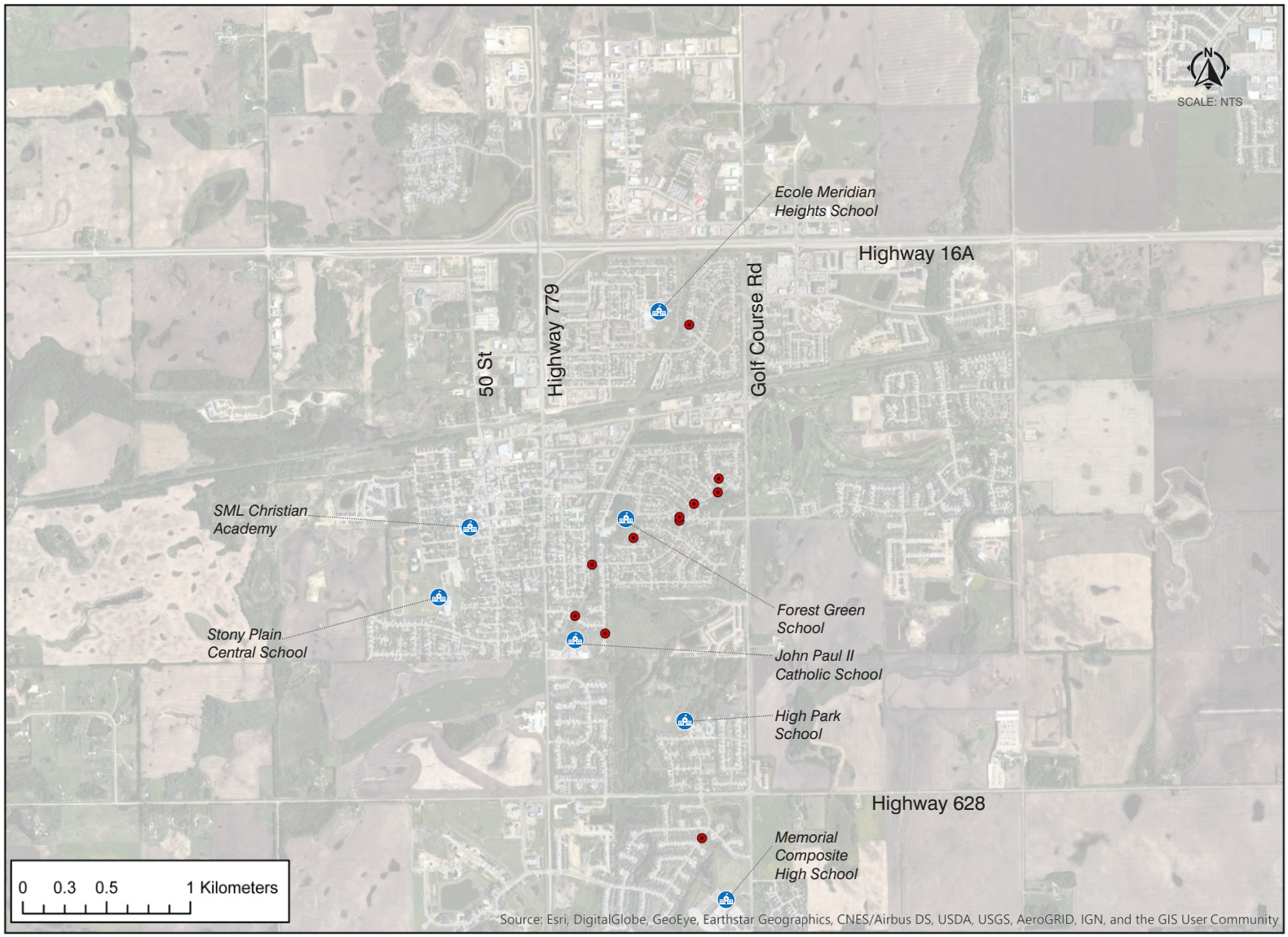


bunt&associates

Trail Transition School

5.1.2 PROTECTED AND BUFFERED BIKE LANE

Protected bike lanes have become the standard for realizing the level of cyclist safety required to attract the largest possible demographic of cyclists. Buffered bike lanes (painted barrier) offer less protection to cyclists but can be used in place of protected bike lanes due to easier snow clearance maintenance and lower cost.

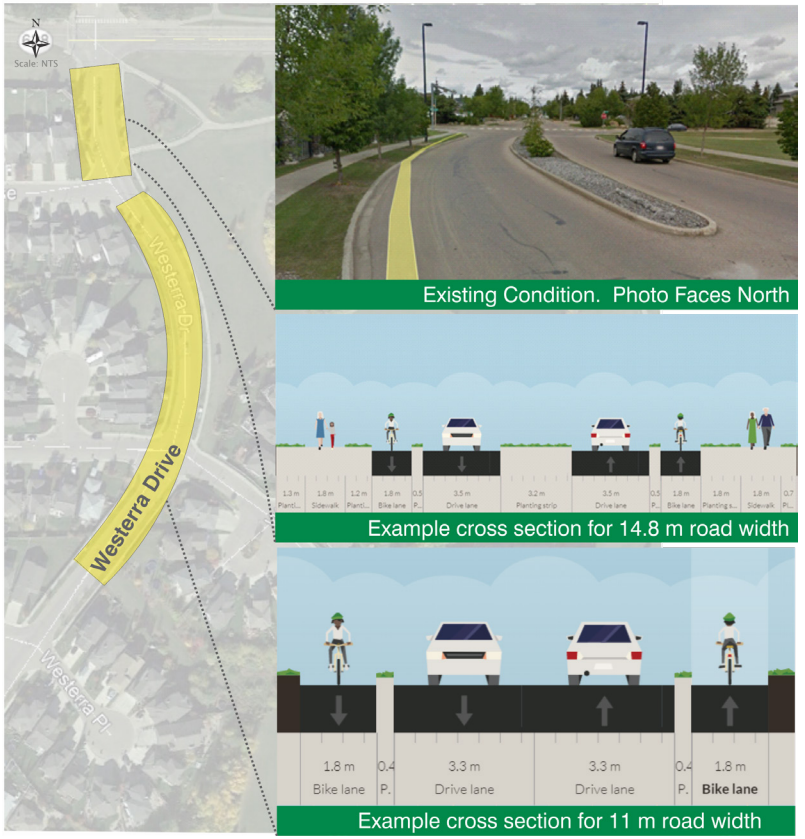
Stony Plain has a wealth of off-road trails that are used by cyclists. Trails are preferred over on-road cyclist amenities as they offer greater separation from vehicle traffic. In areas without trails and where trail development is not feasible due to inadequate space, on-street bike lanes that are protected or buffered from vehicle traffic can provide cyclists a route extension that offers separation from vehicle traffic.

