Active Transportation Plan

Dymond
Haileybury
New Liskeard

City of • Ville de
Temiskaming Shores

City of Temiskaming Shores
December 2021

Acknowledgements

The City of Temiskaming Shores Active Transportation Plan (ATP) study team would like to express their thanks and appreciation to the following individuals who contributed to the development of the Plan.

We would also like to thank the members of the Temiskaming Shores Council, the public and stakeholders who offered their time and input to help develop the ATP for Temiskaming Shores.

Temiskaming Shores Study Team
Mathew Bahm
ATP Project Manager
Director of Recreation
City of Temiskaming Shores

Local Stakeholders
Bike Temiskaming Shores
Timiskaming Healthy Unit
Downtown New Liskeard Business Improvement Area

Consultant Team Members
Dave McLaughlin
ATP Consultant Project Principal
Principal, Manager of National Active Transportation Practice
WSP

Justin Jones
ATP Consultant Project Manager
Community Engagement Specialist and Active Transportation Planner
WSP

Abram Braithwaite
Ely DeSandoli
Amanda Gebhardt
Carly McEachern
Shawn Smith
Erica Stone
Cristina Valente
Sandy Yang

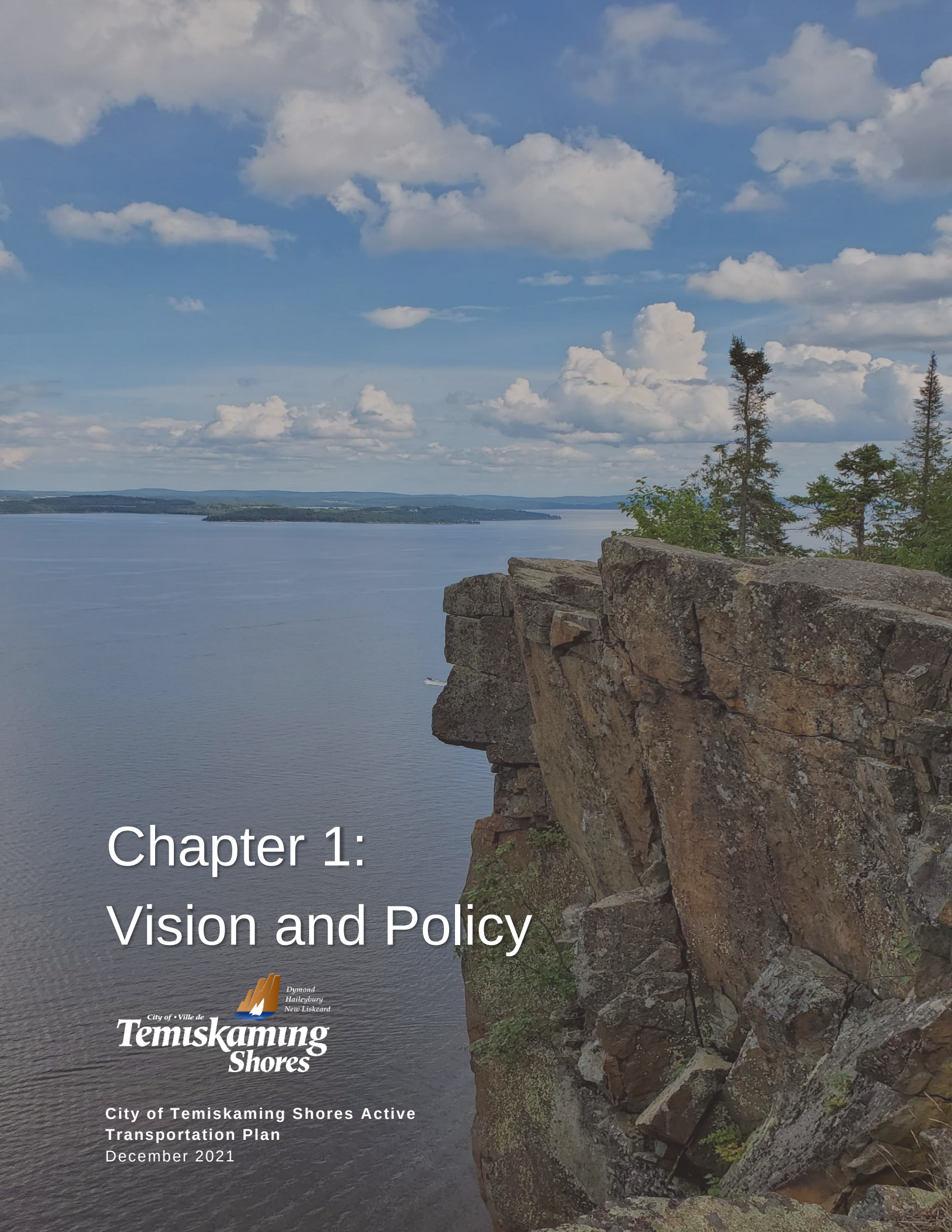
Temiskaming Shores Active Transportation Plan
Prepared by:

wsp

Table of Contents

Table of Figures

Table of Tables



Chapter 1: Vision and Policy

City of Temiskaming Shores Active Transportation Plan
December 2021

1 VISION AND ATP OBJECTIVES

1.1 INTRODUCTION TO THE ACTIVE TRANSPORTATION PLAN

Nestled along the shoreline of Lake Temiskaming, the City of Temiskaming Shores has positioned itself as one of Northern Ontario's leading communities in regards to active transportation. Beginning in 2011 with the investments into the first phase of the STATO Trail, the City set itself on a path towards developing a community where access to mobility supports the City's overall goals of providing a "healthy, safe and liveable community". Recognized in 2016 as just the second municipality in Northern Ontario to achieve a Bicycle Friendly Community Designation from the Share the Road Cycling Coalition, the City's support for Active Transportation has only grown in recent years. With new and growing programs to encourage residents of all ages and abilities to get active and with a strong foundation of existing infrastructure, the City is well positioned to become one of Ontario's leading communities for active mobility in the near term.

With this strong foundation in place, the City is creating an Active Transportation Plan (ATP) – a long-range guiding document that will provide the City and its partners with the tools needed to grow both the physical and social infrastructure necessary to support active transportation. This master plan is intended to provide strategic direction for an active transportation network that is equitable and accessible for people of all ages and abilities, and that can facilitate active living within the City in all of its settlement areas. The plan is also intended to provide direction and guidance on emerging trends that can shift the future of transportation within the City such as vision zero, micro-mobility, complete streets and age-friendly design.

An ATP is not a prescriptive document – it does not bind the City to specific investments, nor does it confer authority upon the City to construct projects. It is, for lack of a better term, a roadmap towards a future where every trip made in the City, regardless of whether it is by car, on foot, by bike or using a mobility device feels safe, comfortable and convenient. It communicates the concrete actions that could be taken to achieve that vision and provides the necessary policies and guidelines to ensure that actions taken align with best practices. Through the community engagement process associated with the development of the Plan, it also allows the community to make their voices heard. The Plan provides an ongoing method of building accountability, as it allows the progress made towards implementing the plan to be checked against the goals contained within it. It also provides a valuable baseline – a snapshot of where the City's active transportation programs are in 2021 as the Plan is prepared, which can be a useful reference as the Plan is implemented and the transportation habits of the residents of Temiskaming Shores begin to shift.

This Plan is the most recent document prepared by the City to advance its broader goals of becoming a more liveable, sustainable and prosperous community. It functions best when considered within the broader policy context of both the City and the Province, which help to provide the strategic foundations upon which the finer details of this Plan are built.

1.2 POLICY BACKGROUND

The City of Temiskaming Shores' Active Transportation Plan (ATP) aims to build on previous municipal planning documents to ensure that the ATP contributes to the goals and vision previously established by the City. In the past decade, there has been an increase in support for active transportation and recreation from all levels of government. Provincial and municipal governments are working together and establishing policies, research, strategies and initiatives that provide support for investments and improvements in active transportation.

One of the first steps in the process of creating the ATP was developing an understanding of the plans and policies that have helped set the foundation for the Plan, including those that have a direct influence on active transportation planning, design and implementation within Temiskaming Shores. The following is an overview of all plans and policies that were reviewed to inform the Active Transportation Plan.

1.2.1 POLICY REVIEW

PROVINCIAL POLICIES

The Province of Ontario has a robust suite of policies which lend support to active transportation and accessible, universal design. These policy documents provide guidance to local municipalities which can range from suggested actions to legislated requirements. In general, provincial guidance relating to active transportation tends to take the form of suggestions, guidance and support rather than legislative requirements for municipalities.

Policies Reviewed:

- Accessibility for Ontarians with Disabilities Act (2005)
- Ministry of Transportation Ontario Bikeways Design Manual (2014)
- Ontario Traffic Manual Book 15: Pedestrian Crossings (2016)
- Tour By Bike: Ontario's Cycling Tourism Plan (2017)
- #CycleON Strategy (2013) and Action Plan 2.0 (2018)
- Minimum Maintenance Standards for Municipal Highways O.Reg.239/02 (2018)
- Provincial Policy Statement (2020)
- Ontario Traffic Manual Book 18: Cycling Facilities (2021 update)

Policy Considerations:

Increase collaboration between government and industry partners to develop and enhance products and experiences that support cycling tourism (e.g. heritage trails, trail tourism programs), particularly in rural regions of the province. (Ontario's Cycling Tourism Plan, 2017)

Promote the use of active transportation and transit in and between residential, employment (including commercial and industrial) and institutional uses and other areas (s.1.8.1.b – Provincial Policy Statement).

Technical and legislative requirements are outlined in the Accessibility for Ontarians with Disabilities Act built environment guidelines and O.Reg.239/02.

Minimum Maintenance Standards for Municipal Highways sets out the requirements that the City is required to adhere to when designing AODA-compliant facilities and maintaining all highway facilities, including cycling and pedestrian infrastructure. Additional design guidance is provided in Ontario Traffic Manual Book 15 and 18, which provide direction on pedestrian crossing treatments and cycling facilities, respectively.

CITY POLICIES

The ATP will be influenced by policies at the municipal level such as the City's Official Plan, Recreation Master Plan, Age Friendly Community Plan and other planning documents. The City's Official Plan provides the most guidance on future development, as it is a statutory document required under the Planning Act and the Provincial Policy Statement. Policies that have the highest degree of relevance to the ATP are indicated in bold below.

Policies Reviewed:

- **Temiskaming Shores Official Plan (2015);**
- **Recreation Master Plan (2020);**
- Municipal Cultural Plan (2013);
- **Age Friendly Community Plan (2016);**
- Municipal Energy Plan (2016); and
- **Greenhouse Gas (GHG) Reduction Plan (2019).**

It is important that the Active Transportation Master Plan's vision aligns with the City's existing policies to ensure all future decisions meet the City's overall vision and reflect the needs of the Temiskaming Shores community. **Table 1** summarizes relevant visions, objectives, and/or purposes of these policy documents and highlight common themes among the documents that were used to develop the draft vision statements for the City's Active Transportation Master Plan.

Table 1 | Relevant Policies from Local Policy Documents

*Bolded ideas identify common themes among the documents

POLICY DOCUMENT	RELEVANT VISION(S), OBJECTIVE(S), AND/OR PLAN PURPOSE(S)
OFFICIAL PLAN	***Relevant Purpose of the Plan*** "A blueprint that reaches out to incorporate the concepts of a **healthy community, the building blocks for economic development, and the optimization of its social capital."** ***Relevant Objectives of the Plan*** "To create a unifying force that creates and **fosters an identity** for the City"; "To build a City with strong, distinctive and **liveable** Settlement Areas with a range of housing choices, employment, parks, open space and which provides a **range of services and facilities that are accessible by walking, cycling** and transit"; "To build a **healthy, safe and liveable community that encourages active living, healthy lifestyles** and which integrates planning for a healthy community as a component of the City's land use planning process"; "To plan and provide infrastructure that meets current and projected growth needs"; "To protect resources of provincial interest, **public health and safety and the quality of the natural environment** through the policies of this Plan and through consultation with Provincial agencies"; and "To consider the impacts of climate change and measures to **support the reduction of greenhouse gas emissions through urban and rural design practices** and to encourage and support green infrastructure" (Temiskaming Shores Official Plan, 2015).
RECREATION MASTER PLAN	***Relevant Guiding Principles*** **"Uniquely** Temiskaming Shores; A Dynamic Framework; **Environmentally Sustainable;** **Accessible and inclusive;** **Fosters partnerships;** **Cost effective;** Municipal Budgeting; and Proactive" (Temiskaming Shores Recreation Master Plan, 2020).
AGE-FRIENDLY COMMUNITY PLAN	Relevant Purpose of the Plan "Increase the quality of life of older adults"; and "To determine the best, most fiscally responsible way to make Temiskaming Shores as age friendly as possible." Relevant Vision "To promote a diverse, inclusive, accessible, safe and respectful community, that enables independence, health and wellness and full participation at all stages of ageing while celebrating the diversity of our community" (Temiskaming Shores Age-Friendly Community Plan, 2016).
GHG REDUCTION PLAN	***Relevant Purpose of the Plan*** "Establish the City of Temiskaming Shores as a leader in reducing our impact on climate change and is designed to build on our previous steps towards **environmental sustainability" (Temiskaming Shores GHG Reduction Plan, 2019).**

1.3 VISION STATEMENT

The policy review brought forward several key themes surrounding the future of the Temiskaming Shores community and active transportation. These themes were then combined with input received through the consultation process to help guide the development of draft vision statements for the Active Transportation Plan. Based on the existing policy directions from the City and the feedback received throughout the project, the Vision for the ATP is:

Active Transportation in Temiskaming Shores will be safe and accessible and contribute to a healthy, sustainable, and supportive community where people of all ages and abilities can participate.

1.4 OBJECTIVES

To support the broad vision statement, a series of more detailed Objectives have also been created based on the City's existing policy directives and the feedback received throughout the process of developing the ATP. The Objectives for the ATP are:

- **Enhance Safety** – Ensure that all trips in Temiskaming Shores, regardless of travel choice, feel safe.
- **Improve Maintenance** – Ensure that existing infrastructure for active transportation is well maintained, providing a high level of service at all times of the year.
- **Create Connectivity** – Connect the City's major population centres and destinations and fill gaps in the City's existing networks
- **Improve Transportation Equity** - Ensure that residents of all ages, abilities and backgrounds can move safely and conveniently through the City using any transportation mode that they choose
- **Raise Awareness** - Leverage the strong sense of community in the City of Temiskaming Shores to develop a culture of care around active transportation

As the recommendations for this plan begin to take shape, the Vision and Objectives will provide an important accountability tool for the project – at each step, we will be checking our proposed next steps against these criteria to ensure that we are meeting the objectives as laid out in the Foundations of the Plan.

Chapter 2: Network Development

City of Temiskaming Shores Active Transportation Plan
December 2021

2 NETWORK DEVELOPMENT

2.1 INTRODUCTION AND DEVELOPING THE FOUNDATIONS

The City of Temiskaming Shores is a picturesque destination located in Northern Ontario. An amalgamation of the former Towns of Haileybury and New Liskeard and the Township of Dymond, the City now has a population of 9,920 and is home to many natural features and tourism opportunities (**Figure 1**).

The City is a leader and positive example of how a small, northern community can reap significant benefits related to active transportation. The City's long-standing support for active transportation is best illustrated by the STATO Trail, a unique 21 km route consisting of on-road active transportation infrastructure and off-road trails that connects all three of the City's key settlement areas. As the STATO Trail builds out new connections across the City, interest and awareness about active transportation is growing, providing the City with an opportunity to establish itself as one of the leading communities in Northern Ontario when it comes to supporting and encouraging active transportation. This Active Transportation Plan (ATP) is a long-term strategy to guide future planning and decision-making to set Temiskaming Shores on the road to becoming a place where people of all ages and abilities can move safely through the community, and where walking, cycling and wheeling are accessible activities for all.

This network paper is the first step towards building the ATP. The proposed network was developed through a well-defined process informed by technical analysis, community and stakeholder feedback and best practices in design guidance. This will guide the City in achieving its future aspirations for active transportation by developing the tools, strategies and framework for how to implement recommended changes.

Figure 1 | Existing conditions in Temiskaming Shores. Clockwise from top left: STATO Trail in New Liskeard, Waterfront in Haileybury, Downtown Haileybury and STATO Trail on Lakeshore Road.

2.2 DEVELOPING AN ACTIVE TRANSPORTATION NETWORK

The process to develop the City's active transportation network is based on a combination of technical assessments and consultation with key stakeholders, City Staff and members of the public. An overview of the network development process including the steps and the outcomes of each step to date is presented in **Table 2** and is consistent with the new Ontario Traffic Manual Book 18 (2021).

This discussion paper will cover steps 1 to 7 of the network development process, producing a network map that will show the desired active transportation network once the ATP has been fully implemented. The next discussion paper will explore the proposed phasing for the projects, helping to deliver projects in a manner that aligns with capital construction schedules and meets the needs of the residents of Temiskaming Shores.

Table 2 | Cycling Strategy Network Development Process

NETWORK DEVELOPMENT PROCESS

Step		Outcome
1	Identify existing conditions and routes that have been proposed in past planning documents.	Map 1 – Existing Active Transportation Conditions
2	Identify priority gaps and missing links through community engagement	SWOT Analysis and feedback for Candidate Route Selection
3	Identify a set of criteria to help select, assess and refine routes to form part of the preferred active transportation network.	Route Selection Criteria
4	Identify potential candidate routes to be investigated that could form part of the City's active transportation network.	Map 2 – Candidate Routes and Proposed Improvements
5	Undertake field work to investigate existing routes and locations for potential new routes.	Field work documentation
6	Verify candidate routes with City Staff and key Stakeholders to validate feasibility	Additional input into preferred network and proposed facility types
7	Confirm the City's preferred network including the proposed facility types.	Map 3 – Proposed Facility Types and Improvements
8	Identify a proposed phasing plan for the City's preferred active transportation network.	To be completed
9	Verify proposed phasing with Stakeholders, City Staff and members of the public to produce a final network development plan for the ATP	Short, Medium and Long-term plans for the City's active transportation facilities

2.2.1 STEP 1: EXISTING CONDITIONS

Information was gathered from the City of Temiskaming Shores to develop a geographic information systems (GIS) database of spatial information. The database included information regarding existing conditions and routes that were previously identified in approved planning documents including the City's Official Plan (2015) and the Recreation Master Plan (2020). The GIS database was updated on an on-going basis to reflect the iterative approach of the network development process.

It is important to note that not all previously proposed routes form part of the City's AT network. These routes were used as a starting point of the network development process and further investigated during each step of the process.

In total, the existing active transportation network for Temiskaming Shores is approximately 80 kilometres, including 44 kilometres of routes that accommodate cycling and 36 kilometres of sidewalks. A summary of the existing active transportation network is provided below within **Table 3**.

Table 3 | Summary of the Existing Active Transportation Network

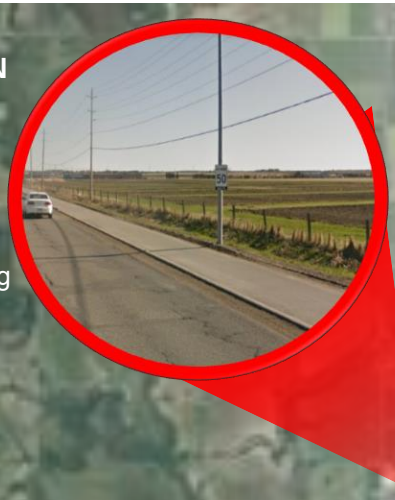
Off-Road Multi-Use Trails	Sharrows Markings / Signed Routes	Sidewalks
		
Locations: *STATO Trail System (Lakeshore Rd S, Waterfront Boardwalk Trail, Armstrong St N)*	*Locations:* *Wabi River Bridge Crossing*	*Locations:* *New Liskeard, Haileybury, Cobalt*
Total km: *43.5*	*Total km:* *0.1*	*Total km:* *36.5*
Total		***80.1***

STATO Trail

Serving as the backbone of Temiskaming Shores' existing active transportation network is the South Temiskaming Active Transportation Organization (STATO) trail system. Comprised of both on-road and off-road facilities, the corridor was first formally identified back in 2004 by a group of community members interested in promoting active transportation within the area. Since then, the STATO trail system has been continually developed, with the addition of new facilities, enhancements to existing routes and the adoption of a seasonal maintenance program (excludes winter maintenance). Today, the corridor stretches 21.4km long, connecting key settlement areas and destinations across the City and offering scenic views of Lake Timiskaming, the Wabi River and surrounding natural areas. All segments of the network are also designed to be wheelchair accessible, with rest areas, lighting and other basic amenities provided at key junctures.