It is recommended that the Town of Stony Plain consider introducing buffered bike lanes on collector and arterial roads that do not have adjacent trails. Higher volume roads are encouraged to use protected bike lanes which offer physical separation over buffered bike lanes that have painted buffers and/or are buffered by parked cars. Buffered bike lanes can initially be painted as buffered lanes then upgraded to protected lanes when feasible.

It is recommended that the Town begin with buffered bike lanes in the short-term, then consider adding physical barriers such as removable planter boxes which can be spaced out rather than be continuous. It is noted that adding physical barriers does require extra consideration for snow removal.

ACTIONS:

- Implement recommended trail network with buffered bike lanes as extensions of the trail network. These locations are highlighted on **Exhibit 5.3** which presents trail recommendations.
- Implement a trial of the Town's first buffered bike lane segment. **Catalyst Project 2** offers a potential location for the introduction of protected or buffered bike lanes.



CATALYST PROJECT 2: WESTERRA DRIVE BUFFERED BIKE LANES

- Consider introduction of a protected or buffered bike lane on Westerra Drive from Highway 628 to Westerra Close.
- Option to extend bike lane south to trail connection on Westerra Drive between Westerra Boulevard and Westerra Place.
- This location is labeled Cat2 in the Recommended Trail Network.

Note: Cross sections are shown with protected bike lanes, however the same dimensions can be used for buffered bike lanes.

5.1.3 TRAIL CROSSINGS

Trails in Stony Plain are currently unmarked as they cross roadways and driveways.

Using painted crossings with elephant's feet markings and signage as they cross roadways and driveways alert both motorists and trail users of crossing points.

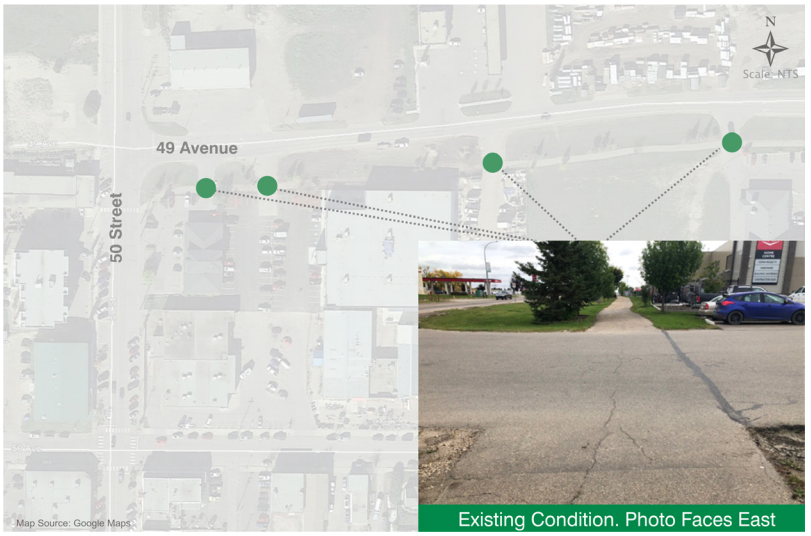
It is recommended that the Town consider painting trails as they cross roadways and driveways. This can also be augmented with signage on road approaches that indicate the presence of a trail.

ACTIONS:

Catalyst Project 3 recommends a priority one block section of trail for introduction of painted trail crossings.

A Town led review of the trail network is recommended in order to identify subsequent locations for painting trail crossings. A staged roll out of painted trail crossings should prioritize the following:

- Continuity (continued westward along 49 Avenue).
- Consistency (at commercial driveways).
- Areas of noted conflict.
- Crossing with highest vehicle volumes.
- Areas with sightline limitations.



CATALYST PROJECT 3: PAINT TRAIL CROSSINGS

- Consider introduction of painted trail crossings.
- These locations were selected to trial painted Trail crossings as they form key existing and future network connections and have high community visibility.

5.2 STRATEGY 2: CONNECTIVITY

Connectivity reflects an active transportation network that is continuous with connections to strategic community destinations such as schools and employment centres. For trails, this strategy prioritizes the build out of a "spine network" and strives to provide continuous routes to major destinations filling in missing links. For sidewalks this strategy seeks continuity through downtown and commercial areas.

5.2.1 SIDEWALK IMPROVEMENTS & PEDESTRIAN CROSSINGS

Stony Plain has a robust sidewalk network as well as strong advocacy for sidewalks in its reports, studies and plans for new development. Ongoing review of Stony Plain's sidewalk network can assist filling gaps and ensuring pedestrian crossing treatments are provided at key locations.

ACTIONS:

- Seek funding for a Pedestrian Route Improvement Program. The Town can identify top priority locations to review based on community comment and staff initiatives. The Town reviews locations for sidewalk improvements and potential new road crossings using TAC Pedestrian Crossing Warrants and Alberta's Traffic Safety Act. Objectives of a Pedestrian Route Improvement Program include:
  - Continued review of the sidewalk network and the need for future maintenance projects and accessibility improvements.
  - Review pedestrian crossings to identify locations that may require alternative pedestrian crossing treatment (e.g. paint markings, signage, special crosswalks with flashing beacons, etc.).
  - Remove sidewalk obstacles to create a minimum 1.8m clearance, and preferably wider on commercial streets.
  - Look for opportunities to reduce pedestrian crossing distances with use of curb bulb-outs and pedestrian refuge islands.
- Ongoing updates to the Town's Sidewalk Network Plan. Key destinations as well as recommended sidewalk network improvements are identified on **Exhibit 5.2**.
  - **Catalyst Action 4** provides a specific location considered a high priority project due to its proximity to schools.

CATALYST PROJECT 4: ADD SIDEWALK AND PEDESTRIAN CROSSING

- Construct sidewalk to east side of 51 Street between 50 Avenue and 51 Avenue.
- Add a signed and marked pedestrian crossing off 50 Avenue on east side of 51 Street. Conduct Pedestrian Crossing Warrant analysis to determine appropriate crossing type.
- This location was selected as it is near a school and was identified by multiple respondents during the public engagement process.

Further details on the recommended sidewalk network improvements illustrated in **Exhibit 5.2** are summarized in **Table 5.1**. Locations were selected during the team's in-field review.

TABLE 5.1: RECOMMENDED SIDEWALK NETWORK DETAILS

MAP REFERENCE	LOCATION	DESCRIPTION	RATIONALE	LENGTH	COST	TIMEFRAME	RANK
Cat4	51st Street from 50 Avenue to 51 Avenue.	Sidewalk along east edge of 51 Street.	Missing network link near downtown.	85m	$25,500	Short	1
Cat4	East Leg of 50 Avenue and 51 Street intersection.	Signed and Marked Pedestrian Crosswalk.	Identified in public engagement, route to school.	16m	$2,500	Short	2
SA	50 Avenue from 50 Street to existing sidewalk.	Sidewalk along north edge of 50 Avenue.	Missing network link near downtown.	150m	$45,000	Short	3
SB	52 Street from 51 Avenue to 55 Avenue.	Sidewalk along east edge of 52 Street.	Missing network link near recreational facilities.	330m	$99,000	Short	4
SC	49 Avenue from Golf Course Road to existing trail.	Sidewalk along north edge of 49 Avenue.	Missing network link in commercial area.	500m	$150,000	Short	5
SD	49 Avenue from Highway 779 to 50 Street.	Complete sidewalk along north edge of 49 Avenue.	Missing link in network in commercial area	260m	$78,000	Short	6
SE	49 Street from 50 Avenue to 53 Avenue.	Complete sidewalk along west edge of 49 Street.	Missing link in network in residential area.	200m	$60,000	Short	7
SF	44 Avenue from Highway 779 to sidewalk termination.	Complete sidewalk along south edge of 44 Avenue.	Missing link near amenities.	50m	$15,000	Short	8
SG	43 Avenue from 46 Street to 44 Street.	Sidewalk connecting north edge sidewalks, and south edge between parking lot trail and 44 Street.	Missing link near school, playground and residential.	130m +30m	$48,000	Short	9
SH	44 Avenue from Highway 779 to 50 Street, and 50 Street north to trail.	Sidewalk along north edge of 44 Avenue, and east edge of 50 Street.	Missing link near Heritage Park and commercial area.	510m	$153,000	Short	10
SI	46 Avenue from South Park Drive to Brookview Way.	Sidewalk along north edge of 46 Avenue.	Missing network link near hospital.	110m	$33,000	Medium	11
SJ	51 Street from 50 Avenue to 52 Avenue.	Sidewalk along west edge of 51 Street.	Missing network link in downtown.	165m	$49,500	Medium	12
SK	Road leading to Umbach Off Leash Dog Park.	Sidewalk along east edge of Access Road.	Missing link to recreational area.	330m	$99,000	Medium	13
SL	49 Street from 50 Avenue to 53 Avenue.	Complete sidewalk along east edge of 49 Street.	Missing link in network in residential area.	200m	$60,000	Medium	14

TABLE 5.1: RECOMMENDED SIDEWALK NETWORK DETAILS, CONTINUED

MAP REFERENCE	LOCATION	DESCRIPTION	RATIONALE	LENGTH	COST	TIMEFRAME	RANK
SM	50 Avenue from Highway 779 to Brown Street.	Sidewalk along north edge of 50 Avenue.	Missing link in network in commercial area.	460m	$138,000	Long	15
SN	44 Avenue from Highway 779 to 50 Street.	Sidewalk along south edge of 44 Avenue.	Missing link in network in commercial area.	375m	$112,500	Long	16
SO	Golf Course Road from Boulder Blvd. south. to Boulder Blvd. north.	Sidewalk along west edge of Golf Course Road.	Missing link in network in commercial area.	970m	$291,000	Long	17

TABLE 5.1 NOTES:

Priority action for **Map Reference SA** is to be developed to trail standard over sidewalk. As such this project is also provided in the recommended trail network as **Map Reference B**. The south connection of this section is currently sidewalk while the north end is trail. Continuation of trail at this location is priority, with sidewalk standard as the secondary option to be implemented if land acquisition factors impact trail feasibility.

Approximate costs in **Table 5.1** are current estimates. Costs include materials and installation costs but do not include land costs. Costs were calculated using the following rates:

- Sidewalks (2m width) - $300/m.
- Marked pedestrian crossing, with associated roadway signs, not a Special Crosswalk which has push button activation or flashing lights or associated electrical connections - $2,500.