The significance of the STATO trail is not only measured in its cultural value to the local community but how it connects the communities that make up the City of Temiskaming Shores. The corridor serves as a vital active transportation connection between New Liskeard, Haileybury and Dymond. Building upon this existing trail, through expansions, upgrading existing segments, or connecting new destinations to the trail through the construction of high-quality active transportation infrastructure is a cost-effective way to expand the city's active transportation network. As new investments in the trail and the routes that connect to it are made, preference should be given to alignments that further enhance connectivity and access to the City's natural settings as well as its commercial destinations. All new investments should also be designed with all user abilities in mind, to uphold the trail system's existing reputation as a fully accessible facility.

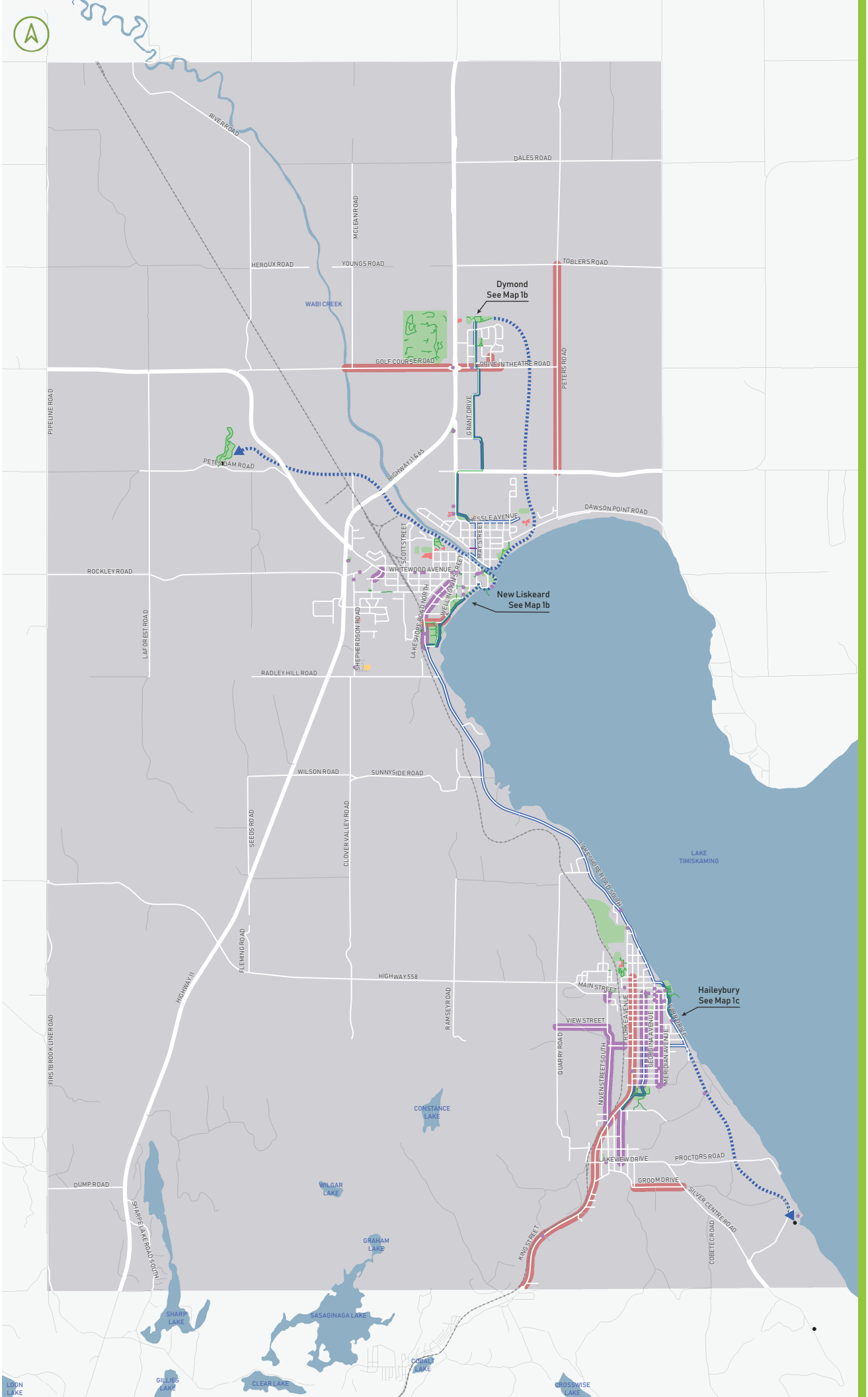
Armstrong St N (Cycle Path)



New Liskeard Waterfront Boardwalk Trail (Multi-Use Path)

Lakeshore Rd S (bidirectional cycle path)

Haileybury Beach (cycle path)



Map 1a.

Existing Active Transportation Conditions

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

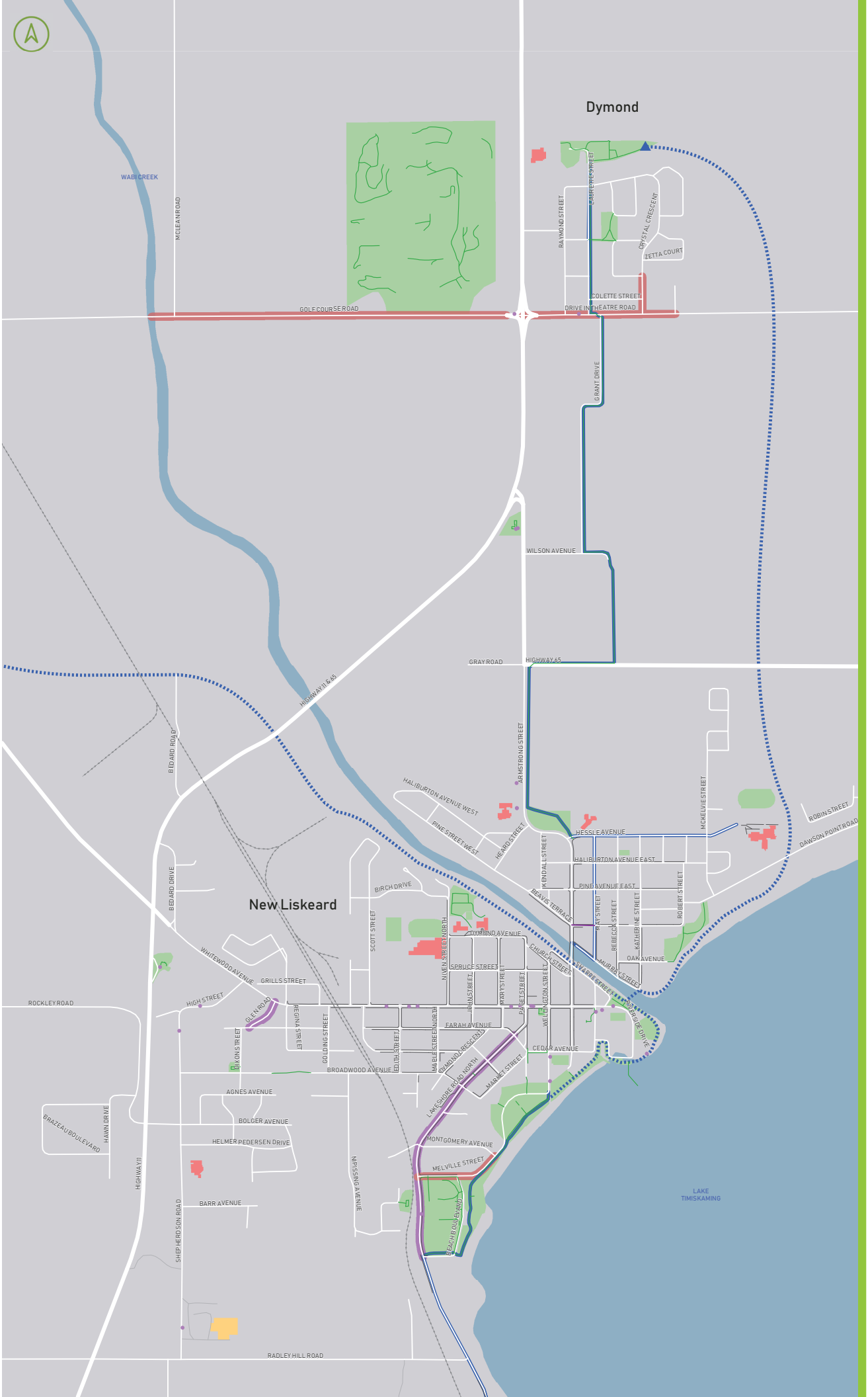
Legend

- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- Existing sharrow
- STATO Trail (existing)
- STATO Trail (proposed extension)
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

0 0.475 0.95 1.9 KM



Map 1b.

Existing Active Transportation Conditions

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

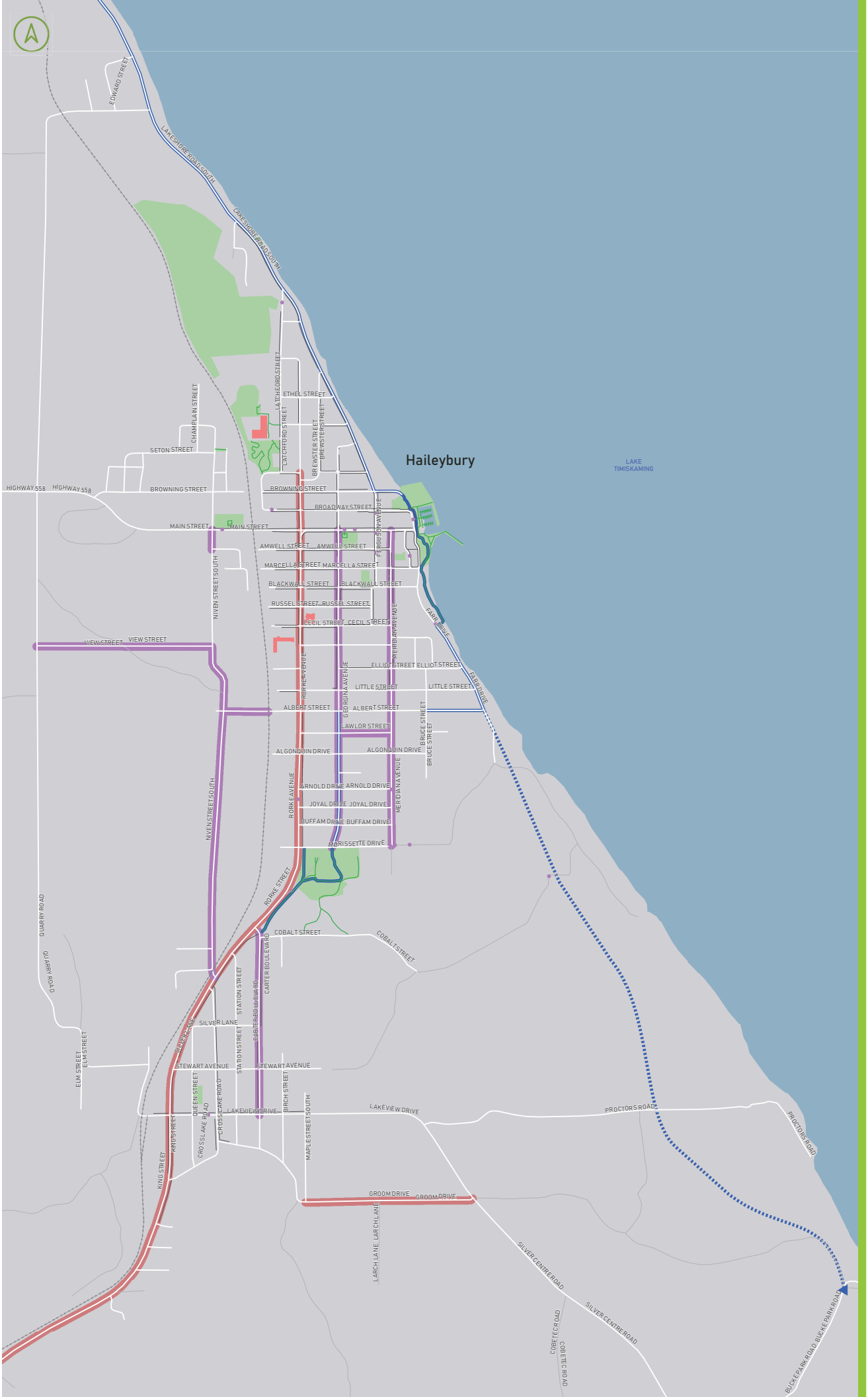
- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- Existing sharrow
- STATO Trail (existing)
- STATO Trail (proposed extension)
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

 Date Published: December 2021

0 0.125 0.25 0.5 KM



Map 1c.

Existing Active Transportation Conditions

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- Existing sharrow
- STATO Trail (existing)
- STATO Trail (proposed extension)
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

 Date Published: December 2021

0 0.125 0.25 0.5 KM

2.2.2 POLICY FRAMEWORK

In addition to the physical assets that were reviewed as part of the existing conditions review, the City's existing policy conditions were also assessed to identify areas where support for active transportation already exists and where it could be strengthened. In Temiskaming Shores, policies at the federal, provincial and municipal levels will all have an impact on how the ATP looks, feels and is implemented. These prior planning documents provide guidance on the planning, design, implementation and operations of active transportation facilities. They also offer a sense of the city's overall goals and culture, which are important elements for the active transportation plan to consider as it moves forward.

A policy review highlights where there are existing supports for active transportation within the community and helps to identify policy gaps that could be filled by this plan. A more detailed summary of the relevant policies relating to the ATP can be found in Discussion Paper #1 – Policy Review and Vision, but what follows here is a summary of the key existing policies at the local level which relate to active transportation within Temiskaming Shores.

Temiskaming Shores Official Plan (2015):

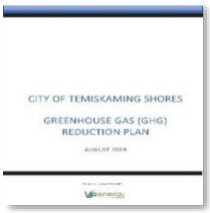
The Temiskaming Shores Official Plans is a core functional document which articulates how the city is to grow and develop for years to come. The plan recognizes the importance of designing facilities that accommodate walking and cycling to both support healthier lifestyles and reduce greenhouse gas emissions as the City grows.

Recreation Master Plan (2020):

The Recreation Master Plan is a recently adopted document which both identifies the city's unique recreational needs and outlines a 10-year plan to address those needs. This plan includes investments into new active transportation facilities, including new on-road linkages and expansions of the existing STATO trail system.

Age Friendly Community Plan (2016):

The Age Friendly Community Plan strives to better accommodate and support people as they age through a series of equity seeking initiatives. While not specific to active transportation, the plan emphasizes the importance of an all ages approach to designing new infrastructure.



Greenhouse Gas (GHG) Reduction Plan (2019).

The Greenhouse Gas Reduction Plan actualizes the city's commitment to combatting climate change through a series of strategic measures to reduce local emissions. Among those listed include through the promotion of active transportation to decarbonize the City's transportation sector.

The Policy review offered important context and direction for the development of the ATP, shaping the document's overall goals and objectives (see Chapter 1 – Policy Review, Vision and Objectives). The remainder of the network development process was informed by technical evaluations, public consultation and in-depth conversations with City Staff. The Policy review helped to inform the route selection criteria and provided the rationale for the Vision and Objectives for the ATP, ensuring that this plan aligns with the City of Temiskaming Shores' broader policy goals.

2.2.3 NETWORK ENGAGEMENT

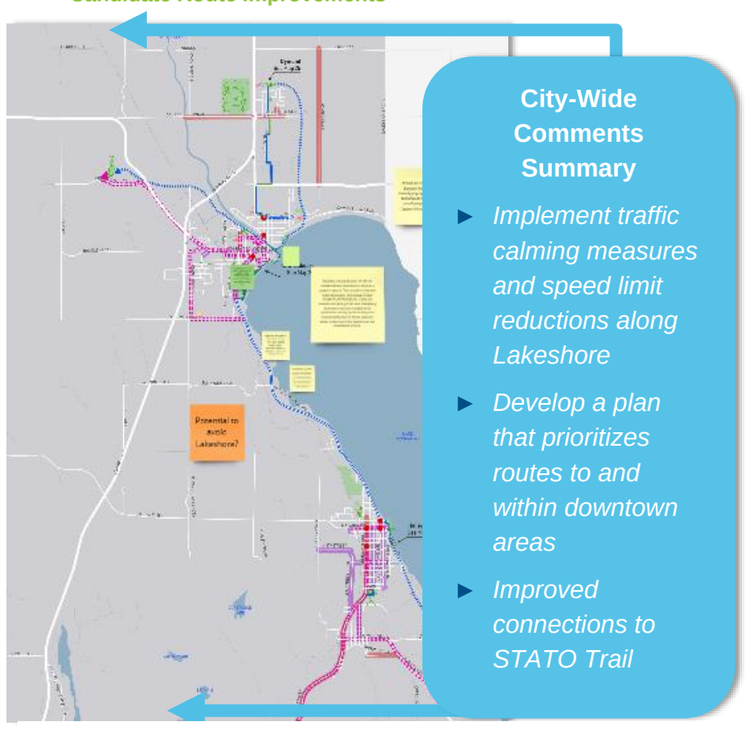
To gain a stronger understanding of the existing conditions and gaps within Temiskaming Shores' active transportation network, a robust community engagement plan was implemented to gather public input across all stages of the development of the plan. This included a range of opportunities for local stakeholders to inform the development of a proposed active transportation network. Public input was important to identify existing travel patterns and facilities that define active transportation use today while also identifying barriers and the potential for new routes that can be developed in the future.

Community engagement focused on both the **physical** infrastructure and the **social** infrastructure necessary to support active transportation in Temiskaming Shores. While a more comprehensive discussion of engagement activities will be found in the Community Engagement Discussion Paper, this section will focus exclusively on some of the high-level feedback relating to the development of the active transportation network that was received during community engagement.

Stakeholder Group Workshop #1

The first stakeholder group workshop brought together a wide range of local decision makers to outline priorities and directives related to the future of active transportation within Temiskaming Shores. Key members present include City staff, City Councillors, local committee members and Health Unit staff. Using Miro, an interactive online whiteboard tool, attendees were invited to identify candidate routes for active transportation facilities and improvements and potential quick win projects. Listed below within **Figure 2** are key outcomes of these two exercises:

Candidate Route Improvements



City-Wide Comments Summary

- *Implement traffic calming measures and speed limit reductions along Lakeshore*
- *Develop a plan that prioritizes routes to and within downtown areas*
- *Improved connections to STATO Trail*

New Liskeard Comments Summary

- *Design active transportation network to better service local schools*
- *Improve crossing over Wabi River*
- *Design an active transportation network that services local services and institutions*
- *Consider new active transportation facilities through road diets*
- *Apply a safe design that is inclusive for all ages*
- *Steep terrain and private property are issues for proposed Wabi River trail system*

Haileybury Comments Summary

- *Provide connection to Northern College Campus*
- *Upgrade three-way stops within settlement area to all-way stop control*
- *Prioritize facilities and connections that benefit youth*
- *Preference towards off-road trails over on-road facilities*

Figure 2 | Snapshots taken of the Miro boards used to record feedback on the City's draft proposed active transportation network, with key themes highlighted

Quick Win Projects

In addition to a series of candidate active transportation routes, the working group session also identified a list of quick-win initiatives that would yield a considerable benefit to active transportation users immediately. Among the examples listed include those which directly contribute to the proposed active transportation network.

Increasing connections to schools and other public facilities

Adding traffic calming tools in designated residential and downtown areas to improve safety for people crossing the road

Improving cycling and pedestrian facilities along the Wabi Bridge

Stakeholder Outreach

In addition to the Stakeholder Workshop, 1-on-1 interviews were held with representatives from key stakeholder groups to gain a deeper understanding of the concerns, considerations and priorities that should guide the direction of this Plan. Interviewees were asked a series of 10 questions, which provided an opportunity to explore the history of active transportation in Temiskaming Shores, the priority areas where work still needs to happen and the potential for improvements and partnerships in the City.

"The [STATO] Trail is well designed and well used. Seniors, kids, parents' families, racers, - they're all on the STATO Trail";

"I'd like to see us expand upon what we've done already – we already have this great linear route in the STATO Trail, so we should complete those missing links and then lay out a plan to connect the trail to other areas.

1. What is your vision for active transportation in the City?
2. What are the top 3 network priorities for an active transportation network?
3. Who is the network serving and who is it not?
4. What are some successes in the City?
5. What are some of the challenges?
6. Is there anything else you would like to add?