Network recommendations in **Table 5.1** are given a short-term, medium-term or long-term timeframe. Short-term projects are typically given a one to three-year timeframe and medium timeframe a three to six-year timeframe, however scheduling is dependent on Town resources. Long-term timeframe projects are typically best addressed in coordination with adjacent land development.

Applied rankings in **Table 5.1** are not definitive, they represent a current opinion. Implementation sequencing of recommended projects should be reviewed by Town of Stony Plain staff on an on-going basis with consideration of future circumstances.

Exhibit 5.2

Recommended Sidewalks

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Short-term Medium-term Long-term School

5.2.2 UPDATE TRAIL NETWORK PLAN

Stony Plain has a robust trail network. Build-out and promotion of the trail network can leverage Stony Plain's impressive existing trail network to support sustainable active mode growth.

Projects and priorities were established in consideration of anticipated impact to achieve key strategies. These include:

- Infrastructure that improves safety.
- Network expansion that increases connectivity.
- Initiatives that promote and enable mode shift.

ACTIONS:

Update the Town's Trail Network Plan. Key destinations as well as recommended trail network improvements (short, medium and long-term) are identified on **Exhibit 5.3**. Details on these recommended trail network improvements are summarized in **Table 5.2**.

TABLE 5.2: RECOMMENDED TRAIL NETWORK PROJECTS

MAP REFERENCE	LOCATION	DESCRIPTION	RATIONALE	LENGTH	COST	TIME FRAME	RANK
Cat1	Westerra Drive, between Westerra Blvd. and Westerra Place.	Curb letdown plus roadside trail indication.	Trail gap, safety concern.	1 unit	$7,000	Short	1
Cat2	Westerra Drive from Highway 628 to Trail connection located between Westerra Blvd. and Westerra Place.	Buffered bike lanes along each road edge.	Separated cycling route extension.	500m (two sides)	$25,000	Short	2
Cat3	Paint trail crossings on south side of 49 Avenue from 50 Street to 48 Street.	Paint four commercial driveway crossings.	Trail identification.	4 locations	$2,000	Short	3
Cat5	44 Avenue & Golf Course Road intersection.	Direct trail from south side of intersection to north side of 44 Avenue using elephant feet on intersection's east crossing. Resurface for continuous trail routing. Resurface sidewalk east of intersection on 44 Avenue's south edge to sidewalk standard.	Differentiate between trails and sidewalks.	Elephant feet – 15m,	$5,000	Short	4
A	Brightbank Avenue, Oatway Drive and 55 Avenue, from Golf Course Road to 55 Avenue's west terminus.	Buffered bike lanes along each road edge. Example cross section shown in Figure 5.1.	Key east-west connection.	3km (two sides)	$120,000	Short	5
B	50 Street from 47 Avenue to connect to Existing Trail.	Trail along west edge of 50 Street.	Missing network link.	110m	$22,000	Short	6
C	50 Street between 47 Avenue and 44 Avenue.	Improve existing trail to create separation from road.	Substandard network link.	150m	$30,000	Short	7
D	50 Avenue from 50 Street to 51Street.	Buffered bike lanes along each road edge.	Missing network link.	360m (two sides)	$14,000	Short	8
E	Highway 628 from Highway 779 to Willow Way.	Highway 628 north edge trail extension.	Missing network link.	300m	$60,000	Short	9
F	57 Avenue to Brickyard Drive.	Trail development.	Missing network link.	600m	$120,000	Short	10
G	50 Street from 50 Avenue to 49 Avenue.	Resurface with buffered bike lanes along each edge. Example cross section with parallel parking shown in Figure 5.2.	Missing network link.	2,400m^2	$350,000	Short	11
H	Creek Trail near Willow Lane to Golf Course Road near Garden Valley Drive.	Greenfield development, trail under construction.	Trail extension opportunity.	900m	$180,000	Short	12

TABLE 5.2: RECOMMENDED TRAIL NETWORK PROJECTS, CONTINUED

MAP REFERENCE	LOCATION	DESCRIPTION	RATIONALE	LENGTH	COST	TIME FRAME	RANK
I	Forest Green School south to lane.	Trail development.	Missing network link.	100m	$20,000	Short	13
J	Stony Plain to Spruce Grove.	Explore options for a trail connection.	Trail extension opportunity.	4km	$800,000	Short	14
K	49 Avenue from Highway 779 to Brown Street.	Trail along south edge of 49 Avenue.	Missing network link.	515m	$103,000	Medium	15
L	53 Avenue from 48 Street to 51Street.	Buffered bike lanes along each road edge.	Missing network link.	1.4km (two sides)	$56,000	Medium	16
M	51 Street from 50 Avenue to 55 Avenue.	Local street treatment, shared use signage and bicycle pavement stencils.	Missing network link.	10 signs, 10 pavement markings	$10,000	Medium	17
N	Connect Brickyard to Old Town from Brickyard Place to 53 Avenue.	Trail development.	Trail extension opportunity.	180m	$36,000	Medium	18
O	44 Avenue west of Golf Course Road.	Buffered bike lanes along each road edge.	Missing network link.	2.6km (two sides)	$104,000	Medium	19
P	44 Avenue east of Golf Course Road.	Continued trail development along north edge.	Missing network link.	1.2km	$240,000	Medium	20
Q	Briarwood Point to Briarwood Way.	Trail development.	Trail extension opportunity.	200m	$40,000	Medium	21
R	Veteran's Memorial Blvd. from 44 Avenue to Highway 16A.	Trail along west edge of Veteran's Memorial Blvd.	Trail extension opportunity.	320m	$64,000	Medium	22
S	Heritage Park to Glory Hills Road.	Trail development.	Trail extension opportunity.	1,000m	$200,000	Long	23
T	43 Avenue from 33 Street east to existing sidewalk.	Trail along south edge of 43 Avenue.	Missing link commercial area.	190m	$38,000	Long	24
U	57 Avenue from Highway 779 to western terminus.	Buffered bike lanes along each road edge.	Missing network link.	1km	$40,000	Long	25
V	Highway 779 from 44 Avenue to Meridian Sports Park.	Off-road trail.	Trail extension opportunity	2.7km	$540,000	Long	26
W	Graybriar neighbourhood to Silverstone Drive.	Requires a CN Rail crossing.	Missing network link.	80m	Variable depending on grade.	Long	27
X	Umbach Off Leash to Meridian Sports Park	Trail development.	Trail extension opportunity.	800m	$160,000	Long	28

Exhibit 5.3

Recommended Trails

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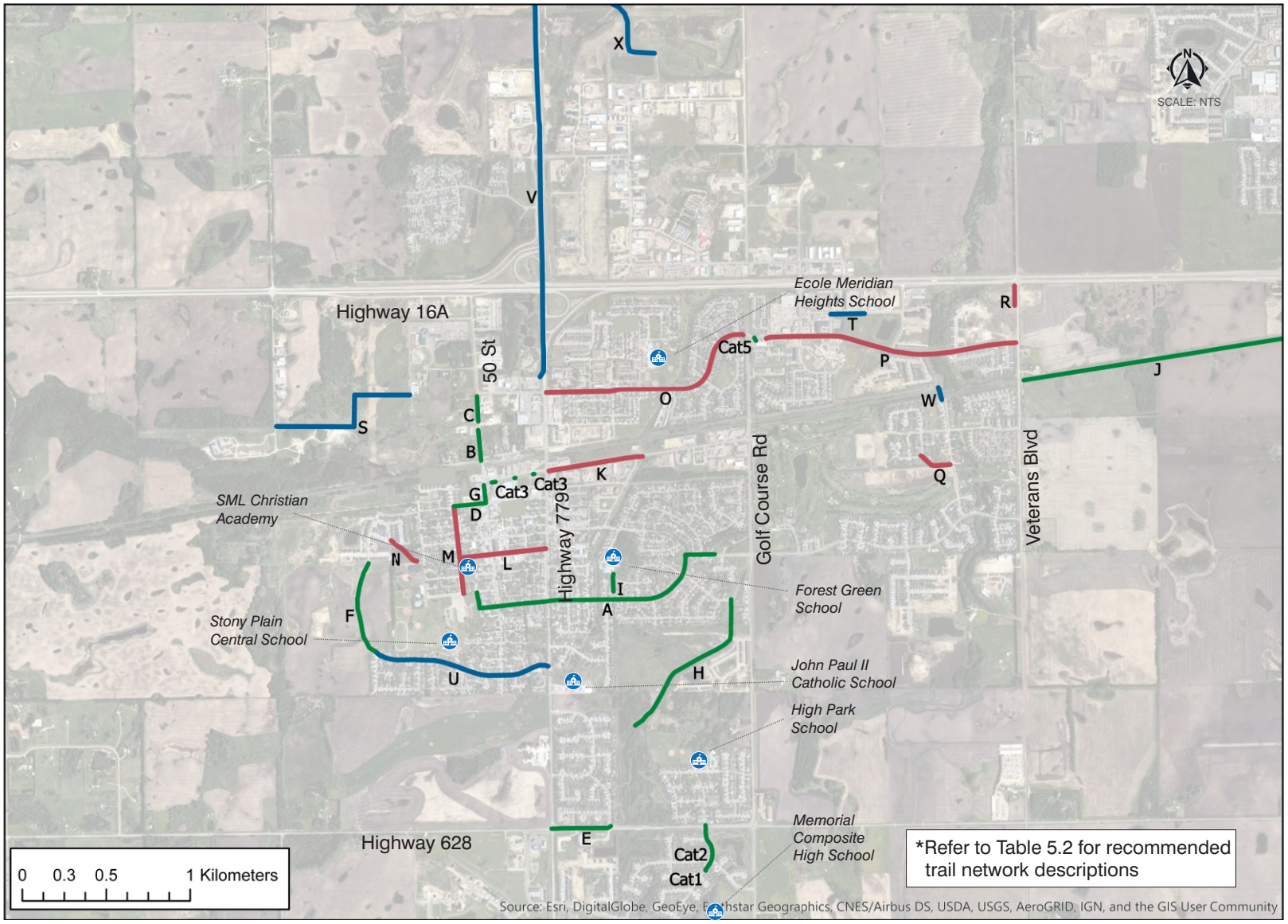


bunt&associates

Short-term Medium-term Long-term School

TABLE 5.2 NOTES:

Map Reference B is the same location as SA from the recommended sidewalk network. The south end of this section is sidewalk while the north end is trail. Trail should be implemented as priority, sidewalk as a secondary option if impacting land acquisition factors arise.

Network recommendations in **Table 5.2** are given a short-term, medium-term or long-term timeframe. Short-term projects are typically given a one to three-year timeframe and medium timeframe a three to six-year timeframe, however scheduling is dependent on Town resources. Long-term timeframe projects may be best addressed in coordination with adjacent land development.

Approximate costs in **Table 5.2** are current estimates. Costs include materials and installation costs but do not include land costs. Costs were calculated using the following rates:

- Curb let-down – $7,000 each.
- Trail at 3m width - $200/m.
- Trail resurfacing - $60/m.
- Trail painting - $50/m.
- Road resurfacing, adding protected bike lanes, repainting road lines - $150/m².
- Protected bike lanes (adjustable concrete barrier or planter protected) - $175/m.
- Buffered bike lanes (pavement markings, green conflict zone paint and signage) - $40/m.
- Pavement bicycle stencil markings - $500 each.
- Signs - $500 each.
- Elephant feet added to existing pedestrian crossing- $40/m.