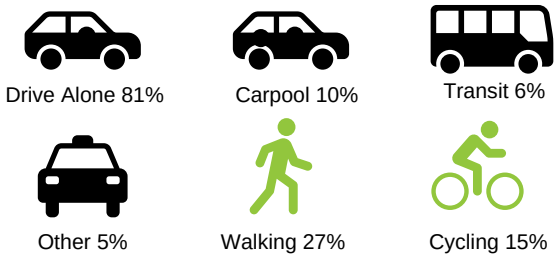
"I think adults more than kids are being served well in terms of comfort, especially downtown. Commuters are well served generally. Leisure riders who aren't afraid of riding outside of the trail – experienced riders are well served. I've heard from other people who would ride more, but they don't feel comfortable riding in traffic, so they are being left behind. Students are really being left behind too because we only have one school that we can get to from the trail. Most of our schools have nothing to connect them, so students are on their own";

"More green paint on the roads to help delineate the cycling facilities";

Public Survey

To support the stakeholder outreach, a public survey was also launched to capture how the public relates to active transportation. With a total of 283 responses, the survey's results provided information useful to developing both a plan for physical infrastructure to support active transportation as well as ideas for new programs and policies to help to develop improved social infrastructure to make active transportation more common and acceptable in the City.

Mode Share



Main Active Transportation Recommendations

1. Build more paved trails or multi-use paths
2. Build more on-street cycling facilities
3. Improve maintenance on existing sidewalks, multi-use paths, cycling facilities etc.

Main Active Transportation Barriers

Lack of sidewalks or trails

Condition of sidewalks or trails

Speed and noise of motor traffic

Lack of dedicated on-street cycling facilities

Intersection Safe

Speed and noise of motor traffic

2.2.4 STEP 2: ROUTE SELECTION CRITERIA

A comfortable, connected system of active transportation infrastructure is the most important determinant when it comes to shifting transportation behaviour. For a community to unlock the potential demand for walking and cycling, each trip made on foot, by bike or using a mobility device should be direct, seamless and comfortable. Achieving a network that meets these criteria begins with a careful review of all candidate routes to decide which are best suited to form an active transportation network. Based on the Vision and Objectives of the ATP and informed by community engagement, a series of Route Selection Criteria were developed to evaluate candidates routes based off a consistent set of metrics, helping to prioritize future investments into active transportation projects that will make the biggest impact within the community. Based off established best practices, criteria were refined through the lens of the unique context of Temiskaming Shores, ensuring that criteria meet the needs of the City. While these criteria form the foundation of the candidate route evaluation, they do not preclude projects that have a high level of public demand, nor those that have been identified in previous planning processes, from moving forward.

The route selection criteria identified in **Table 4** are meant to serve as a tool to evaluate projects as the ATP moves forward into the implementation phase – they can provide guidance when new projects are proposed, or when conditions within the City change.

Table 4 | List of route selection criteria applied to identify candidate active transportation routes

Safety	Active transportation networks must enhance the safety, both real and perceived, for people walking and cycling. Active transportation routes were prioritized based on their degree of safety improvement compared with current conditions.
Community Connections	Temiskaming Shores is a community of communities, so the proposed active transportation network should serve to connect the communities of Dymond, New Liskeard and Haileybury to enhance community cohesion.
Feasibility	Given the constraint of a limited financial budget, projects were prioritized by their cost effectiveness. This included those which either align themselves with existing capital works or can be implemented more quickly or inexpensively.
Services Demand	To enhance use, active transportation facilities should be prioritized in areas with greater populations or greater trip making potential.
Connections to STATO Trail	As the cornerstone of the City's existing active transportation network, it is vital that recommended expansions strive to either connect to or extend the existing STATO trail system.
Scenic Routes	Active transportation facilities should offer new ways to both reach and travel through scenic natural areas. Key examples include the Lake Timiskaming Shoreline, Devil's Rock and other surrounding natural areas.

2.2.5 STEP 3: CANDIDATE ROUTES

With the goals and objectives of the City's active transportation network now outlined in the route selection criteria, the next step is to apply those criteria to a list of candidate routes for improvement. By applying the criteria to the various roads and trails connections within the City, it becomes clear which routes should be prioritized for implementation to develop a connected network of active transportation infrastructure around the City. Candidate routes serve as a "first draft" of a network – a series of potential routes that need to be refined and confirmed through technical assessments, conversations with City Staff and consultation with the community. Within Temiskaming Shores, candidate routes were distinguished within three categories: **Potential STATO Trail extensions, Potential Candidate On-road Routes and Proposed Sidewalk Expansion.**

Potential STATO Trail Extensions

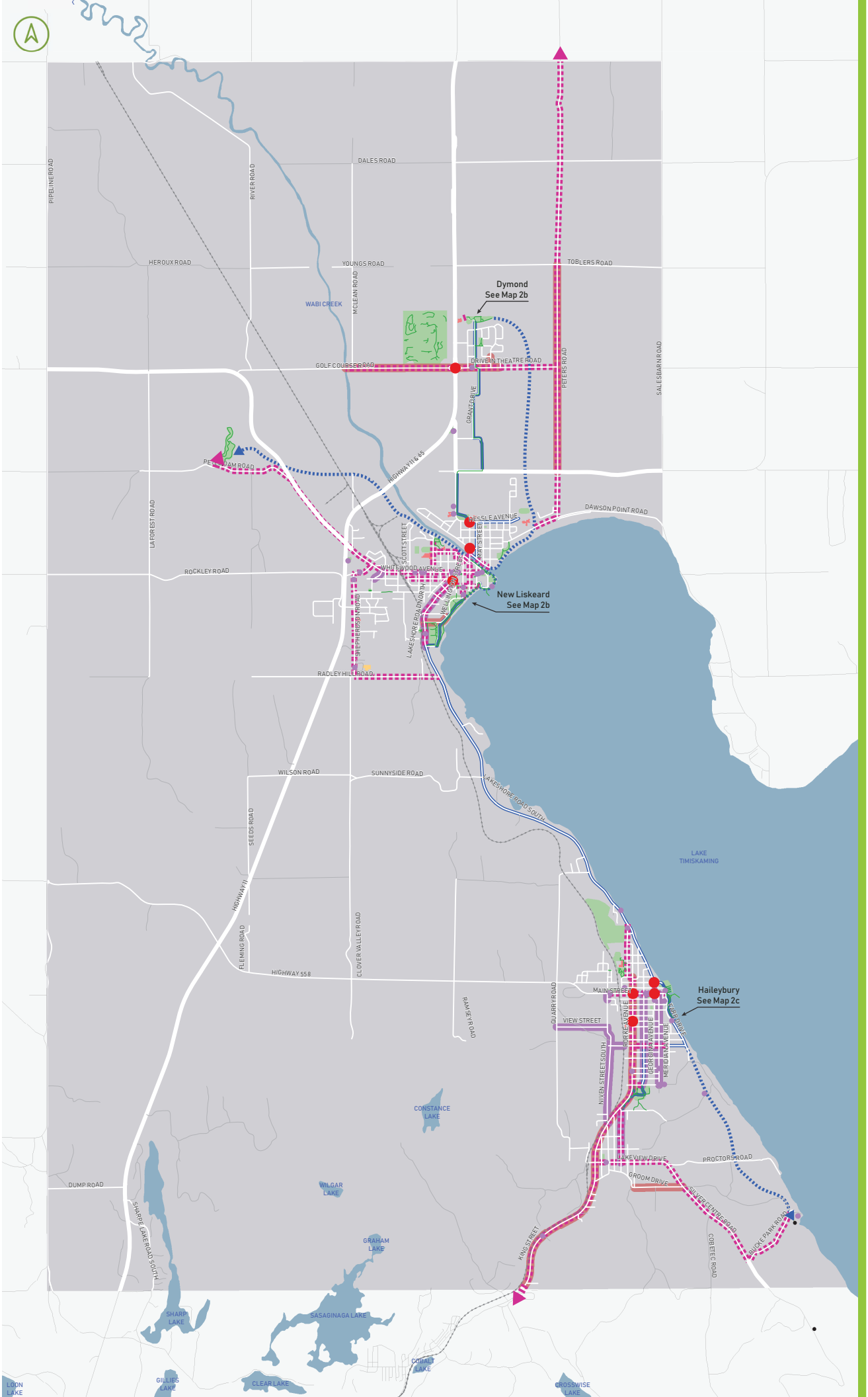
As the existing backbone of the City's active transportation network, the STATO trail remains a logical starting point for further network expansions. These candidate routes were identified directly from the City's Recreation Master Plan (2020) which proposed routes to connect the City's settlement areas and its key parks spaces, particularly Pete's Dam and Devil's Rock.

Potential Candidate On-Road Routes

On-Road Cycling Routes are vital to provide connectivity between the City's existing off-road trails network and the key destinations within the City. On-road routes provide connectivity to schools, commercial areas, employment areas and more, helping to enhance access and safety for all road users.

Proposed Sidewalk Expansions

With almost all trips involving some portion made as a pedestrian, it is vital that improvements to the existing sidewalk network be included as a key recommendation. Like the Candidate On-Road routes, most sidewalk expansions are recommended within settlement areas, where there is a higher anticipated demand. Preference was also given to facilities that improve access to sites and areas with higher amounts of vulnerable users, such as older adults and youth.



Map 2a.

Candidate Routes and Proposed Improvements

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

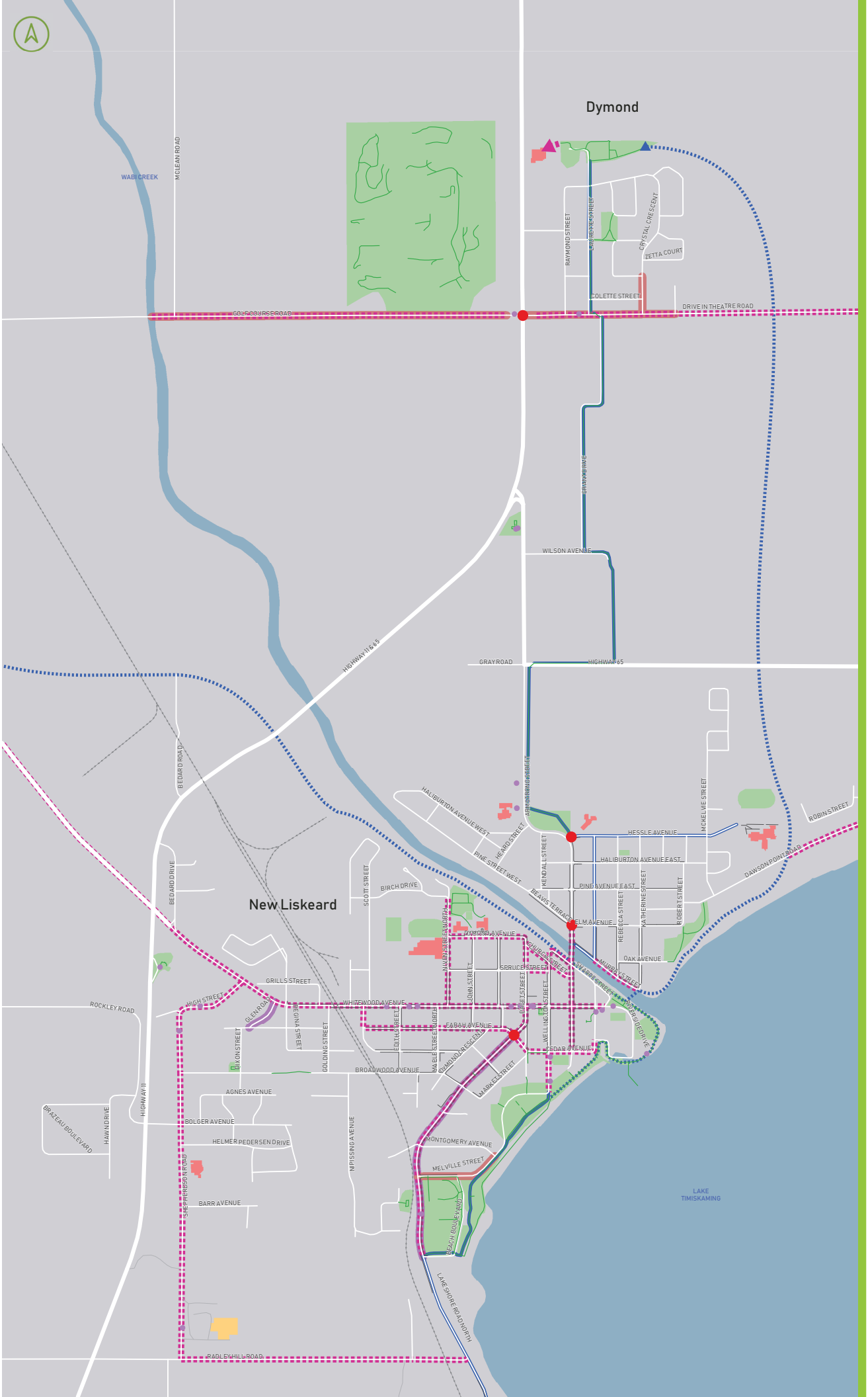
- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- STATO Trail (existing)
- STATO Trail (proposed extension)
- Potential candidate route
- Proposed crossing enhancement
- MTO Highway
- Local Road
- MNRF Road
- 2021 Scheduled Road Project
- 2022 Scheduled Road Project
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

0 0.475 0.95 1.9 KM



Map 2b.

Candidate Routes and Proposed Improvements

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

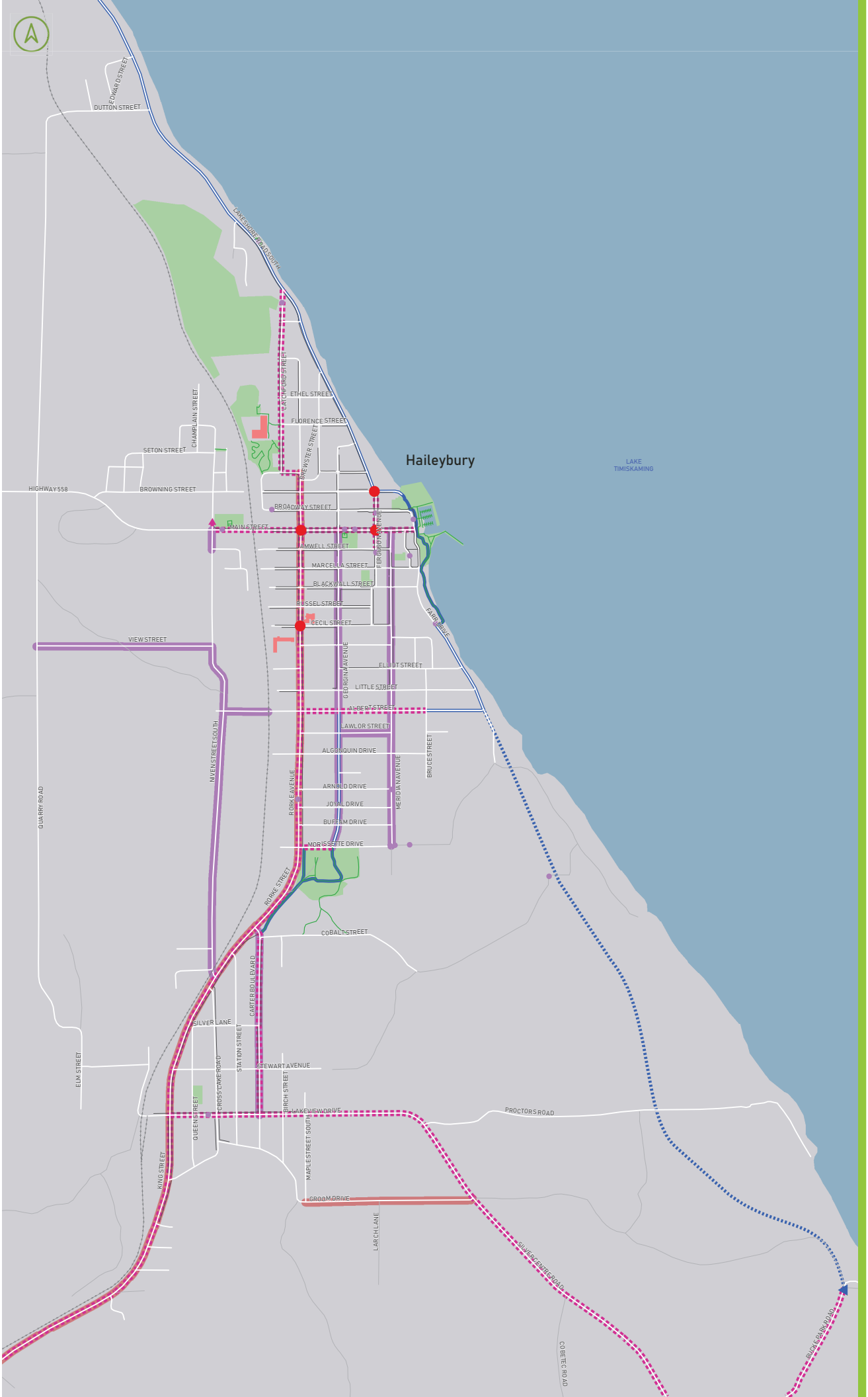
- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- STATO Trail (existing)
- STATO Trail (proposed extension)
- Potential candidate route
- Proposed crossing enhancement
- MTO Highway
- Local Road
- MNRF Road
- 2021 Scheduled Road Project
- 2022 Scheduled Road Project
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

0 0.125 0.25 0.5 KM



Map 2c.

Candidate Routes and Proposed Improvements

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- STATO Trail (existing)
- STATO Trail (proposed extension)
- Potential candidate route
- Proposed crossing enhancement
- MTO Highway
- Local Road
- MNRF Road
- 2021 Scheduled Road Project
- 2022 Scheduled Road Project
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

 Date Published: December 2021

0 0.125 0.25 0.5 KM

2.2.6 STEP 4: DESKTOP AND FIELD INVESTIGATIONS

To confirm the preliminary recommendations of steps 1-3 of the network development process, an extensive desktop analysis of the selected candidate network was performed. This work built upon the findings of our initial existing conditions review, seeking to both clarify and expand understandings of the candidate network's immediate and surrounding contexts. Using maps and satellite imagery provided from the City and Google Maps, the following details were identified for each candidate route:

- Available road width (based of visual observations and use of the measurement tool)
- Street function and design (i.e. lane widths, presence of on-street parking)
- Utility constraints (i.e. existing hydro poles, light poles, signage)
- Surrounding land uses (i.e. proximity of major trip generators, including businesses, schools, community centers, parks etc.)
- Scenic value (presence of scenic views, proximity to key natural amenities such as water bodies, forests or elevation changes)
- Presence of informal active transportation facilities (i.e. desire lines, vegetation clearing)
- Safety concerns (i.e. observations of heavy trucking, poor site lines etc.).

Depicted within the two images below are the outcomes of a desktop analysis performed along two travel corridors within Temiskaming Shores, Whitewood Avenue in New Liskeard (**Figure 3**) and Rorke Avenue in Haileybury (**Figure 4**)which are listed within the City's proposed active transportation network:

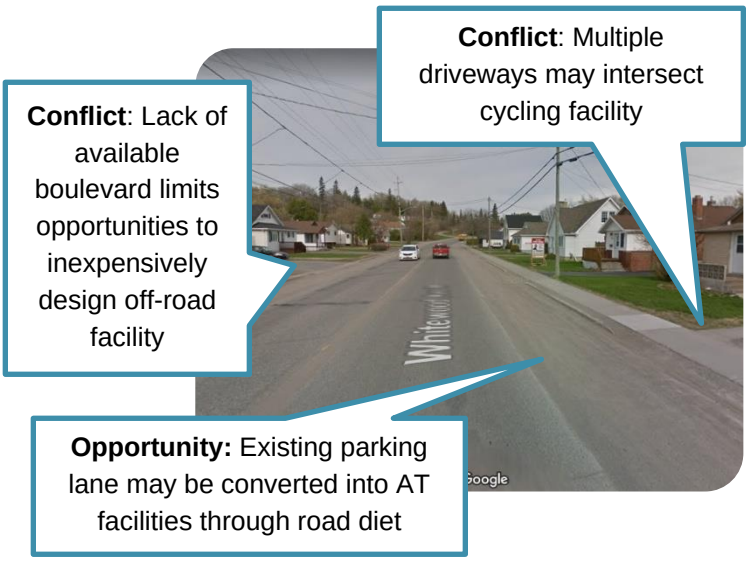


Figure 3 | Marked up photo image of Whitewood Avenue in New Liskeard, which was carefully reviewed for opportunities to implement enhanced active transportation facilities [Source: Google Streetview, 2021]

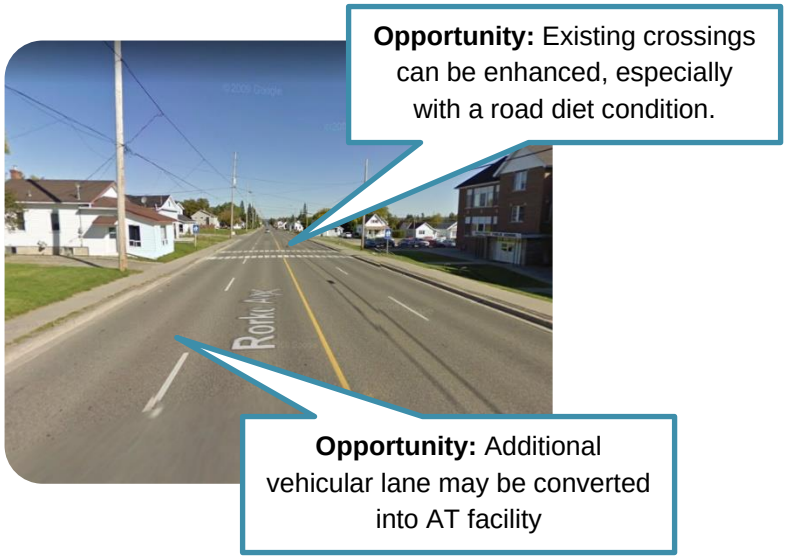


Figure 4 | Marked up photo image of Rorke Avenue in Haileybury, which was carefully reviewed for opportunities to implement enhanced active transportation facilities [Source: Google Streetview, 2021]

Complimentary to our desktop analysis, a series of field investigations were completed at key locations across the City. These sites represented either exisitng facilities where conditions needed to be updated or candidate routes, whose surrounding context needed to be verified. Key aspects documented within each visit included: slope gradings, surrounding lane uses, road and or trail surfacing, provision of supporting amenities (i.e. directional signage, trailheads, lighting) and facility widths. Overall a total of 184 strategic locations were visited, within the areas of Dymond, North Cobalt, Haileybury, New Liskeard, Pete's Dam and Devil's Rock. For each site visit, an accompanying photo was taken to properly capture all observations and to provide an accurate record for later review. A preliminary map of the site visit locations can be found within **Figure** 5 below:

Field Visits (Photos)

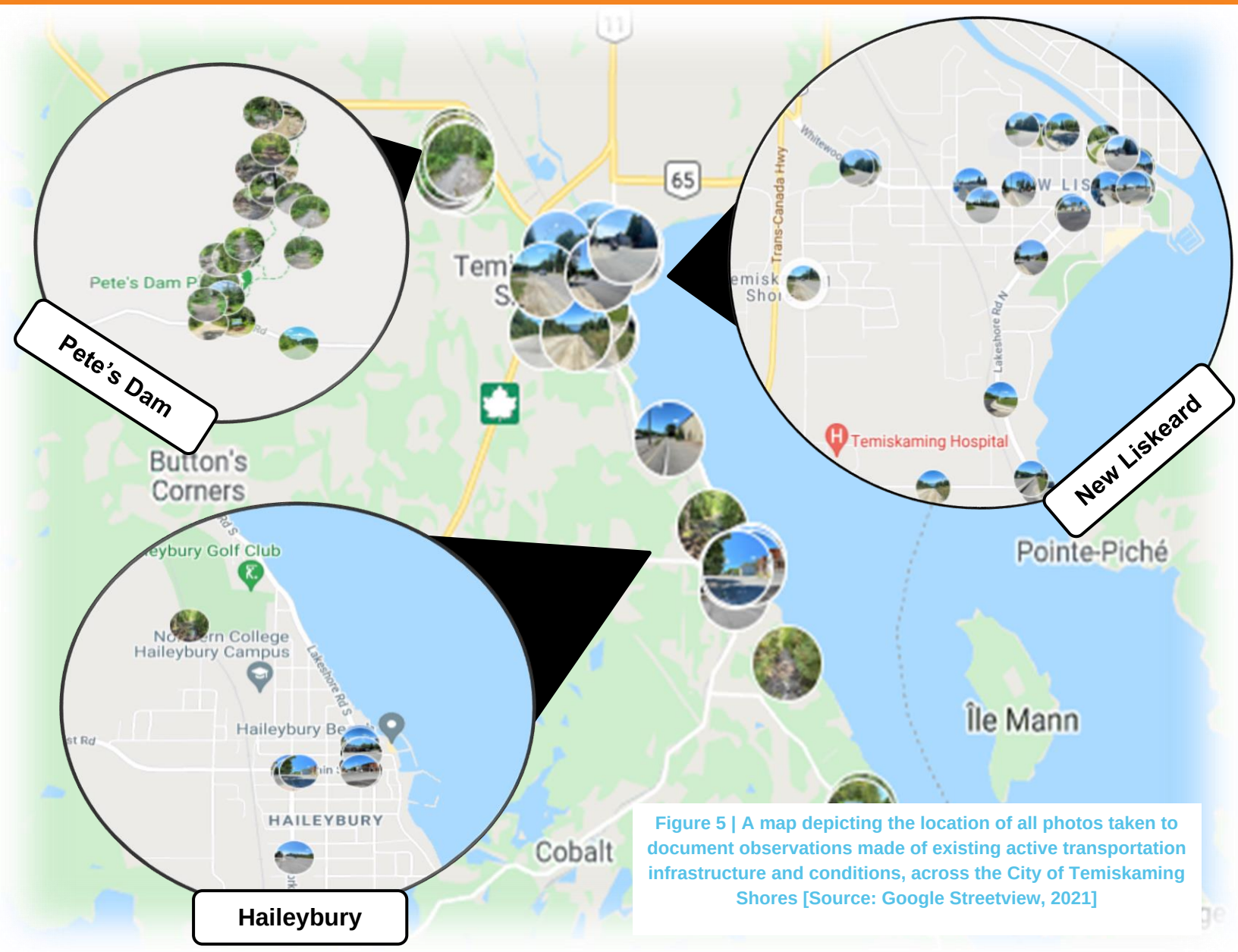


Figure 5 | A map depicting the location of all photos taken to document observations made of existing active transportation infrastructure and conditions, across the City of Temiskaming Shores [Source: Google Streetview, 2021]

2.2.7 STEP 5: CONFIRM THE ACTIVE TRANSPORTATION NETWORK

Using findings generated from steps 1 through 4 of the network development process and feedback collected from key project stakeholders, the cycling network and preferred routes were then confirmed. Once confirmed, the roadway conditions for each candidate route were assessed to determine the most appropriate facility type based on current best practices and design standards. All facility type recommendations rely on guidance from the newly updated OTM Book 18 (2021), with consideration given to the local context in Temiskaming Shores. Facility recommendations are based on OTM Book 18's 3-step facility selection tool, which is outlined below.

Step 1 of OTM Book 18's 3-step facility selection process involves an assessment of all candidate routes based on the road's posted speed limit (how fast motor vehicles are travelling on the road) and recorded traffic volumes (how many cars are on the road) to determine an appropriate level of separation for an on-road facility. To better account for relevant aspects of the roadway's surrounding context, separate assessment tools are provided depending on whether the facility is located along a rural or urban/suburban roadway. The graphics shown in **Figure 6** illustrate the nomographs applied in step 1 of the facility selection process.

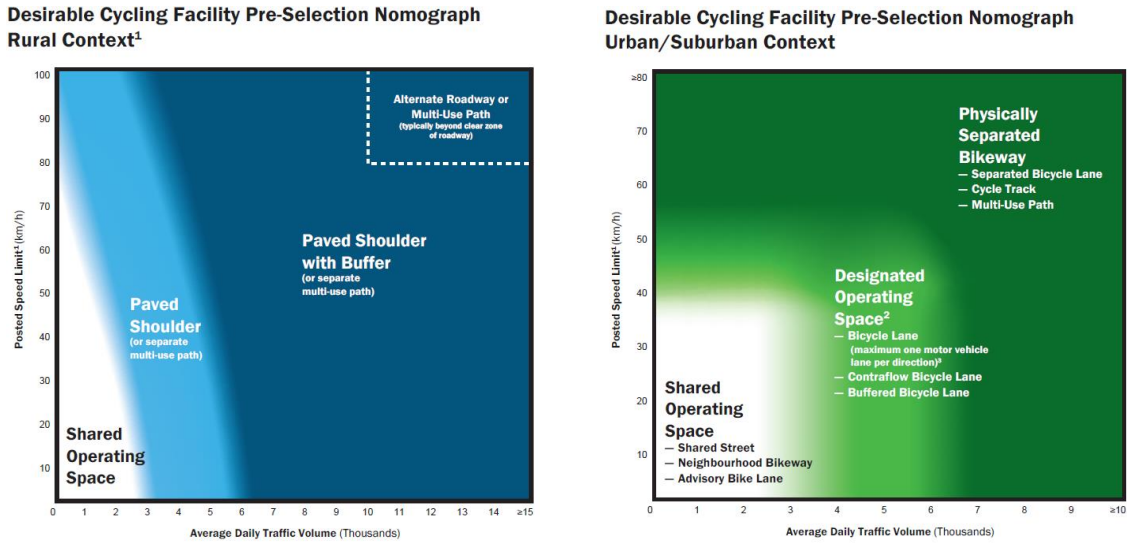


Figure 6 | OTM Book 18 Facility Selection Nomographs (2021)

Once preliminary facility assignments have been made based off the nomographs, ***Step 2*** of the OTM Book 18 facility selection process then involves revisiting the findings of previously conducted desktop reviews and field investigations to better understand the context of the corridor. This step is meant to provide additional context to the recommendations made in step 1 to confirm the desired level of separation – for example, if a roadway provides an important connection to a school or popular community destination, it may be desirable to design the active transportation facility to provide a higher level of comfort to those more hesitant users. The list of characteristics below, while not exhaustive, provides an example of the types of conditions a practitioner may wish to assess as part of their Step 2 Assessment:

Roadway Characteristics

- Speed
- Volumes
- Function
- Vehicle mix
- On-street parking
- Pedestrian activity
- Intersection frequency
- Operations

Availability

- Available space
- Project type

Attractiveness

- User skill level and stress tolerance
- Level of bicycle use
- Cycling route function

Finally, in ***Step 3*** practitioners should detail and justify facility decisions by following these steps.

a. If the result of Step 2 differs from the level of separation and facility type options in Step 1, prepare a rationale for selecting a different facility type or separation option.

b. Identify the specific elements of the roadway that were reviewed, the desired outcome of the facility type and the constraints that were considered when deciding facility types. Identify similar locations or other examples where the proposed facility type has been implemented, either within or outside of the project's jurisdiction.

c. Identify potential design treatments and enhancements that may mitigate potential issues identified through the review of the local context and the implementation of similar facility types.

The results of Steps 1-3 in Temiskaming Shores resulted in the creation of a proposed facility type map, which is summarized in Map 3. This draft network has been reviewed and confirmed through public and stakeholder consultation, as well as through conversations with City Staff.

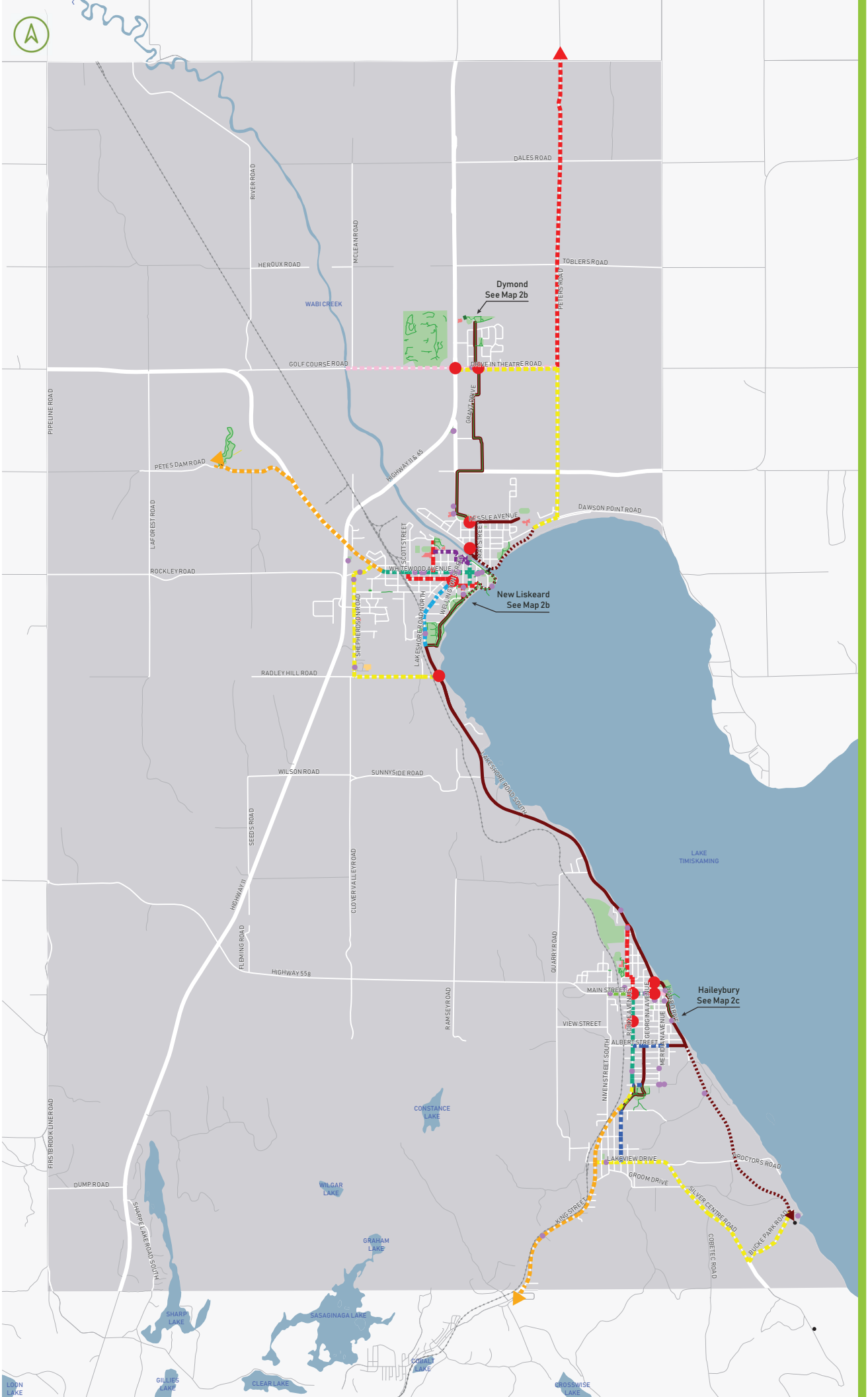
Currently, the City's active transportation network stretches approximately 80km, which includes off-road multi-use trails and sidewalks. For the purpose of this analysis, we are including all segments of the STATO Trail (including those that are on-road) in the Multi-Use Trails category.

The ultimate active transportation network as envisioned by this Plan would see Temiskaming Shores add an additional **57km** of active transportation facilities. The new facilities consist of approximately **13km of new sidewalks**, **7 km of new multi-use trail or in boulevard multi-use paths**, **5.5 km of new Bike Lanes** in urban areas, **19km of new Paved Shoulders** or buffered paved shoulders and **13km of new shared facilities**, including signed routes, traffic calmed corridors and sharrows.

Once completed, the active transportation network would stretch 137km, and would provide safer walking and cycling connections to nearly every area of Temiskaming Shores. A summary of the active transportation network is summarized in **Table 5** and shown in **Map 3 (A, B & C)**. The proposed and existing sidewalk networks for New Liskeard, Dymond and Haileybury are shown **Map 4 (A & B)**.

Table 5 | Summary of the Existing Active Transportation Network

Facility	Existing KM	Proposed KM	Total KM
Off-Road Multi-Use Trails	43.5	5.5	**49.0**
In-Boulevard Multi-Use Path		1.6	**1.6**
Buffered Bike Lane		3.7	**3.7**
Buffered Bike Lane or Two-Way On-Road Facility		1.4	**1.4**
Bike Lane		0.4	**0.4**
Buffered Paved Shoulder		6.6	**6.6**
Paved Shoulder		12.3	**12.3**
Sharrows Markings	0.1	1.1	**1.2**
Signed Route		8.0	**8.0**
Candidate Locations for Pilot Projects		0.2	**0.2**
Candidate Locations for Traffic Calming Measures		3.6	**3.6**
Pedestrian Bridge		0.1	**0.1**
Sidewalks	36.5	12.7	**49.2**
Total	**80.1**	**57.2**	**137.3**



Map 3a.

Proposed Facility Types and Improvements

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- STATO Trail (existing)
- Existing sharrow
- Proposed bike lane
- Proposed buffered bike lane
- Proposed buffered bike lane or two-way on-road AT facility
- Proposed buffered paved shoulder
- Proposed in-boulevard multi-use path
- Proposed off-road multi-use trail
- Proposed pilot project
- Proposed paved shoulder
- Proposed sharrow
- Proposed signed route
- Proposed traffic calming measures
- Proposed pedestrian bridge
- STATO Trail (proposed extension)
- Proposed crossing enhancement
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

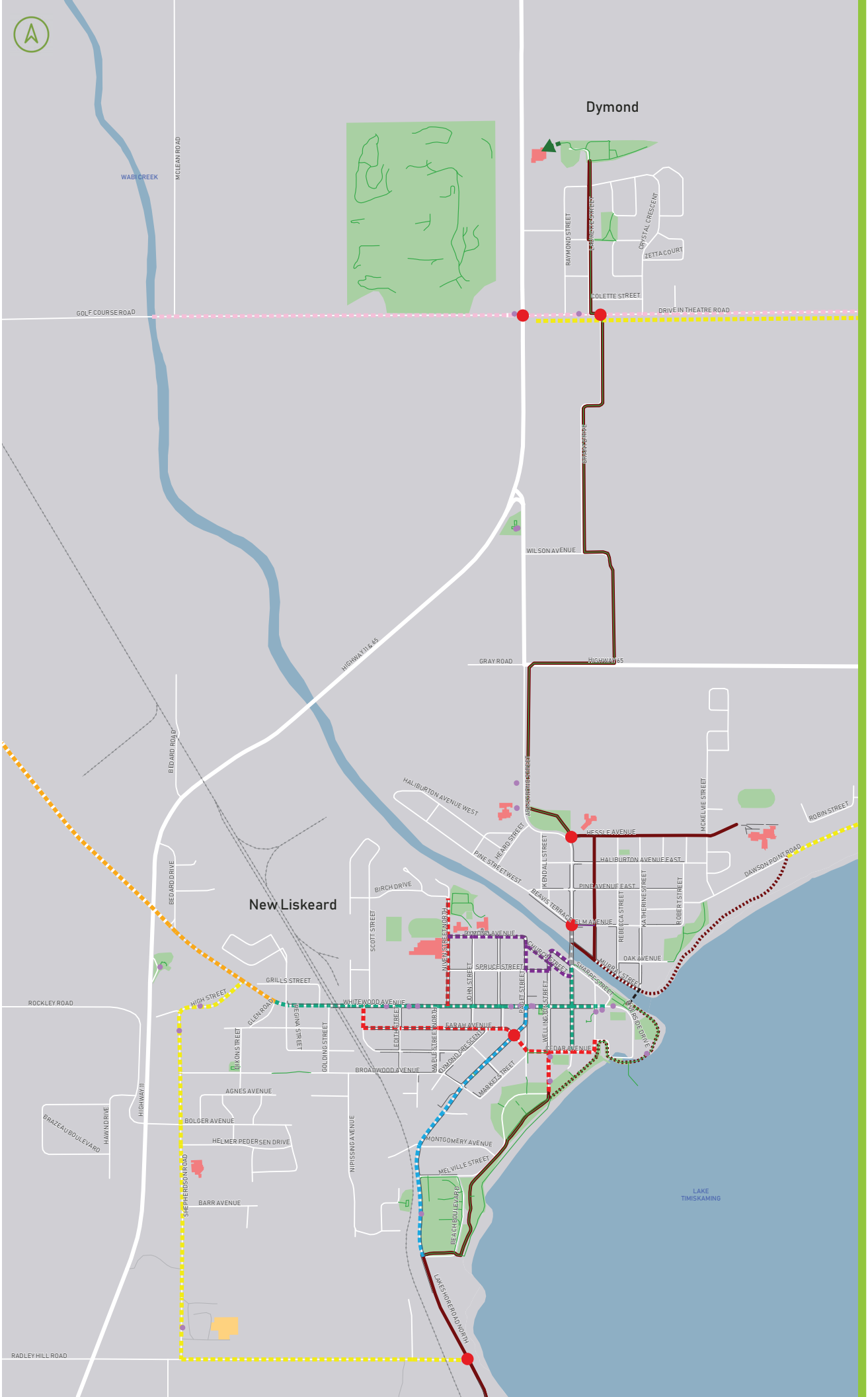
Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

 Date Published: December 2021

0 0.475 0.95 1.9 KM



Map 3b.