Applied rankings in **Table 5.2** are not definitive, they represent a current opinion. Sequencing of recommended projects should be reviewed by Town of Stony Plain staff on an on-going basis with consideration of future circumstances.

Example cross-sections showing protected bike lanes (could also be buffered with paint rather than a physical barrier) on Stony Plain roadways such as 55 Avenue (Recommended Trail Network Item A) and 50 Street (Recommended Trail Network Item F) are presented in **Figure 5.1** and **Figure 5.2** respectively.

FIGURE 5.1: EXAMPLE CROSS SECTION FOR 55 AVENUE

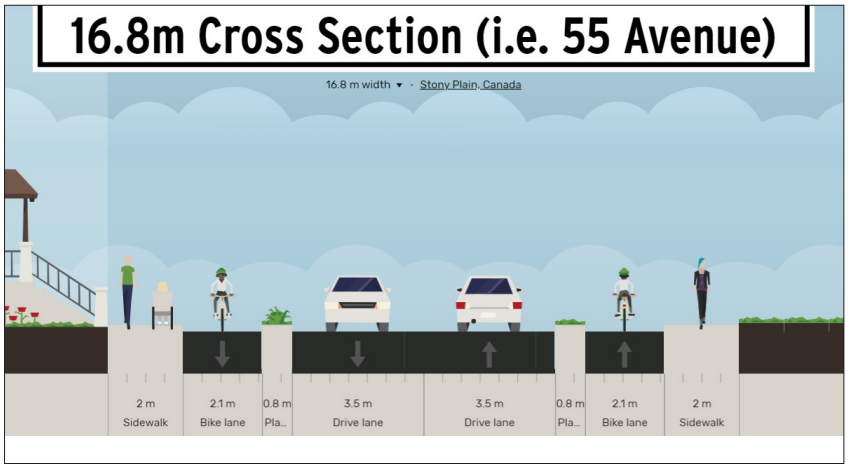
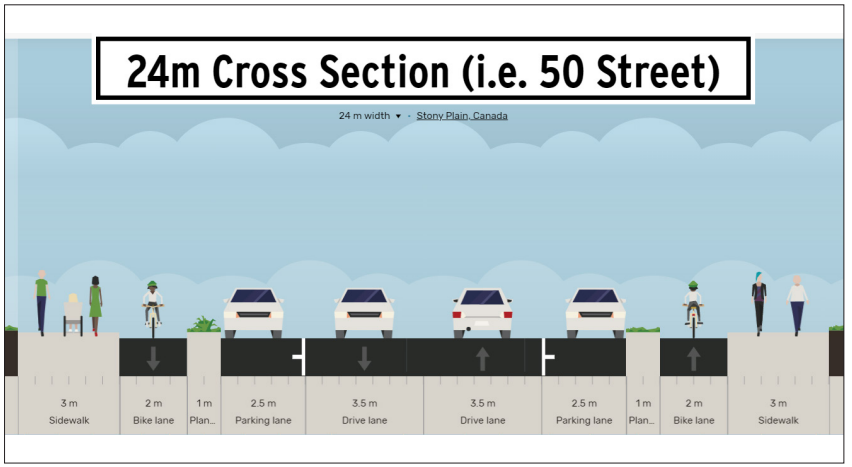


FIGURE 5.2: EXAMPLE CROSS SECTION FOR 50 STREET BETWEEN STREET BETWEEN 50 AVENUE AND 49 AVENUE



5.2.3 REGIONAL CONNECTIONS

Creating a trail route that connects Stony Plain with Spruce Grove was the most popular initiative identified during the public engagement process.

It is recommended that the Town review preferred alignment options for providing a trail linkage to Spruce Grove. Considerations include a trail adjacent to and parallel to the CN Rail corridor, a trail along Boundary Road north towards future Grove Drive, and a trail along Highway 16A between Veterans Boulevard and Jennifer Heil Way.

ACTIONS:

- Engage with Spruce Grove to seek partnerships. Potential partners may include the City of Spruce Grove, Greater Parkland Regional Chamber of Commerce, and Spruce Grove Active Transportation advocacy groups.
- Engage with CN Rail, Alberta Transportation, and adjacent municipalities to understand opportunities and constraint of a potential trail link between Stony Plain and Spruce Grove.

5.3 STRATEGY 3: PROMOTE AND ENABLE

This refers to initiatives that promote the use of or augment existing active transportation infrastructure. They are often referred to as culture building or social marketing initiatives. This includes vital components of a successful active transportation network such as trail maintenance, wayfinding, areas of respite, and end of trip facilities as well as innovative initiatives such as winterizing trails and identifying avenues for building partnerships.

5.3.1 DIFFERENTIATE BETWEEN TRAIL AND SIDEWALK NETWORKS

Sidewalks typically do not provide the width required for a cyclist to comfortably and safely overtake a pedestrian. Some cyclists (e.g. vulnerable users including children, or older but less experienced adults) however, use sidewalks to separate themselves from vehicle traffic where trails or other protected bike facilities do not exist. The risks that arise from pedestrians unexpectedly sharing sidewalks with cyclists is a growing concern with increasing numbers of people cycling, and speed differentials increasing due to the growth of electric assist forms of mobility.

It is recommended that the Town take steps to more clearly differentiate the Town's trail network from the sidewalk network. This can be done by consistently applying different surface treatments (e.g. paint markings, or materials) to the trail network.

ACTIONS:

- Apply consistent surface materials, colours to the trail network that differentiate the trails from sidewalks. These could include driveway crossing treatments, wayfinding signage or trail pavement markings.
- Develop a comprehensive Trail Wayfinding and Signage Plan.
- **Catalyst Project 5** offers recommended improvements to an area with trail and sidewalk ambiguity.