Proposed Facility Types and Improvements

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

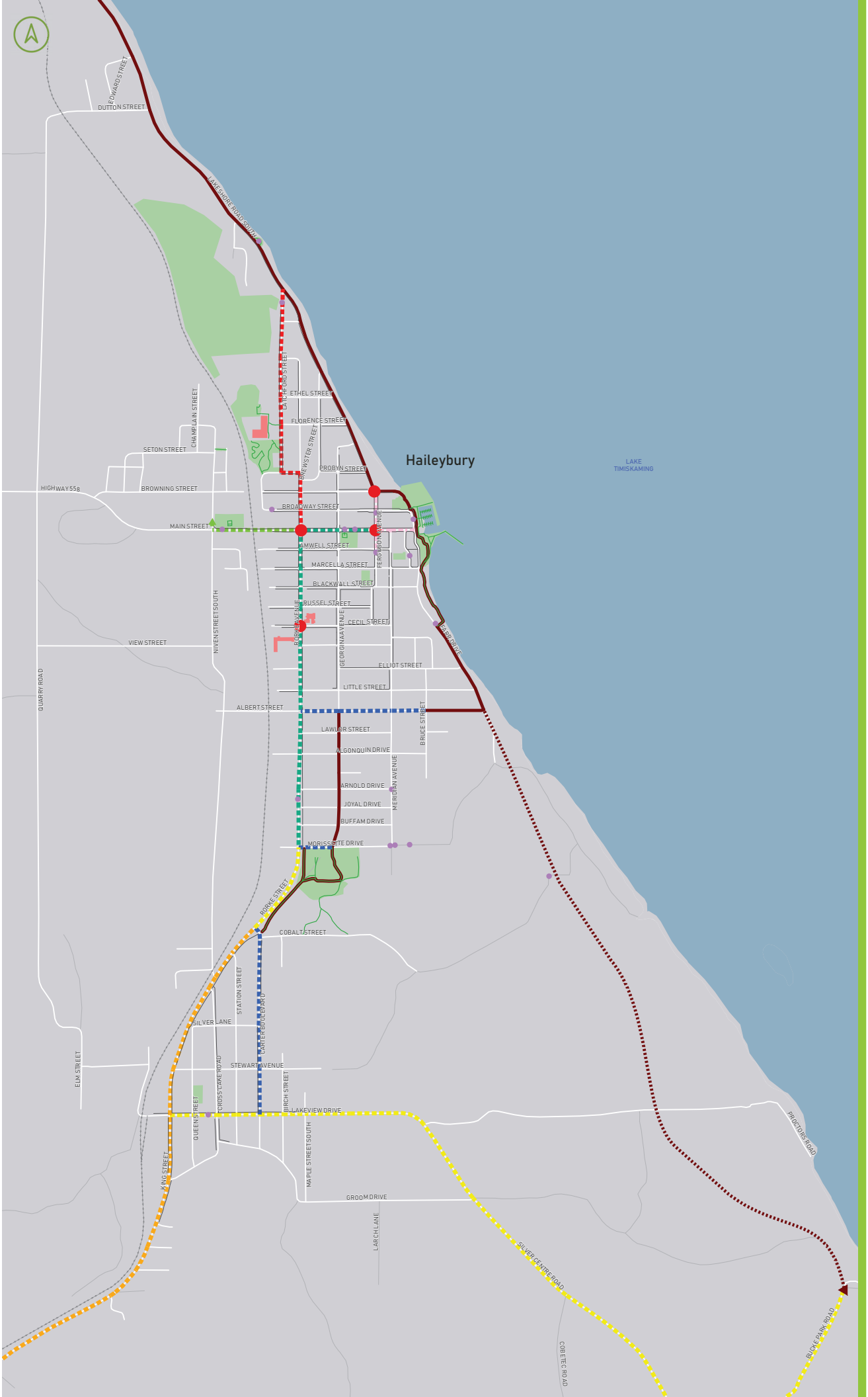
- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- STATO Trail (existing)
- Existing sharrow
- Proposed bike lane
- Proposed buffered bike lane
- Proposed buffered bike lane or two-way on-road AT facility
- Proposed buffered paved shoulder
- Proposed in-boulevard multi-use path
- Proposed off-road multi-use trail
- Proposed pilot project
- Proposed paved shoulder
- Proposed sharrow
- Proposed signed route
- Proposed traffic calming measures
- Proposed pedestrian bridge
- STATO Trail (proposed extension)
- Proposed crossing enhancement
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

0 0.125 0.25 0.5 KM



Map 3c.

Proposed Facility Types and Improvements

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- STATO Trail (existing)
- Existing sharrow
- Proposed bike lane
- Proposed buffered bike lane
- Proposed buffered bike lane or two-way on-road AT facility
- Proposed buffered paved shoulder
- Proposed in-boulevard multi-use path
- Proposed off-road multi-use trail
- Proposed pilot project
- Proposed paved shoulder
- Proposed sharrow
- Proposed signed route
- Proposed traffic calming measures
- Proposed pedestrian bridge
- STATO Trail (proposed extension)
- Proposed crossing enhancement
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

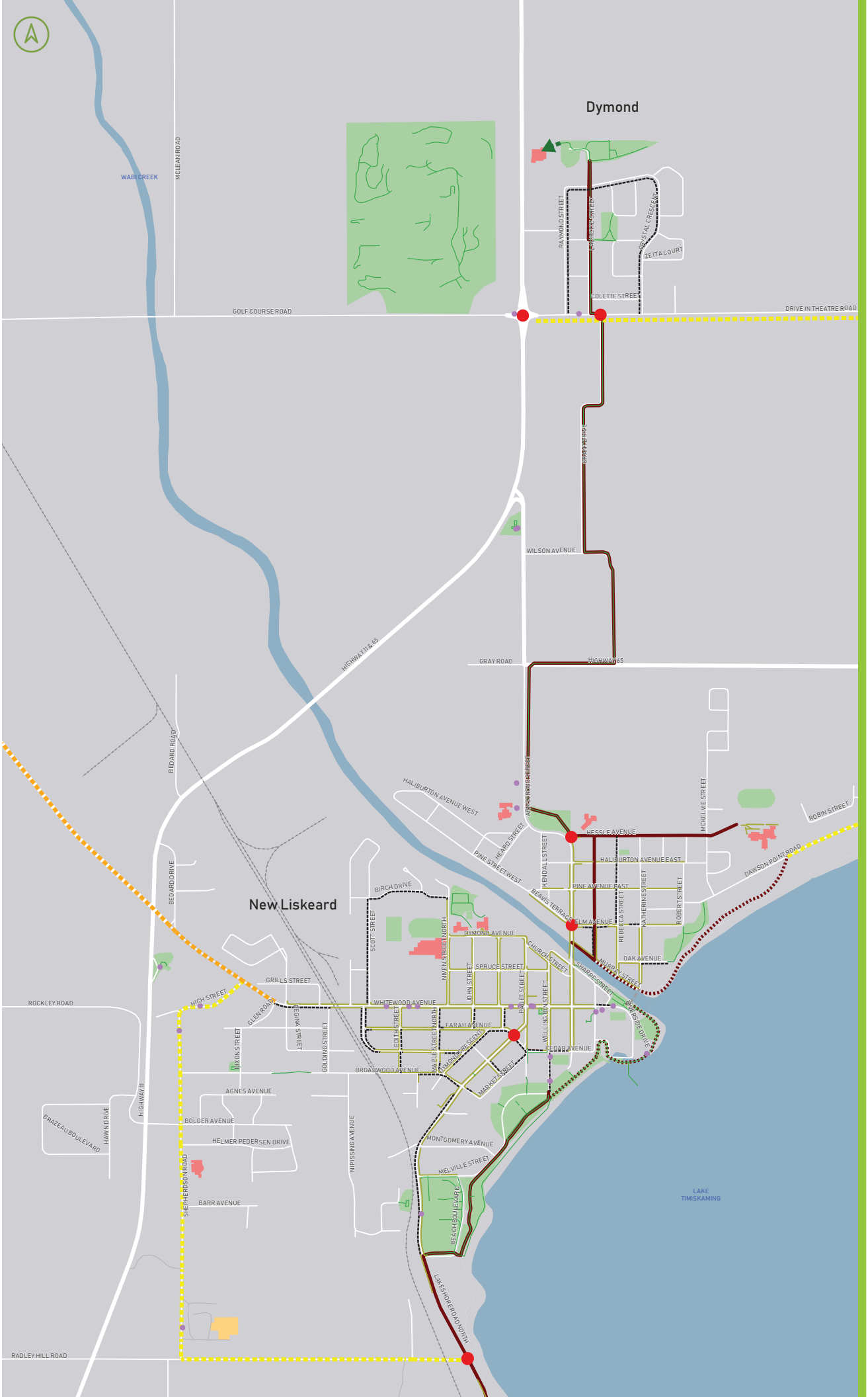
Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

 Date Published: December 2021

0 0.125 0.25 0.5 KM



Map 4a.

Proposed Priority Sidewalk Improvements

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- STATO Trail (existing)
- STATO Trail (proposed extension)
- Proposed sidewalk improvement
- Proposed buffered paved shoulder
- Proposed in-boulevard multi-use path
- Proposed off-road multi-use trail
- Proposed paved shoulder
- Proposed Pedestrian Bridge
- Proposed crossing enhancement
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

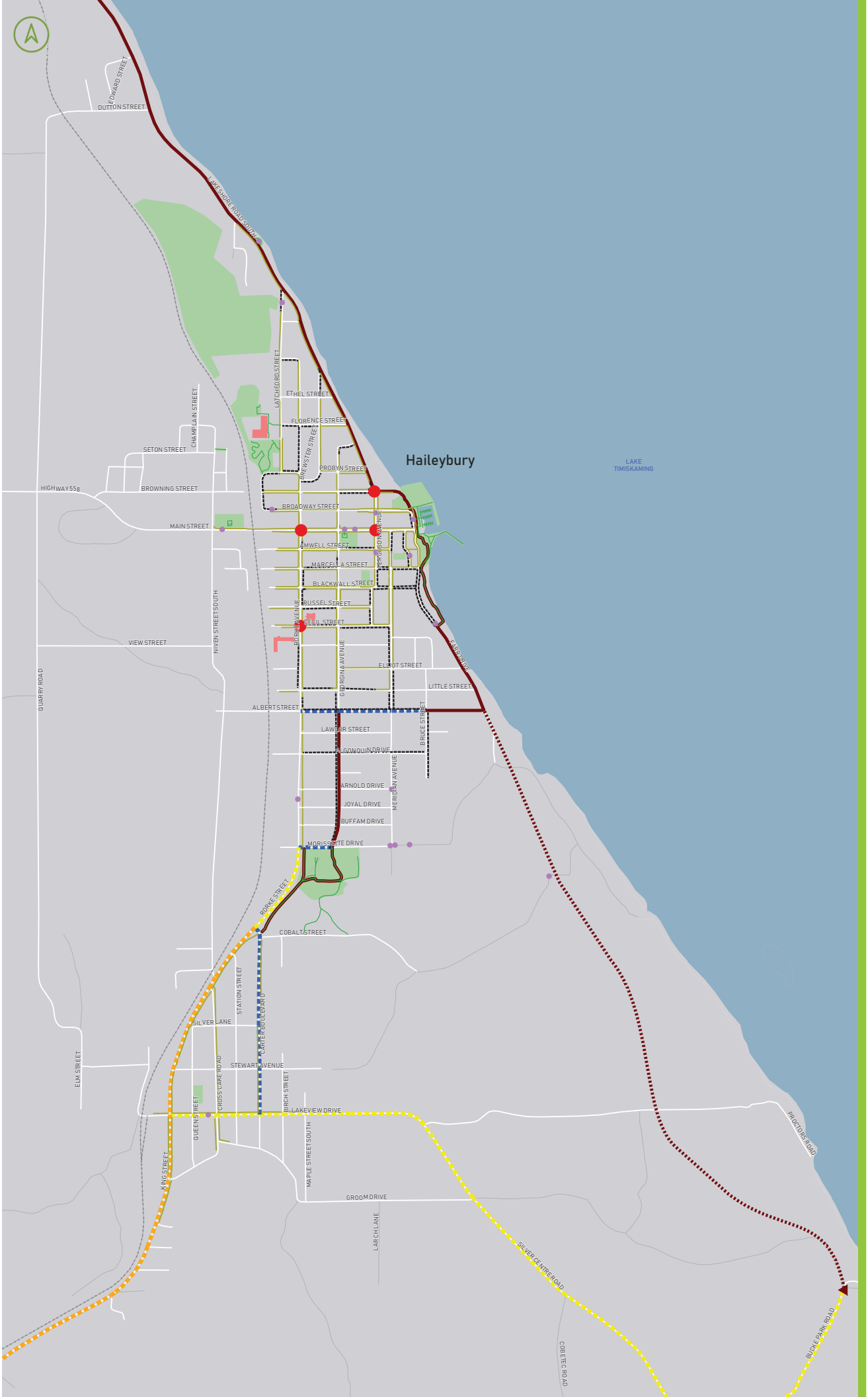
Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

 Date Published: December 2021

0 0.125 0.25 0.5 KM



Map 4b.

Proposed Priority Sidewalk Improvements

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

- Community Destination
- Trailhead
- Existing sidewalk
- Existing trail
- STATO Trail (existing)
- STATO Trail (proposed extension)
- Proposed sidewalk improvement
- Proposed buffered paved shoulder
- Proposed in-boulevard multi-use path
- Proposed off-road multi-use trail
- Proposed paved shoulder
- Proposed Pedestrian Bridge
- Proposed crossing enhancement
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Temiskaming Shores

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

 Date Published: December 2021

0 0.125 0.25 0.5 KM

2.2.8 STEP 6: PHASING PLAN

To conclude the network development process, a phasing plan will be developed to create a rough outline of when each aspect of the network could be constructed. While beyond the scope of an ATMP to finalize specific project construction dates, forecasting implementation timelines at a relatively high level provides the types of support needed to develop the network. Developing a phasing plan for the active transportation network also supports longer-range budgeting and allows projects to be bundled with nearby capital projects, which can often reduce implementation costs.

Like other parts of the network development process, developing a phasing strategy for the plan requires a broad understanding of the local context and conditions. Proposed timelines can be based on alignment with capital works such as road rehabilitations or replacement of below-grade infrastructure like sewers, a connection's significance to the overall network (more important connections can be prioritized for earlier implementation), public demand or safety concerns.

Additional details on the Phasing Plan associated with Temiskaming Shores proposed active transportation network, including phasing horizons and costing estimates for individual projects will be discussed in the Phasing and Implementation Discussion Paper.

PROPOSED PHASING

While the phasing of all network recommendations will be determined in later stages of the ATP process, it is important to establish proposed implementation horizons early on to inform these later discussions. Key to developing these horizons is an understanding of both the network recommendations themselves as well as the way that the City implements infrastructure enhancements. Recognizing that circumstances change, phasing assignments within these horizons should not be considered a strict commitment but a list of recommendations that can be discussed and refined by City staff and Council on an ongoing basis. In particular, the items included in the short-term phasing horizon should be reviewed by City staff annually to confirm that projects vital to the completion of a safer, connected active transportation network are moving forward at a pace that is reflective of their significance.

For this Plan, the horizons for construction are defined as short term (0-5 years) and longer term (5 years and beyond). While this time horizon presents fewer categories of implementation (many plans will have a 0-5 year, 5-10 and 10-20 year horizon), the relatively small number of projects and the high degree of constructability for the majority of the high-impact projects outlined in this Plan lend themselves to a more ambitious program of **completing the network** during the early parts of the implementation of this Plan, with the longer-term priorities serving to **expand the network** and connect to some of the destinations that lie outside of the settlement areas of Temiskaming Shores. A brief explanation of some of the considerations that will lead to the categorization of each element of the network is included below in **Table 6**.

Table 6 | High level criteria used to distinguish recommended facilities scheduled within either a short-term (0-5 years) or long-term (5+ years) implementation horizon.

Short-Term (0-5 years) Completing the Network	Long Term (5+ years) Expanding the Network
– Accounted for within existing plans/projects – High priority projects vital to achieve active transportation connectivity – Meet all or most of the network criteria at a high level	– Outside of capital considerations that are already scheduled – Don't meet as many of the network criteria but remain worthy aspirational projects – Challenged by geometric constraints and implementation costs.

2.3 DESIGNING THE NETWORK

2.3.1 DESIGN PRINCIPLES

When selecting routes and facility types to create a network that is considered safe, equitable and accessible, it is important to clearly define the principles that will guide the network development. Based on guidance provided in current design standards and the input received through the ATP Process, the network being proposed for the City of Temiskaming Shores is based on the following principles, which complement the network development priorities and could be used beyond the lifespan of this plan to inform future decision making.

DESIGNING FOR ALL AGES AND ABILITIES (AAA)

AAA refers to the planning and design of transportation networks and public realms that are considered safe, comfortable and equitable by the community. Historically, active transportation facilities in North America have favoured confident, able bodied users. An AAA approach considers the needs of populations that have been traditionally under-served when it comes to active transportation, particularly: children; seniors; women; people of colour; low-income users; people with disabilities; and people moving goods or cargo. Where possible, this plan strives to provide AAA facilities to open active transportation to the entirety of Temiskaming Shores' population, creating new opportunities to grow the community of active transportation users in the City. In practice, this means ensuring that road users are provided with physically separate space where possible and reducing vehicle speeds and volumes where separation cannot be achieved.

MOTOR VEHICLE SPEED INFLUENCES CYCLIST SAFETY

When designing for an interested but concerned user, practitioners should strive to provide as much physical separation between motor vehicle lanes and the facility as possible. However, it is recognized that it may not be possible or practical to design all facilities to an all ages and abilities standard. An assessment of design criteria of the roadway context should be undertaken to inform the selection of routes and facility types.

WHEN IN DOUBT, DESIGN FOR SAFETY

In some cases, a segment of road in Temiskaming Shores may be "on the edge" when it comes to recommended facility type based on the OTM Book 18 guidance. In these instances, this plan tends to select the higher comfort option (for example, recommending a separated cycling facility such as a protected bike lane rather than a designated facility like a painted bike lane) to generate a network that is future ready and will also encourage the highest number of new riders.

INTEGRATION OF COMPLETE STREETS PLANNING AND DESIGN

Complete Streets are streets for everyone – they are roads that are designed to balance the needs of all road users including pedestrians, cyclists, transit users, and motor vehicles. Active transportation is considered a key element of Complete Streets as walking and cycling infrastructure can offer greater transportation choice, accommodate people at all stages of life and facilitate equal access to goods and services.

It is important to note that using a Complete Streets lens doesn't mean that every road needs to accommodate every user type – it is a flexible, context specific approach that recognizes that different roads serve different purposes. For example, Main Street areas primary function is to provide access to local businesses, and to provide a positive experience for people visiting the area. This leads to very different design considerations when compared to an arterial road, where mobility of people and goods is the primary objective. This plan takes a Complete Streets approach to the development of the network, ensuring that all road users have access to a direct, connected network of transportation routes, regardless of how they move or where they are going.

PROVIDING EQUITABLE MEANS OF TRANSPORTATION

Research shows that enhancing opportunities for affordable and reliable transportation options is a key determinant to an equitable transportation system. Transportation equity refers to the ability to provide social and economic opportunities through equitable levels of access to affordable and reliable transportation options based on the needs of the populations being served, particularly populations that are traditionally underserved.

Traditionally underserved groups include individuals in at least one of the following categories: low income, minorities, elderly, immigrant populations, person(s) with disabilities, and/or youth; however, within each community there are unique and geographically specific groups and conditions that need to be considered and addressed. Active transportation is an affordable transportation mode which can help to provide transportation equity and support the diverse needs of all community members, especially when paired with reliable, affordable public transit.

SUPPORTING ECONOMIC DEVELOPMENT AND TOURISM GOALS

It is a goal of this plan to provide the City of Temiskaming Shores with an active transportation network that will highlight the City's natural beauty and connect residents and visitors to the City's unique amenities and local businesses. The plan prioritizes connections to the STATO Trail, the shoreline of Lake Timiskaming and the local conservation areas that have the potential to draw new tourism investment in the community.

In urban areas and neighbourhood main streets, it is important to consider how implementation of a route would impact local businesses and to leverage opportunities to improve the public realm through the development of new active transportation facilities. These efforts can support the City's existing initiatives to support small businesses such as the bump-out patios on Whitewood Ave, while also improving safety and access to local amenities for people who walk, bike or wheel.

The proposed Temiskaming Shores active transportation network is comprised of a variety of facility types, as assigned through the network development process. To support safer, comfortable and more convenient active travel, each facility type has their own design standards and considerations which reflect the needs of the end user. Listed within **Table 7** below are some key guidelines that inform both the selection and design of different active transportation facilities. The table also identifies applicable leading industry references, where additional guidance can be provided.

Table 7 | High-level design guidance for facilities listed within the proposed active transportation network

Facility	Two-way Traffic Volumes (ADT)	Operating Speed	Facility Width	Applicable References
Off-road Multi-Use Trail	N/A	N/A	3.0 – 4.0 metres	MTO Bikeways Design Manual, section 5.0 AODA – Built Environment Standards, section 2.2
In-Boulevard Multi-Use Path	≥6,000	≥40 km/h	3.0 – 4.0 metres + 1.5 metres desired offset from back of curb (0.6 m min offset)	OTM Book 18, section 4.3.4
Buffered Bike Lane	≥2,500	≥40 km/h	1.5 – 1.8 metres + 0.3 – 1.0 m buffer	OTM Book 18, section 4.4.2
Two-Way On-Road Cycle Facility			3.0 – 4.0 metres + 0.3 – 1.0 m buffer with physical separation treatment	
Bike Lane	≥2,500	≥40 km/h	1.5 – 1.8 metres	OTM Book 18, section 4.4
	Maximum one motor vehicle lane per direction, otherwise consider a buffered bike lane at a minimum			
Buffered Paved Shoulder			1.5 – 2.0 metres + 0.5 – 1.0 m buffer	OTM Book 18, section 4.5.4
Paved Shoulder	≥1,000	≥40 km/h	1.5 metres – 2.0m	OTM Book 18, section 4.5.4
	At higher volumes and speeds, consider a buffered paved shoulder			
Sharrow Marking	≤2,500	≤40 km/h		OTM Book 18, section 4.5.2, 4.5.3
Signed route	≤2,500	≤40 km/h[1]	3.0 – 4.5 metre travel lane	OTM Book 18, section 4.5.2, 4.5.3

Note:
In locations where traffic volumes are very low (e.g. less than 1,000 cars per day), the threshold for speed could be higher. Practitioners are encouraged to reference the OTM Book 18 facility selection process to help identify the desirable level of separation for a facility based on traffic volumes and posted speed. The facility selection process includes three steps. It is important that practitioners complete each step to identify the best possible facility type based off the specific context and roadway characteristics.

2.3.2 REDESIGNING MAIN STREETS

It is important to recognize that Temiskaming Shore's active transportation network is designed to complement the City's existing transportation system. Designing for active transportation must balance the many roles and functions that streets already serve. Arguably some of the most important decisions in this Plan will need to be made as it relates to the City's downtown areas, which serve as both important transportation corridors as well as commercial main streets. Balancing the needs of sidewalks, public spaces, traffic movement, on-street parking and cycling facilities within a narrow right of way presents many challenges. Based on the feedback received throughout the process of preparing this Plan, the fundamental objective of the Downtown Streets in Temiskaming Shores should be to **foster a stronger sense of place through the creation of a more human-scale public realm**. It is therefore important to consider how to balance the mobility of all road users with the provision of space to linger and explore, ensuring that these important areas of the City meet the needs of the community.

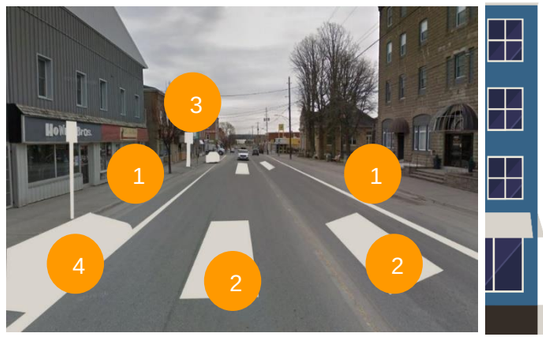
Recognizing that the City's Main Streets may not come up for a roadway reconstruction for several years, this Plan provides options for high quality active transportation and placemaking infrastructure in the City's downtown areas without relying on extensive reconstruction. Given that the available pavement width in both downtown New Liskeard and Haileybury is relatively wide, this Plan offers some potential design solutions that would provide an enhanced environment for walking and cycling without significantly impacting vehicular operations or parking capacity in the Downtown areas. Using traffic calming measures, expanding the available space for walking and cycling and enhancing wayfinding and signage can help to reduce vehicle speeds in these corridors, providing a more comfortable environment for people walking or cycling in the area. These interventions would complement the City's existing "bump out" program, enhancing the urban environment in these important retail corridors. Based on the feedback received and the importance of the Downtowns to this Plan, proposed cross sections for Whitewood Avenue in New Liskeard (**Figure 7**) and Ferguson Avenue in Haileybury (**Figure 8**) are presented here. The Whitewood design places a higher priority on mobility, with new parking-protected bike lanes added, which the Ferguson design places a higher priority on placemaking and traffic calming.

Suggested Design Treatments/ Interventions

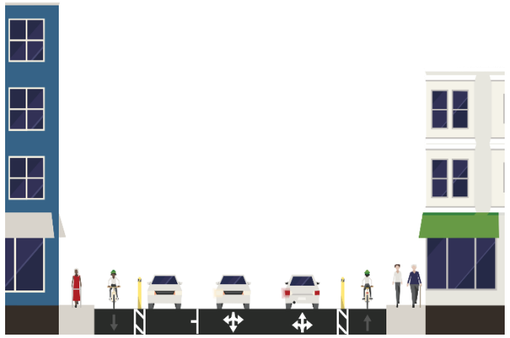
1. Remove one or both sides of on-street parking and reallocate road space towards separated cycling lanes or curb extensions
2. Place additional pavement markings within the roadway, such as sharrows to communicate the intention for a shared roadway
3. Install new signage to improve wayfinding and awareness about active transportation. Consider using a distinctive design template to build awareness around the community's local AT brand
4. Implement a variety of traffic calming measures which slow motorists and make the road safer for active travel. This can include measures such as bulb outs, curb extensions or speed humps

Whitewood Avenue (New Liskeard)

Existing Conditions



Suggested Transformation



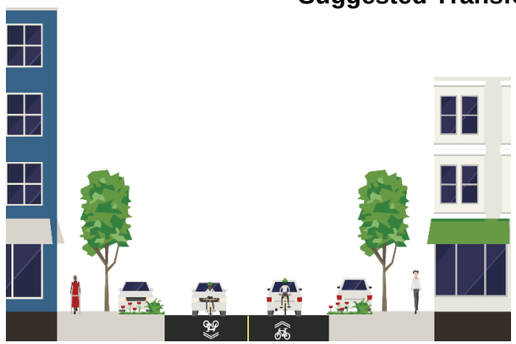
*This redesign places a priority on **mobility** along the Whitewood Corridor, providing safe space for all road users. By adding parking-protected bike lanes, the corridor helps to connect people on bikes into the Downtown and provides additional separation between traffic and the sidewalk.*

Figure 7 | Marked up photo and series of cross section diagrams illustrating the existing streetscape of Whitewood Avenue and suggestive design treatments to better accommodate active transportation [Source: Google Streetview, 2021 & Streetmix]

Ferguson Avenue (Haileybury)

Existing Conditions

Suggested Transformation



This redesign prioritizes placemaking, with additional space allocated for wider sidewalks, curb extensions, planters and additional street furniture that enhance the streetscape. By adding visual interest and complexity along the corridor, vehicle speeds should also decrease.

Figure 8 | Marked up photo and series of cross section diagrams illustrating the existing streetscape of Ferguson Avenue and suggestive design treatments to better accommodate active transportation [Source: Google Streetview, 2021 & Streetmix]

2.3.3 SEPARATION TECHNIQUES FOR ON-STREET FACILITIES

In circumstances where on-street facilities are adjacent to higher speed traffic (generally 60km/h and above), physical separation is preferred to improve the safety and comfort of people on bikes. Separation techniques can vary widely, from flex bollards mounted directly to pavement to curb-separated facilities located away from the roadway. Choosing an appropriate level of separation relies on the context of the roadway and the goals of the proposed facility. Ideally, physically separated facilities should be designed to support the safety and comfort of people who would fall into the “interested but concerned” group of cyclists to maximize their impact on ridership within the community.

One common approach to creating physical separation is through reallocating space previously used for motor vehicle lanes to create a buffer for on-road cycling facilities. Often referred to as a “road diet”, this method is a well-proven, cost-effective intervention that is shown to improve safety for all road users. The method is also known to have minimal impacts on traffic operations in most contexts where traffic volumes are under 20,000 vehicles per day. Road Diets often rely solely on restriping the existing pavement to create space for cycling, meaning that the cost of implementing them is relatively low. In some circumstances, creating separated cycling space may require the removal of one or both sides of on-street parking. In circumstances where parking is required, a wide buffer may be implemented between the parked vehicles and the bike lane to reduce the instances of “dooring” collisions. Alternatively, it is recommended that the bike lane may be placed against the curb to create physical separation and protection using parked cars to enhance safety.

Emerging best practice and guidance stresses that physical separation should be considered as often as is feasible and practical when designing cycling facilities. Providing a physical barrier between people cycling and people driving can enhance both real and perceived safety, encouraging more people to ride. Physical separation can come in a variety of styles and formats, most types can be distinguished as either temporary or permanent. Listed below in **Figure 9, Figure 10**, **Figure 11** and **Figure 12** are some common types of each, as well as general guidance on where they are most appropriately applied:

Temporary

Temporary physical separation is preferred along roadways with lower traffic speeds but greater amounts of manoeuvring traffic (i.e. on street parking, delivery drop offs). Their ability to be installed and removed also make them ideal in places where specialized equipment for winter maintenance is not readily available.

Common examples: Hatched buffer (Figure 9) or Bollards

Permanent

Permanent physical separation is preferred for on-road facilities that receive high ridership and are located on roadways with more hazardous traffic conditions (i.e. heavy trucking). They are more expensive to implement but are more durable and offer greater protection to facility users.

Common examples: Pinned Pre-cast curbs (Figure 10) or Low Concrete Wall Barrier

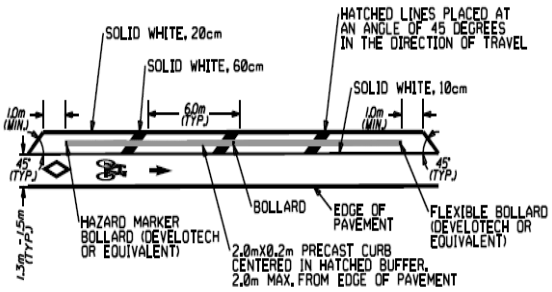


Figure 9 | Technical drawing of potential hatched buffer treatments [Source: Vodden Cycle Tracks Project, 2021]

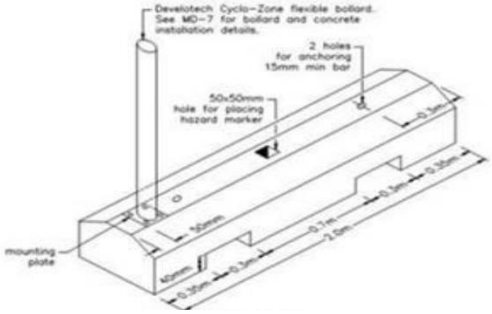


Figure 10 | Technical drawing of potential pinned pre-cast curb treatment [Source: Colborn St Cycle Tracks Project, 2018]

Figure 11 | Example of Bollards and Planters used for physical separation on a bike lane [Source WSP]

Figure 12 | Example of permanent physical separation using rolled curbs [Source WSP]

2.3.4 INTERSECTIONS AND TRAIL CROSSINGS

Proper intersection and trail crossing design is a key component of the creation of a safer, connected network of active transportation infrastructure. Given the potential for collisions at these locations, it is important that best practices in design be referenced whenever a trail or cycling facility crosses a roadway. Intersection treatments can vary widely, with a variety of pavement markings, lighting options, signage and physical infrastructure changes being available to designers through OTM Books 18 and 15. While every crossing will be unique given the context of the crossing, facility types can generally be categorized into one of four options:

- Setback crossings, where a trail crosses an intersecting roadway
- Adjacent crossings, where a trail crosses an intersecting roadway
- Controlled mid-block crossings, where a trail crosses a roadway at a perpendicular angle
- Uncontrolled mid-block crossings, where a trail crosses a roadway at a perpendicular angle

General design guidance for Setback Crossings (**Figure 13**) and Adjacent Crossings (**Figure 14**), are provided here – these are the crossing types that are most applicable to the types of crossings that are proposed for Temiskaming Shores. Additional detail on each intersection treatment type can be found within sections of OTM Book 18 referenced.

INTERSECTION TREATMENTS

Setback Crossings (OTM Book 18 Section 6.3.2)

In this condition, the cycling facility or multi-use trail crosses the intersection set back from the adjacent motor vehicle travel lanes. Also known as a "protected intersection", this treatment does not remove all potential conflict, but it does increase the user's level of comfort and safety through partial physical separation and by encouraging slower motor vehicle speeds when turning. In a setback crossing, the cycling facil offset from the parallel travel lane b 6 metres (desired). Applicable for in-boulevard facilities such as cycle tracks and MUPs.

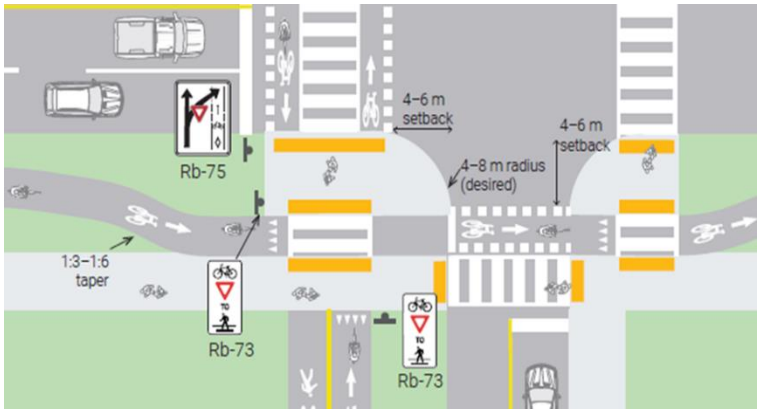


Figure 13 | Components of a possible setback crossing intersection [Source: OTM Book 18]

Adjacent Crossing (OTM Book 18 Section 6.3.3)

In this condition, the cycling facility crosses the intersection adjacent to (or with minimal setback from) motor vehicle travel lanes, either on-road or directly adjacent. Adjacent crossings can be applied for both on-road (bike lanes, paved shoulders) and in-boulevard cycling facilities (multi-use pathways).

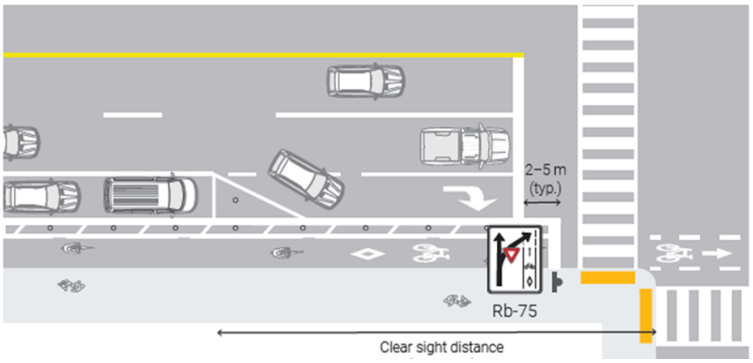


Figure 14 | Components of a possible adjacent crossing intersection [Source: OTM Book 18]

MIDBLOCK CROSSING TREATMENTS

In some circumstances within Temiskaming Shores, trails facilities directly intersect roadways at a location where there is no other crossing present. At these locations, it is important that both trail users and people driving understand their role in ensuring safety, which can be achieved through proper crossing design. Within Temiskaming Shores, grade-separated crossings (such as tunnels or bridges) would be prohibitively expensive, so this Plan is recommending a mix of controlled (**Figure 15**) and uncontrolled traffic crossings (**Figure 16**). In most instances in Temiskaming Shores, the combination of trail use volume and traffic volumes would likely lead to the selection of uncontrolled crossings, although there are several locations within the City where a controlled crossing could be warranted. Listed below is an overview of each crossing type's design, with additional details available in OTM Book 18.

Controlled crossings

Figure 15 | Diagram illustrating the design elements of a signalized mid block crossing and a photo of a sample application [Source OTM Book 18]

Controlled crossings are defined by the inclusion of some for of formal traffic control. This can include stop or yield signs, intersection pedestrian signals (IPS), mid-block signals or full traffic control signals. To control and separate the movement of cyclists and pedestrians across the intersection, controlled crossing can feature a crossride – a delineated space for people cycling to cross without dismounting.

Uncontrolled crossings

Figure 16 | Diagram illustrating the design elements of an uncontrolled mid block crossing and a photo of a sample application [Source OTM Book 18]

Uncontrolled crossings lack any form of traffic control and require active transportation users to safely yield to passing motorist traffic. These facilities typically incorporate specific signage and geometric design elements to reinforce proper traffic behaviour. As active transportation users do not maintain the right-of-way, cross rides or any other form of pavement markings should not be applied along the crossing. Traffic calming measures, however, are recommended to enhance safety by reducing the operating speed of motor vehicle traffic and minimize the crossing distance of active transportation travels.

2.3.5 ACCESSIBILITY

As a vital form of public infrastructure, it is essential that all active transportation facilities be planned and designed to accommodate the needs and abilities of all potential users. This maximizes the utility of investments while also affirming broader municipal imperatives related to supporting diversity and inclusion. Within Ontario, these requirements are not only encouraged but codified under provincial law through the Accessibility for Ontario with Disabilities Act (AODA). Through the legislation, a specific target has been set of making the entire province accessible to people with disabilities by 2025.

"The people of Ontario support the right of persons of all ages with disabilities to enjoy equal opportunity and to participate fully in the life of the province." The stated goal of the AODA is "to make Ontario accessible for people with disabilities by 2025." (Accessibility for Ontarians with Disabilities Act, 2004)

To action AODA in practice, the Government of Ontario has also adopted The Accessibility Standards for the Built Environment. This accompanying document serves as a key technical reference which prescribes specific guidelines and standards needed to support universal barrier-free access. Forms of public infrastructure to which these standards apply include both on-road and off-road active transportation infrastructure such as multi-use pathways and multi-use trails. While these standards only apply to projects involving either new construction or extensive renovation, the creation of a more accessible, equitable transportation system should be a goal of the City as this Plan moves into the implementation phase.

For multi-use trails, the AODA provides guidance on a wide range of design considerations. The City should apply guidelines outlined in the Built Environment Standards as a minimum unless the trail's location, surrounding environment or desired user experience warrants their exceedance. Following these guidelines is not only a legislative requirement but is vital in preserving the STATO trail's current designation as a fully accessible trail, amidst future expansions or enhancement projects. Sections 80.8 and 80.10 of the Accessibility Standards for the Built Environment provide the technical requirements for off-road multi-use trails, which includes the following:

- Minimum clear width 1.0m
- Minimum head room clearance of 2.1m above trail
- Surfaces are to be firm, stable with minimal glare
- Maximum running/longitudinal slope of 10%
- Maximum cross slope of 2%
- High tonal or textural changes to distinguish the edge
- Standards also address changes in level, openings in the surface, edge protection (e.g. near water)

In addition to adhering to AODA, all active transportation network signage and wayfinding should be easily understood and detectable by users of all abilities. This includes using simplified text, visual icons and clear and contrasting colours which help create signage and mapping / messaging that is informative, legible and visible. Wayfinding and signage systems should also clearly communicate which trails are accessible so that users can make an informed personal decision about which pathways they will use.

2.3.6 OFF-ROAD TRAIL DESIGN

In addition to on-road facilities and off-road multi-use pathways, Temiskaming Shore's proposed active transportation network features several off-road trails. This includes trail facilities found within the City's many local natural areas and parks, including Devil's Rock and Pete's Dam. Like all other facility types, it is vital that all trails be designed to reflect leading applicable technical guidance as well as local priorities and concerns, including an all-ages and abilities approach. This guarantees a more streamlined and standardized process to better inform the implementation of new facilities and refurbishment of existing ones. Additionally, identifying a clear set of trail design standards and guidelines also offers a more predictable travel experience for trail users. With few new trails recommended as part of the proposed network, guidelines listed below were tailored to the context and condition of those already found across the City.