CATALYST PROJECT 5: DIFFERENTIATE BETWEEN TRAILS AND SIDEWALKS

Purpose is to differentiate between Trail and sidewalk networks.

1. Upgrade sidewalk on north edge of 44 Avenue, between 37 Street and 44 Avenue, to Trail standard.
2. Convert Trail on south side of 44 Avenue, east of 44 Avenue, to sidewalk standard.
3. Encourage cyclists to cross 44 Ave with signage. Potential opportunity to coordinate with wayfindng/signage plan.
4. Consider adding elephant feet and green paint to crossing to indicate cyclist presence and to extend onto trail to help differentiate trail from sidewalk.

5.3.2 TRAIL WAYFINDING PLAN

A Trail Wayfinding and Signage Plan can promote and support trail use. It will also help differentiate Stony Plain's shared use trail network from its sidewalk network.

ACTIONS:

Initiate a Trail Wayfinding and Signage Plan. The Plan should include the following:

- Engagement with public to name key trail routes and trail segments.
- Application of a consistent trail signage typology.
- Signage that includes direction and distances to key destinations.
- Trail-side maps and online map materials.
- Consideration of neighbourhood entry or gateway signs for the trail system along the creek.

5.3.3 MAINTENANCE

Alberta winters can be damaging to trails. Surface maintenance impacts the safety and comfort of all users.

ACTIONS:

Seek funding sources for trail maintenance projects, such as an annual allocation in the Infrastructure Rehabilitation Program. The budget can be used for items such as resurfacing and repairs. Priority locations can be based on staff judgement with priority to the most damaged and most heavily used trails. Trail maintenance tasks can also include water and ice management.

5.3.4 TRAILSIDE AMENITIES

Trailside amenities add important and significant value to a trail network. They provide places of refuge and add significant recreational value. Common trailside amenities include benches, bike racks, bicycle repair stations, water fountains, garbage and recycling bins, shelters in case of rain and educational materials.

ACTIONS:

- Seek funding sources for the addition of trailside amenities. Potential funding sources are an annual allocation in the Town's annual capital works budget or inclusion within the Town's Recreation & Culture fiscal category.
- Explore partnerships with local businesses to provide additional bicycle parking for commercial areas.
- Proceed with development of transit hubs as identified in the Old Town Community Plan. Look to add bicycle parking to identified transit hub locations.
- Develop a Trailside Amenity Plan in conjunction with a Wayfinding and Signage Plan.
- Strive for minimal street furniture, lighting standards, power pole or utility box intrusions into trails and sidewalk clearance areas.

Stony Plain trailside amenities

5.3.5 POLICY

Prioritizing active transportation at a policy level will be among the most impactful initiatives. Solidifying budget for active transportation projects will provide momentum for continued mode growth.

ACTIONS:

- Seek funding for Active Transportation Capital Works in the Town's Roads Reserve funding program or another annual funding source such as Alberta's Project Macro and Micro Grant programs, which would address the following categories of active transportation infrastructure:
  - Sidewalk review.
  - Conducting pedestrian crossing warrants.
  - Trail maintenance.
  - Trail amenities.
- Conduct a review of current policies and fiscal categories. Focus on:
  - Adapt new active transportation design standards based on recommended design guides.
  - Ensure current best practice in universal accessibility is considered with new development and roadworks.
  - Amend municipal standards to ensure alignment with provincial standards.
  - Support higher density and infill development to encourage short trips.

5.3.6 PARTNER FOR PROMOTION AND ENABLING

Enabling residents to spearhead active transportation growth is vital. The more residents that become involved in growing active transportation the larger the foundation for change.

It is recommended that the Town seek partnerships with local organizations to promote events such as Active Transportation to school week, safe routes to school programs and school mode split challenges. Partnership may include funding or promotion of events using the Town's social media and outreach tools.

ACTIONS:

- Partner with groups such as Ever Active Schools, which is "a provincial initiative design to create and support healthy school communities". Ever Active Schools is active in Stony Plain with initiatives such as trailside stories.
- Partner with local emergency services to promote road and trail safety.
- Engage with all demographics including vulnerable demographics (i.e. children and seniors) to identify barriers and needs.
- Other local groups to engage with to seek common active transportation objectives may include:
  - Rotary Club of Stony Plain and their Rotary Run for Life event.
  - Greater Parkland District Chamber of Commerce.
  - Kinsmen Club of Stony Plain.
- Consider the trial of an e-scooter program.

5.3.7 TRAIL LIGHTING

Lighting increases safety and trail use feasibility during early morning and evening periods, especially during winter months. Lighting can also assist with trail branding, similar to a trail signage plan.

ACTIONS:

- Conduct and implement a Trail Lighting Plan to identify areas for improved lighting.

5.3.8 WINTERIZE

Winter in Stony Plain brings obstacles of ice and snow. These elements can be addressed with snow clearance and ice removal. They can also be embraced by presenting the opportunity for other forms of active transportation.

It is recommended that the Town consider a winterize trail campaign to celebrate winter and the opportunities it presents.

ACTIONS:

- Engage with local cross-country ski clubs such as Parkland Cross Country Ski Club to determine if tracks may be added to specific trail segments. Priority locations would link to the golf course as it currently provides cross country ski trails. Dual parallel trail areas such as sections of trail adjacent to Whispering Waters Creek would allow one route to be cleared for walking and cycling and the other parallel route to potentially be used for cross country skiing. This could be introduced as a demonstration project or pilot program.
- Similar to cross country track ski trails, the Town could also review the feasibility of creating sections of skating trails.

6.0 IMPLEMENTATION PLAN

The following outlines recommended priority action, quick build techniques, and a monitoring strategy focused on successful implementation of active transportation strategies for Stony Plain.