TYPICAL TRAIL DESIGN STANDARDS

WILDERNESS TRAIL DESIGN STANDARDS (**FIGURE 17**)

- **Width:** 1.2 – 2.0m width
- **Surfacing:** Compact dirt or woodchip
- **Maintenance:** Annual/reactive service (i.e. tree hazard removal, erosion repair). Includes topping up of mulch surface as necessary, keeping trail envelope free from obstacles (e.g. pruning to maintain clear zone).
- **Accessibility:** Maximum of 5-10% Slopes (AODA recreational trail standards), signage to inform level of challenge/conditions to users.
- **Grading/Drainage:** 1-2% cross slope to minimize longitudinal drainage. Culverts, swales, or water bars to manage overland flow crossing the trail.

Figure 17 | Photo of an existing wilderness trail facility within Temiskaming Shores

- **Lighting/Security:** No lighting, future considerations for 'refuge' lighting at trailheads.
- **Amenities:** Low frequency of amenities in rural areas. Examples: trash receptacles at trail entry points. Seating at key locations (e.g. top of long climb, viewpoint). Natural materials used for seating opportunities.

URBAN TRAIL DESIGN STANDARDS (**FIGURE 18**)

- **Width:** 2.5 – 3.5m width
- **Surfacing:** Limestone screenings or asphalt
- **Maintenance:** Regular inspections to identify and repair trip hazards and debris (e.g. garbage, pruning to maintain clear zone).

- **Accessibility:** Maximum of 5% slopes, with minor occurrences of maximum of 5-10% (AODA recreational trail standards), signage to inform level of challenge/conditions to users.
- **Grading/Drainage:** 1-2% cross slope to minimize longitudinal drainage. Culverts, swales, or water bars to manage overland flow crossing the trail.
- **Lighting/Security:** Considerations for 'refuge' lighting and full lighting for trails in higher volume urban/ urban tourism areas.
- **Amenities:** High frequency in urban areas. Examples: trash receptacles at trail entry points and high-volume areas where litter is observed. Seating at regular intervals (e.g. every 200m on average, every 50m in select areas where there is a higher potential for users with mobility impairments). Formal bench seating with arm rests and back rests, augmented with natural materials for additional seating opportunities.

Figure 18 | Photo of an existing urban trail facility within Temiskaming Shores

REMOVING BARRIERS AND PROMOTING USE

Just as people with disabilities experience social and environmental barriers to full participation in society, they can also experience barriers to full participation and enjoyment of parks and trails. Creating parks and trail networks that support people of all abilities is based on the fundamental right to quality of life, individual empowerment, respect and dignity for all people, and the guarantee of equal access to and participation in society.

Barriers are not only physical, and future trail design and programming needs to consider mechanisms for mitigating barriers to use. Barriers can be derived from differing cognitive abilities and mental processes experienced by potential trail users. Barriers can be socially based and stem from issues related to income, language, race, religion, sexual orientation, health, and gender.

Examples of common barriers to use related to trails include:

- Concern or fear of a new trail experience for reasons of accessibility and/or other anxieties;
- Fear for safety after sundown and/or in secluded areas;
- Unavailability or unknown locations of rest areas and distances when selecting a route;
- Inability to read English for navigation and trail information purposes;
- Access in areas where people live and work, in particular low-income areas and factory/industrial employment areas;
- Worry over judgement and/or suspicion when using the trail; and
- Concern over access to amenities such as washrooms, and drinking water

Temiskaming Shores should consider prioritization of upgrades, maintenance and programming that addresses barriers to usage as the plan is implemented. Below is a sample of specific strategies for areas of improvement that the network would benefit form.

WILDERNESS TRAILS & ACCESSIBILITY

Wilderness trails often present a challenge to users that can be perceived as both benefits and barriers to participation. It is important to offer various levels of challenge within a trail system, while making provisions to enable a wide range of users.

- Trailhead and wayfinding signage should clearly communicate level of challenge at decision-making junctions. Information to include; elevation gain, severity and length of slopes, surfacing, width and length of trail, and location of seating/other supportive amenities.
- Surfacing modifications to create smoother walking path including removal or infill around rocks and roots, installing geogrid/geocells to stabilize earthen surfaces over rocky terrain.
- Minor grading to improve surface and drainage/erosion that cause rutting.
- Rerouting of select trail sections to reduce slopes or need for stairs by meandering alignment.
- Adding railings, bike trough along stairs, and mid-rise landing breaks with seating provide a respite along stairs and slopes (**Figure 19**).

Figure 19 | Photo of sloped trail with rustic barrier/handrail to protect aid users.

REST AND REFUGE

It is important to incorporate places for people to rest and take refuge. It is recommended that trails strive for some form of informal or formal seating every 200m, in particular located at points of entry and vistas. This metric is based on accommodating the average user. In areas where there is a higher potential for users with mobility impairments, such as near seniors' homes or amenities, along transit routes, or trails within tourism destination locations, rest seating is recommended every 50m. Formal bench seating with arm rests and back rests are recommended for areas where accessibility is of greater need, however provision of seating outweighs the priority for quality. Substitution or augmentation with natural materials such as flat-topped stones is always welcomed (**Figure 20**).

Figure 20 | Photo of informal rock seating wall in Simcoe County. Stones can be singular free standing, or small clusters.

Consider the provision of shelter in similar areas where accessibility is important, as well as areas where gathering is desired such as vistas, interpretive/commemorative nodes and where distances from point of entry/vehicular parking area significant.

LIGHTING

Lighting is often debated when assessing trail infrastructure. Women and people with young families are more likely to use a trail if lighting is provided, especially when daylight hours are reduced. Lighting a trail, in part or full, can remove barriers to recreational and commuter trail use. Consider lighting all urban trails, in particular those that facilitate connections to transit, amenities and community services. If full lighting is not feasible, consider 'refuge' lighting key areas at regular intervals to provide safe landing points. Solar lighting options are increasing in function and decreasing in cost, with options to delay light activation to concentrate seasonally limited battery function when needed most (**Figure 21**). Solar is an excellent solution for remote trailheads and short sections of trail that present safety/vandalism concerns.

ACTIVITIES & PROGRAMMING

Figure 21 | Photo of small shade structure along trail in Guelph.

Recreational and web-based programming for trail systems provides ample opportunity to draw in users, promote overall trail use, and remove user barriers which may have existed within the trail system. Incorporating programming activities into the trail experience can help draw in a multitude of users to the trail system in a dynamic and interactive way. These programs can be pivoted to target and attract specific user groups to the community's trail system and promote opportunities for people in the community to share experiences and connect with one another. This is especially useful in reducing barriers for different age demographics, like teenagers, to get outside and benefit from collective social experiences, fitness opportunities, and educational resources. Targeting trail use from different demographics can be as simple as creating walking groups for specific ages, genders, and interests. Walking groups can include storytelling walks for children, self-esteem walks for teenaged girls, mom and stroller walks, or walks for people new to the community.

Programming can be leveraged to shift users from busy sections of a trail and encourage use in underutilized areas where increased traffic is desired. Interaction can be further encouraged through the implementation of permanent or temporary signage along a trail that links users to activities on a municipal website, social media group, or other app platform. A 'spot and share' program, for example, can encourage the documentation of seasonal nature photos and social media sharing along the trails. Photo sharing can target themed educational opportunities, like the documentation of migratory birds, and can vary seasonally to attract users throughout the year. Fitness programming can also be used to encourage off season use of trails. Trail users can be encouraged to log and share location specific fitness achievements and photos as they travel throughout the trails.

Activities and programming can be used to remove barriers to participation and help to form social connections with other members of the community. Activities can be themed to respond to different seasons, or to other events and activities that are occurring within the community. Trail tourism can be a multi-disciplinary approach that combines the expertise of the City's different departments to determining the best means to attract users through specific trail programming. For example, a steering committee or

an internal working group made up of the City's departments may be formed to identify programming opportunities that attract atypical trail users and provide them with a reason to experience local trails. Activities could include the temporary installation of game or challenge stations throughout the trail system. Stations can be based on nostalgic games and include oversized lawn components, spray lining on turf, or provide signed or digital signage to describe the intention of the challenge.

SUSTAINABLE DESIGN APPROACHES

Maintenance burdens and exposure to liability risk can be greatly reduced by implementing more sustainable design approaches. Examples of successful application of design techniques and materials have been provided below.

Before looking at engineered solutions, trail alignment should always be reassessed for possible modifications to remove the trail from the situation that is causing the problem. 'Avoid' is one of the best means of mitigating risk. Areas of extreme slopes and low-lying areas that flood are key examples of areas that may not be best suited for trails. Consider the following:

- Meander trails to reduce the degree of slope and mitigate erosion. Alignment adjustments can make a big difference. Avoid tight switch-back style ramps where possible with longer deviations. Note, natural obstacles will need to be placed to force users onto a more indirect path.
- Move trail alignments away from running parallel with watercourse and cliff edges. Instead create destination vistas where the trail periodically leads users, directly or through off shoot trails. Pete's Dam is a good example of where this approach could be applied. Many of the problematic sections of trail are located along the desirable watercourse vistas. By relocating the trail further from the watercourse, select sections can come to the water's edge and be reinforced/elevated accordingly to focus engineered mitigation approaches to select areas only.
- Improve trail drainage through minor grading, elevation of trails with import of materials and/or provision of small culverts to convey water. Make efforts to redirect water around or under the trail.

ADDRESSING TRAILS ON SLOPES

Pedestrians and some self-propelled users are capable of ascending grades of 30% or more whereas some users are limited to grades of less than 10%. Once trail slopes exceed this threshold and slopes are long (i.e. more than 30m) it is important to consider alternative methods of ascending slopes, such as switchbacks and stairs, or alternative locations for the trail (**Figure 22**).

Where construction is feasible, switchbacks are generally preferred because they allow wheeled users such as cyclists to maintain their momentum, and there is less temptation to create shortcuts, as might be the case where stairways are used. Switchbacks are constructed with turns of about 180 degrees and are used to decrease the trail's longitudinal slope. A switchback with a trailbed that is properly "benched" also provides outlets for water runoff at regular intervals, thus reducing the potential for erosion. Switchbacks typically require extensive grading and are more suited to open locations where construction activity will not cause major disruption to the surrounding environment. Switchbacks can be difficult to implement in wooded areas without significant impacts to surrounding trees.

Figure 22 | Photo of rolling grade dip method to mitigate longitudinal slope rutting. Buried log used to create drain break hump (Mount Nemo, Burlington).

When designing switchback and stair structures on trails the following should be considered:

- Use slip resistant surfacing materials, especially in shady locations.
- Incorporate "corral" barriers on either side of the upper and lower landing to prevent trail users from bypassing the stairs; and
- Provide signs well in advance of the structure to inform users that may not be able to climb stairs.

Temiskaming Shores should consider realigning and/or modifications to select sections of trails to reduce negative impacts of drainage and decrease severity of slopes. **Figure 23**, **Figure 24** and **Figure 25** illustrate approaches to slope management on recreational trails.

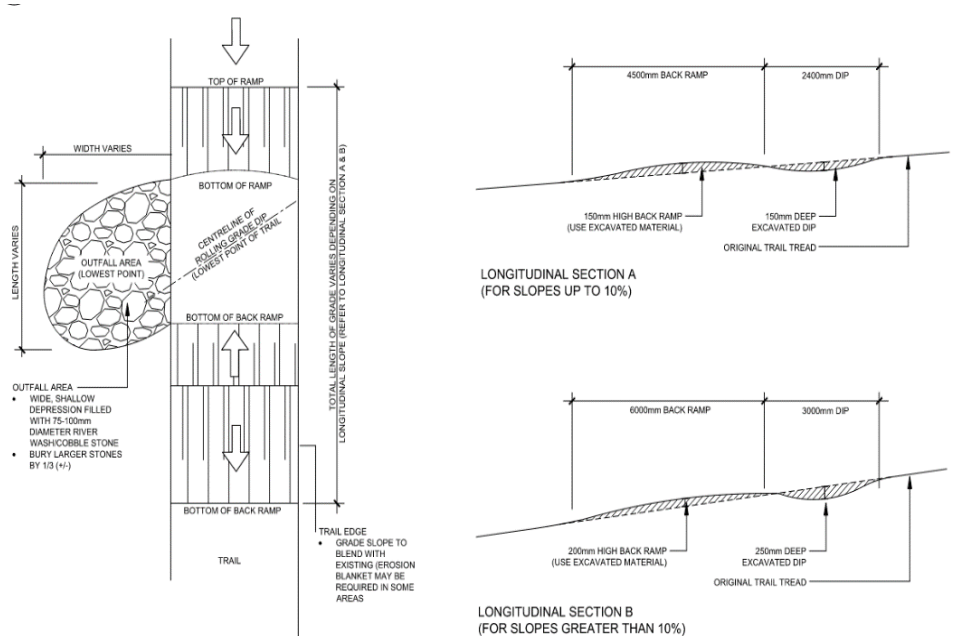


Figure 23 | Rolling Grade Dip Approach

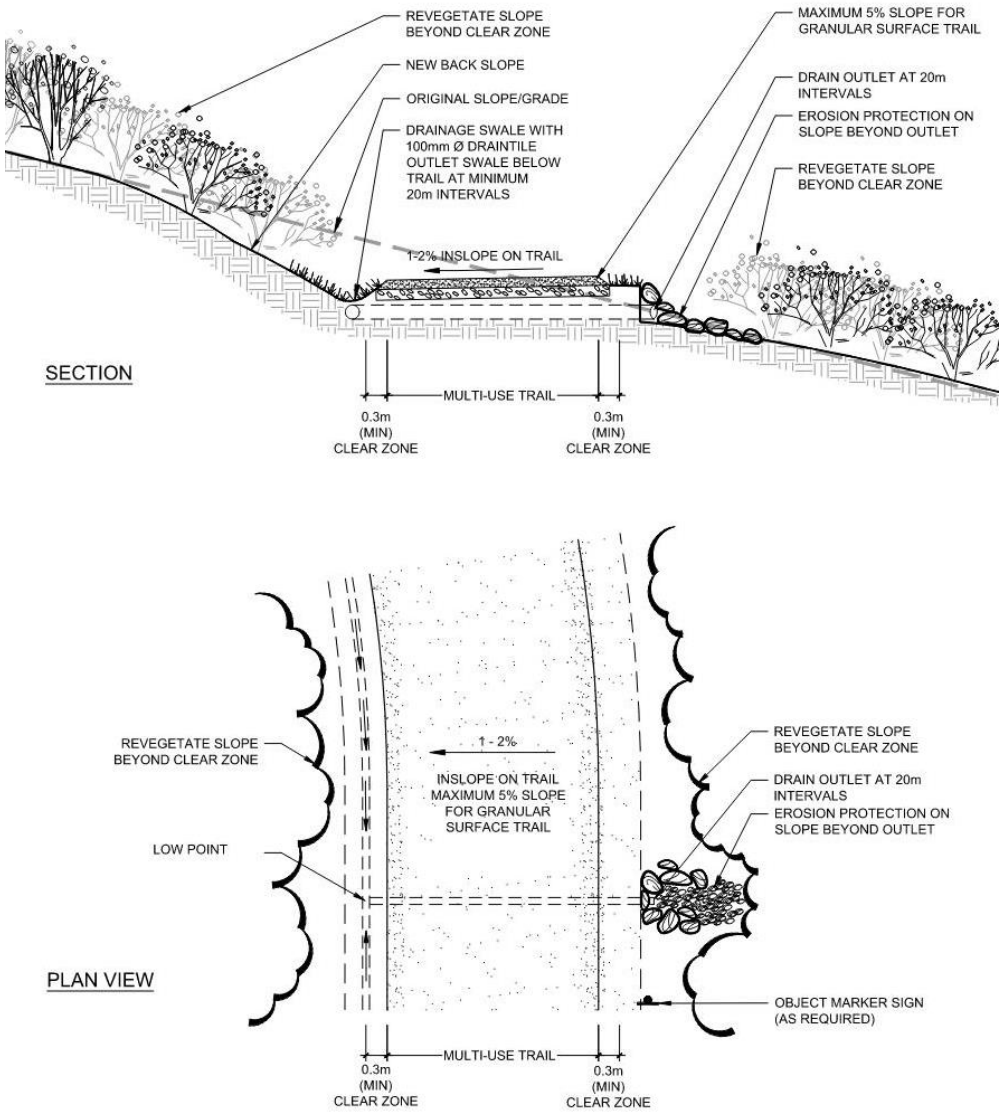


Figure 24 | Trail on Slope with Drainage Pipe

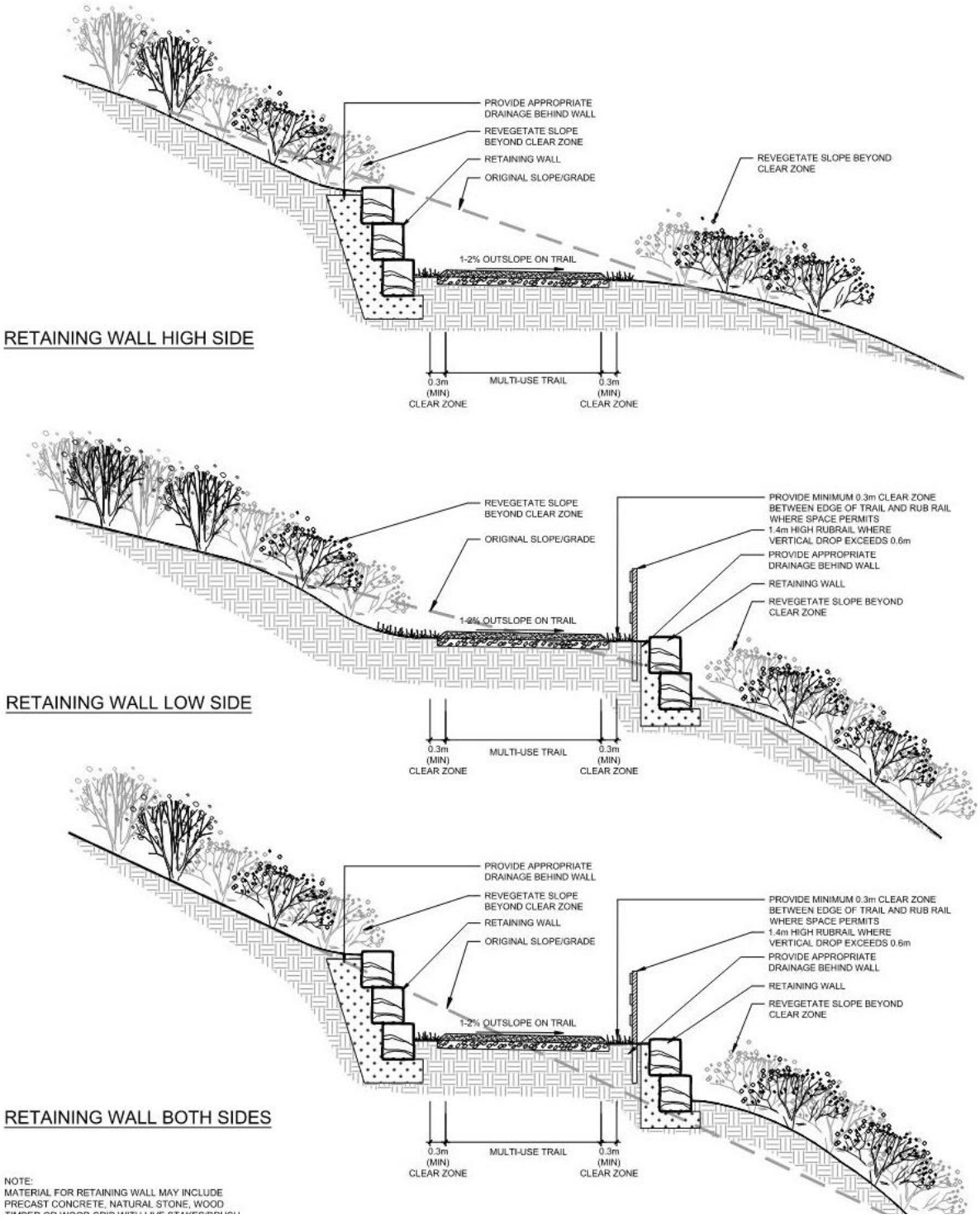


Figure 25 | Trail On Slope with Retaining Walls

STRATEGIES FOR REOCCURRING EROSION AND UNSTABLE SURFACING

For trails that are frequently eroded or unusable due to seasonal flooding and unavoidable drainage patterns, geogrid systems will provide a more sustainable solution – reducing maintenance, increasing safety, extending seasonal use of a trail. These systems lock together and can be filled with soil, granular screenings or seeded for turf growth. Products such as Ecoraster shown in **Figure 26**, can support vehicular loads and provide traction on slopes. Typically these systems are installed with a granular base, however can be laid on existing compacted earthen surfaces. Reinforcing trail sections at Pete's Dam (**Figure 27**), would stabilize areas that struggle with flooding, erosion and hard to traverse slopes. Geogrids could also be selectively applied to rustic wilderness trails such as located at Devil's Rock where rocks and roots create difficult to traverse sections of trail. Note, geogrids should be considered for parking areas where increased surface stability is desired and/or demand for maintenance is high.