6.1 QUICK BUILD TECHNIQUES AND STRATEGIES

Catalyst projects can be used as demonstration projects. Pilot projects and interim designs can also be used to test certain infrastructure types. These "quick build" techniques have been identified to kick-start the implementation of the Stony Plain Active Transportation Strategy.

Five catalyst projects outlined in **Section 5** are summarized by approximate cost to implement in **Table 6.1**.

TABLE 6.1: SUMMARY OF RECOMMENDED CATALYST PROJECTS

RATIONALE	ACTIONS	EXHIBIT 5.3 REFERENCE	APPROX. COST
Safety with improved trail to road transitions	Introduce curb let down to connect Westerra Drive with new Trail near Memorial Composite High School, with road marking or pedestrian crossing.	Cat1	$5,000
Safety through bicycle route segregation	Introduce buffered bike lane segment on Westerra Drive south of its intersection with Highway 628.	Cat2	$5,000
Safety and branding through increased trail visibility	Paint trail crossings. Potential starting location may be along 49th Avenue.	Cat3	$4,000
Improve pedestrian network	Add sidewalk to east edge of 51st Street between 50th Avenue and 51st Avenue. Consider introduction of a signed and marked pedestrian crossing of 50th Avenue on east edge of 51st Street, conduct Pedestrian Crossing Warrant to determine crossing type.	Cat4 - On Exhibit 5.2	$15,000
Differentiate between trail and sidewalk networks	Direct Trail from south edge of intersection to north side of 44th Avenue using intersection's east leg crossing. Resurface for continuous Trail routing. Resurface sidewalk east of intersection on 44tth Avenue's south edge to sidewalk standard.	Cat5	$15,000

6.2 MONITORING STRATEGY

Monitoring the success and growth of active transportation in Stony Plain is a vital consideration. It can be used to continually refine initiatives and plans to provide updates to the community that can help motivate residents to further advance community goals.

It is recommended that The Town of Stony Plain establish a monitoring strategy to measure active transportation. Annual surveys of trail use and mode splits can be used to measure success and determine which initiatives are most popular and impactful.

ACTIONS:

- Active transportation mode split surveys at schools can be conducted with little cost or effort. The Town can coordinate with local schools to survey students regarding their transportation choices. Results can also be used for promotion in the form of mode split challenges between schools.
- Annual cyclist and pedestrian counts can be conducted on main trail routes.

6.3 PRIORITY ACTIONS

Table 6.2 summarizes recommended actions from **Section 5** and provides priorities in terms of short, medium or long timeframes for implementation. The suggested timeframes are based on the anticipated impact relative to cost. **Table 6.2** aims to identify the best opportunities for active mode growth considering budgetary restrictions, and time constraints. **Table 6.2** also provides order of magnitude cost estimates.

TABLE 6.2: SUMMARY OF RECOMMENDED ACTIONS

STRATEGY	ACTIONS	TIME FRAME	APPROX. COST
INFRASTRUCTURE DESIGN	Trail to road transitions marked with roadway signage and/or pavement markings.	Short	$1,000 per location
	Review and improve trail to road letdowns throughout Town. Begin with the trail located parallel to Whispering Waters Creek.	Short	$2,500 per location
	Introduce buffered bike lanes on identified priority collector and arterial roads.	Short	$40/m
	Introduce protected bike lanes on identified priority collector and arterial roads.	Medium	$175/m
	Paint trail at crossings of roads and commercial driveways.	Short	$500 per location
	Set up a Pedestrian Route Improvement Program to review sidewalk network and road crossing treatments.	Short	Administrative
CONNECTIVITY	Pursue updated sidewalk projects as identified on the Recommended Sidewalk Network Plan (Exhibit 5.2).	Short	Variable (Refer to Table 5.1)
	Pursue updated trail projects as identified on the Recommended Trail Network Plan (Exhibit 5.3).	Short	Variable (Refer to Table 5.2)
	Engage with Spruce Grove to initiate regional connection dialogue.	Short	Administrative
	Engage with CN Rail, Alberta Transportation, and adjacent municipalities to evaluate regional connection opportunities.	Short	Administrative
PROMOTE AND ENABLE	Apply consistent surface materials/colour to the Trail network for safety through consistency and for trail network branding.	Short	Variable
	Create and implement a Trail Wayfinding & Signage Plan, use plan to differentiate multi use trails from sidewalks. Include a trail naming campaign to engage residents.	Short	$60,000
	Update Infrastructure Rehabilitation Program to include and/ or prioritize trail maintenance including snow removal, resurfacing and surface repair projects.	Medium	Administrative
	Develop a Trailside Amenity Plan that addresses the needs for garbage cans, washrooms and trailside maps.	Short	$25,000
	Proceed with development of transit hubs with bike parking as identified in the Old Town Community Plan.	Short	No cost
	Explore Fiscal Plan to determine potential areas to add Active Transportation capital works into the Town's Corporate Plan.	Short	Administrative
	Update Town's Design Standards.	Short	Administrative
	Consider Universal Design requirements with new developments.	Short	Administrative
	Amend municipal standards if design guides do not comply with provincial standards.	Short	Administrative
	Support higher density and in-fill development.	Long	Administrative
	Seek local and regional partnerships with organizations such as Ever Active to promote active transportation.	Short	Administrative
	Create and implement a Trail Lighting Plan to improve and add lighting along trail network.	Short	$80,000
	Explore opportunities to create cross country ski trails on trails near golf course.	Short	Administrative
	Explore opportunities to create skating paths along the creek where there are parallel trails.	Medium	Administrative
	Conduct mode split surveys at schools.	Short	Administrative
	Conduct annual pedestrian and cyclist counts.	Medium	Administrative