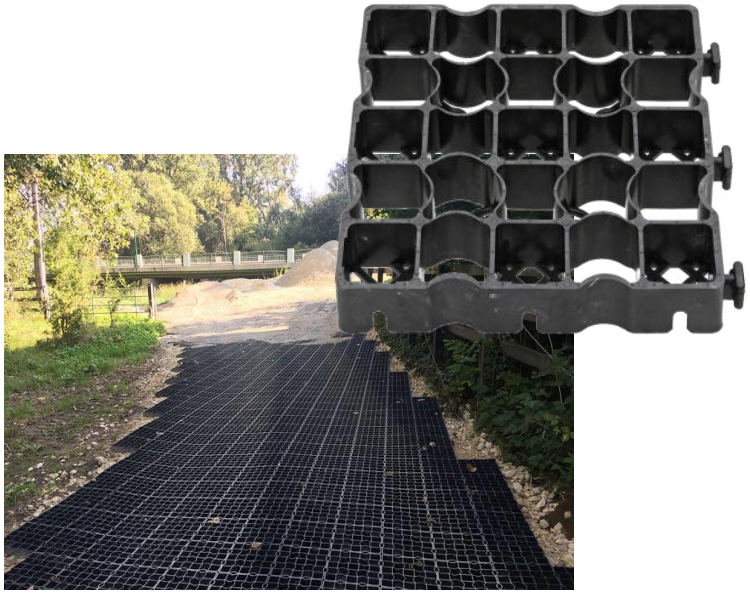


Figure 26 | Photos of Ecoraster (a product manufactured in southern Ontario. Grid structure can be filled with earth, granular or turf and can support maintenance vehicles.

Figure 27 | Photos of trail under water at Pete's Dam

BRIDGE STRUCTURES & BOARDWALKS

Prefabricated pedestrian bridge structures, in particular those that utilized weathering steel and wood decking, are the most cost-effective structures provided by the market (**Figure 28**). A 'pony truss' or 'H-section' bridge style can span up to 55m and are the most economical design choice. For larger spans, a full 'box truss' is required and can span up to 80m. Alternately, custom bridges can offer more flexibility for architectural design features and are less limiting in maximum free span, however tend to cost exponentially more in design and installation costs.

When spanning greater distances, assess both the material costs and design/approval costs for structures. This can help determine whether it is best to add an in-water pier or design a more extensive structure for a single span. Typically, the use of piers and prefabricated structure is a more cost-effective solution over a costume large spanning structure, however there are several variables such as environmental sensitives and aesthetic/tourism considerations that can influence a decision.

Figure 28 | Photos of Pedestrian Bridges (Left: Etobicoke Creek Trail, 35+/-m) and (Right: Craig's Crossing in Galt, two sections 55m+/- long)

Where trails pass through sensitive environments such as marshes, swamps, or woodlands with many exposed roots, an elevated trail bed or boardwalk is usually required to minimize impacts on the natural feature. If these areas are left untreated, trail users tend to walk around obstacles such as wet spots, gradually creating wider or multiple meandering footpaths through the surrounding vegetation, resulting in vegetation trampling and damage.

On trail build sensitive natural areas, sections with challenging surface (rocks and roots) or erosion/flooding issues, a low-profile boardwalk may be appropriate and requires modest engineering to develop an appropriate design. For trails with more frequent usage, cyclist traffic, and maintenance vehicle access, a more sophisticated design and installation is necessary. This is likely to include engineered footings, abutments, structural elements and railings.

Helical piles are an alternative foundation methodology that is cost effective, and a low impact installation compared to concrete footings **(Figure 29**). Piles are drilled into the ground with a small skid steer or mini excavator then left in place to serve as the foundation. Helical piles allow for a narrower disturbance area and reduced numbers of trips to haul in concrete and haul out fill generated by pier excavations. Where finished boardwalk surfaces are less than 60cm above the surrounding grade a curb along the edge of the boardwalk will prevent users from rolling off the edge. Where the difference in grade exceeds 60cm, a railing should be provided.

Figure 29 | Photo of Board Walk Trail (with helical piles) at the University of Guelph Arboretum.

Temiskaming Shores should consider prefabricated pedestrian bridge structures or boardwalks for highly problematic areas at Pete's Dam where flooding and bank erosion are not compatible with sustainable trail programming. Long term, the cost for investment will be returned through a reduction in repair maintenance and liability risk mitigation, not to mention the user and natural heritage conservation benefits.

TRAILHEADS AND OTHER TRAIL AMENITIES

The implementation of trail amenities at key points along an off-road trail remains an integral component of the City's commitment to design safe, comfortable active transportation and more accessible trail facilities. When addressing trail amenities, common examples include seating / rest areas, parking areas, signage, bicycle parking, loading or unloading areas, garbage receptacles, washroom and amenity buildings and gates / access barriers.

TRAILHEADS

As trailheads are an important aspect to improve a trail user's experience and function as a marketing agent for the greater trail system, it is critical that the appropriate maintenance protocols and procedures be adopted to maintain their state of well repair. Trailheads are often the busy hubs of most trail systems making them more suspectable to wear and tear, waste accumulation, and vandalism accustom with general use. Identifying and managing the level of maintenance required is influenced by the frequency of use, type of user, and size/complexity of trailhead programming. While dependent on the City's available resources, depicted in **Figure 30** and **Table 8** below are some suggested guidelines to inform the proper maintenance of trail facilities:

Figure 30 | Image of a trailhead facility along Prince Edward County's Millennium Trail System [Source Prince Edward County CMP, 2021]

Table 8 | Benefits, Life Cycles, and Maintenance Considerations of Various Trail Amenities

Amenity	Benefits	Life Cycle	Maintenance Considerations
Parking, Drop off Areas & Loading zone	Improves access to trail facilities	5-10 years	Annual infill of potholes and ruts (gravel), repaving or power washing (asphalt).
Rest area	Provides greater accommodation and comfort to those with limited mobility	15-25 years	Annual inspection for defects, basic landscaping
Lighting	Enhances trail safety (CPTED) and reduces potential crime	10-15 years (bulbs) 35-45 years (poles)	Monitoring for bulb replacement and repairs due to vandalism
Signage	Improves facility wayfinding and reinforces facility's brand identity	5-25 years (depending on changes to posted information)	Monitoring for vandalism or expiration of posted information
Waste Management	Minimizes facility upkeep	10-25 years (depending on chosen model)	General inspections for waste pick-up or damages
Gates	Enables temporal access restrictions, including during periods of facility maintenance	15-25 years	General inspections for damages (i.e. weather degradation or salt erosion)
Shelter	Provides protection from inclement weather Provides greater accommodation and comfort to those with limited mobility	15-35 years (depending on chosen construction material)	General inspections for damages and potential touch-up painting
Potable Water	Improves comfort of trail experiences	N/A	Fall decommissioning to empty lines and spring reactivation and quality testing
Washroom	Improves comfort of trail experiences	30-40 years	Daily to weekly inspections and cleaning, nightly locking and daytime opening

SAFETY BARRIERS FOR SLOPES & CLIFFS

Barrier fencing is necessary to provide safety and mitigate risk. It can also play a design and placemaking role for destination vistas, offering a place to lean while viewing and mounting space for interpretive signage. Barriers along landscapes such as Devil's Rock are not mandated by the building code, however, should be a priority in locations frequented by trail users (**Figure 33**). Barriers do not need to detract from views or become a maintenance burden. There are several options for prefabricated products and custom designs that will permit views and accentuate vista nodes, as shown in **Figure 31** and **Figure 32**.

Figure 33 | Image of Devil's Rock lookout

Figure 31 | Image of wood barrier fence, British Columbia.

Figure 32 | Image of Barrier Fence [Source Jakob sire fencing solutions]

ACCESS & CONTROL

Access barriers are intended to allow free flowing passage by permitted user groups, and restrict access by users groups that are prohibited. Barriers typically require some mechanism to allow access by service and emergency vehicles. Depending on site conditions, it may also be necessary to provide additional treatments between the ends of the access barrier and edge of the multi-use trail right-of-way to prevent bypassing of the barrier altogether. Additional treatments may consist of plantings, boulders, fencing or extension of the barrier treatment depending on the location.

There are many design alternatives for trail access barriers and some have proven to be more successful than others. They can generally be grouped into three categories:

- Bollards ;
- Offset Swing Gates; and
- Single Swing Gates. (**Figure 34**)

Each access point throughout the Temiskaming Shores trails network should be evaluated to determine which type of barrier is the most appropriate and what additional treatment(s) may be required to discourage unauthorized users from bypassing the barrier.

Figure 34 | Image of trail bollard (left) and access gate (right)

LEVERAGING TECHNOLOGY (CHARGING STATIONS, WASTE SENSORS, WIFI)

There are several emerging technologies and innovations that can be incorporated into the design of new trails and improvements to existing trails that can enhance the user experience, promote use and widen inclusivity of the trails network. Technology is a tool to be leveraged to address a problem and implementation needs to result in specific outcome. Recognizing that technology-based applications can have high capital, staffing, and training investments costs, the benefits need to be tangible and in magnitude with the problem they are addressing. There is no denying technology is fun and the enthusiasm for technology-based solutions will garnish a high impact amongst current and future generations of young trail users. Consider how technology can expand the traditional parameters of a trail function and programming – reaching more people in meaningful ways, while reducing demands of maintenance and operational practices.

Figure 35 | Image of ESL E-Mobility solar charger

Below are examples of how technology can be incorporated into a trail system.

- Waste and parking management through sensors and dashboard systems to enable 'as needed' maintenance service with strategic deployment and better track frequency of use. Companies such as eleven-x in Waterloo-Ontario offer wireless real-time data solutions that are adaptable to existing amenities/systems.
- Charging stations that offer USB ports (for phones, tablets), E-bike rapid charge ports. Stations can be solar or hardwire powered (**Figure 35**). Charge stations come in stand alone towers or can be found integrated with multi-function site furnishing (**Figure 36**).
- Wi-fi can draw users to a trail system and enable accessibility aid devices. Small cellular broadcast devices require little power and can be stand alone units or integrated with furnishings such as those made by Seedia which collect data from and output directed messaging to users.
- Digital mapping such as Google Street view for trails and 360-degree imagery will allow users to preview the challenges ahead and participate virtually in the beauty of Temiskaming trails when they are unable or for education purposes.

Figure 36 | Image of Landscape Forms outdoor charging station.

- User count displays, such those offered by Eco-Counter provide data that will inform operational management while promoting the success of the trail system.

MAINTENANCE MANAGEMENT

Guiding next steps in the management and maintenance of trails, Temiskaming Shores should consider adopting a trail maintenance log to document maintenance activities. The log should be updated when features are repaired, modified, replaced, removed, or when new features are added.
Accurate trail logs also become a useful resource for determining maintenance budgets for individual items and tasks, and in determining total maintenance costs for the entire trail. In addition, they are a useful source of information during the preparation of tender documents for trail contracts, and to show the location of structures and other features that require maintenance.

Leveraging technology to collect managing data can be a powerful tool to finding efficiencies and more accurately budgeting for need. Digital dashboard style programs can be an effective interface for staff to organize inputs and action items. This type of technology can be linked to digital trail logging, user reporting systems, and on-site sensors (such as waste bin sensors) to create the ability for **on-demand service and strategic deployment of resources**. On demand service styles can replace regular maintenances practices and reduce overall demand on resources.

Reducing maintenance through strategic infrastructure investments, including trail realignment, surface treatment and use of structures should be considered for areas of reoccurring maintenance issues.

Using the maintenance strategies outlined within the trail plan as well as any existing trail infrastructure maintenance practices (**Table 9**) should be a starting point from which a trail specific maintenance plan and budget be developed. In addition, annual maintenance budgets should be refined to accommodate the maintenance of trail facilities. As the proposed trail network is implemented the trail budget should increase to address the increasing number / length of trail facilities that have been implemented.

Table 9 | High-Level Overview of Trail Maintenance Tasks Over Time

FREQUENCY	MAINTENANCE TASK
IMMEDIATE **(within 24 hours of becoming aware of the situation through an app reporting system, email or other notification or observation)**	• As a minimum, mark, barricade and sign the subject area to warn trail users or close the trail completely until the problem can be corrected. • Remove vegetation and/or windfalls, downed branches etc., where traffic flow on the trail is being impaired or the obstruction is resulting in a sight line issue. Remove hazard trees that have been identified. • Repair or replace items that have been vandalized or stolen/removed. This is especially important for regulatory signs that provide important information about trail hazards such as road crossings, steep grades, and sharp curves. • Removal of trash in overflowing containers or material that has been illegally dumped. • Repair obstructed drainage systems causing flooding that pose a hazard to trail users or that is resulting in deterioration that poses an immediate safety hazard. • Monitor trail areas and structures that are prone to erosion after severe summer storms and repair as required. • Repairs to structural elements on bridges such as beams, railings, access barriers and signs.

REGULARLY **(weekly / biweekly / monthly)**	• Trail patrols/inspections should review the trail conditions (as often as weekly in high-use areas), to assess conditions and prioritize maintenance tasks and monitor known problem areas. • Mow grass along edges of trails (in parks and open meadow settings only). Depending on trail location this may be done weekly, biweekly or monthly and the width can vary according to the location (typically 0.5 to 1.0m). This helps keep the clear zone open and can slow the invasion of weeds into granular trail surfaces. Not all trails will have mown edges. In woodland and wetland areas, pruning and brushing is often the only vegetation maintenance undertaken. • Regular garbage pickup (10-day cycle or more frequent for heavily used areas). • Repair within 30 days or less, partially obstructed drainage systems causing intermittent water backups that do not pose an immediate safety hazard, but that if left unchecked over time will adversely affect the integrity of the trail and/or any other trail infrastructure or the surrounding area.
ANNUALLY	• Conduct an annual safety audit. This task can be efficiently included with general annual safety audits for parks and other recreation facilities. • Evaluate support facilities/trailside amenities to determine repair and/or replacement needs. • Examine trail surface to determine the need for patching and grading. • Grading/grooming granular trail surface and topping up of wood chip trails. • Pruning/vegetation management for straight sections of trail and areas where branches may be encroaching into the clear zone. This task is more of a preventative maintenance procedure. Cuttings may be chipped on site and placed appropriately or used as mulch for new plantings. Remove branches from the site unless they can be used for habitat (i.e. brush piles in a woodlot setting) or used as part of the rehabilitation of closed trails. Where invasive species are being pruned and/or removed, branches and cuttings should be disposed of in an appropriate manner. • Inspect and secure all loose side rails, bridge supports, decking (ensure any structural repairs meet the original structural design criteria).
EVERY 3 TO 5 YEARS	• Cleaning and refurbishment of signs, benches and other trailside amenities.
EVERY 10 TO 20 YEARS	• **Resurface asphalt trails (assume approximately every 15 years).** • **Major renovation or replacement of large items such as bridges, kiosks, gates, parking lots, benches etc.**
COST EFFECTIVE	• Patching/minor regarding of trail surfaces and removal of loose rocks from trail. • Culvert cleanout where required. • Top up granular trail surfaces at approaches to bridges. • Planting, landscape rehabilitation, pruning/beautification. • Installation/removal of seasonal signage.

2.3.7 SIGNAGE & WAYFINDING

The design and construction of the network should incorporate a hierarchy of signs each with a different purpose and message. This hierarchy is organized into a "family" of signs with unifying design and graphic elements, materials and construction techniques. The unified system is immediately recognizable by the user and can become a branding element. The details for specific types of signage are provided in the following pages.

WAYFINDING

Wayfinding design must be universally understood to truly be affective and inclusive for all visitors. Trails should be open and welcoming to people with varying levels of mobility, hearing, vision and language. In short, all levels of ability and understanding should be taken into consideration when designing wayfinding features such as signage and maps.

Some examples of wayfinding features that can be utilized to increase accessibility include:

- Non-visual cues such as audio signals or material change at intersections can improve safety for visually impaired people
- Clearly delineating between accessible routes and non-accessible routes can improve usability and safety for people with mobility restrictions
- Using universally understood symbols or icons on wayfinding features can make it easier for people who speak a different language to find their way around.

TRAILHEAD SIGNS

Typically located at key destination points and major network junctions. Trailhead signs provide orientation to the network through mapping, other appropriate network information as well as any rules and regulations. Where network nodes are visible from a distance, these can be a useful landmark and should include municipal "911" addressing for positive location identity. Trailhead signs can also be used as an opportunity to sell advertising space. This not only provides information about local services that may be of interest to trail users, but it may also help to offset the cost of signs and/or trail. At minimum, entrances should have clear signage that uses good colour contrast and a readable font, and details:

- Trail length
- Trail width
- Location of amenities
- Slope steepness
- Surface types
- Hazards
- Trail difficulty
- Accessibility rating (i.e. accessible by wheelchair, walker, scooter, etc.)

DIRECTIONAL AND DISTANCE MARKER SIGNS

Directional signs should be used throughout the trail at regular intervals of uninterrupted segments and at pathway intersections. Directional signs provide users with reassurance that they are following the designated trail network. Coupled with directional signs, distance markers placed incrementally along a trail can enhance the user's experience if they are using the trail for exercise. Frequent and accurate markers can also help in the case of an emergency, especially if they are recorded with a GPS device and incorporated into a digital mapping format.

INTERPRETIVE OR INFORMATIONAL SIGNS

Interpretive or informational signs can be used in combination with directional signs or on their own to educate users of points of interest along the trail, such as natural and cultural heritage features. These signs provide specific educational information about points of ecological, historical and general interest, as well as current land uses along the corridor depending on the interpretive program and complexity of information to be communicated.

REGULATORY SIGNS

Regulatory signs are intended to restrict aspects of travel and use along the trail. Signage restricting or requiring specific behavior is not legally enforceable unless it is associated with a provincial law or municipal by-law, etc. Where applicable, it is recommended that authorities discreetly include the municipal by-law number on signs to reinforce their regulatory function. Standard regulatory signs are aluminum plate blanks of varying dimensional size with a painted or reflective sheeting surface. Regulatory signs call attention to a traffic regulation concerning a time or place on a route and are installed in an optimal location most visible to trail users. Generally, these signs are rectangular shape except for stop and yield signs. For most trail applications the size can be reduced from the specified size for signs used along roads (i.e. 50% smaller). Typically, they are individually mounted on a metal post or custom wood post; grouped on a metal post or custom wood post; or grouped on a custom sign board, so long as the sign message is clearly visible.

WARNING SIGNS

Warning or cautionary signage should be used throughout the trail system on an as-needed basis. Where traffic control signs are needed (stop, yield, curve ahead etc.), it is recommended that scaled-down versions of recognizable road traffic control signs be used.

These caution signs may be location or purpose specific and will need to be customized. For example, the trail system will provide access to destination features in parks including playgrounds. Children will be playing and not always paying attention to their surroundings while actively using playgrounds, and portions of trails surrounding playgrounds may also be promoted as tricycle / bicycle loops for very young riders. Caution signage should be placed at the approaches to these areas to alert faster moving trail users such as cyclists they are approaching a playground area and remind them to slow to 10km/hr. and be aware of children playing and possibly crossing the trail.

Another example is the temporary closure sign. Some locations along the trail network will also be used by festivals and events that attract large numbers of users, some of whom use the trails to travel to the event which may result in congestion on the trails themselves. Additionally, within the event space some activities may overflow onto trails, and depending on the event and number of participants it may be appropriate to temporarily close the trail to through cycling traffic, and require cyclists to dismount and walk their bicycles through the event area.

INTERPRETIVE, COMMEMORATIVE & PLACEMAKING SIGNS

Interpretive, commemorative and placemaking signs are a key tool in telling the stories of your community, the land and the histories along the way. Such signs should be graphic in design, augmented with QR links to information on web platforms to provide additional detail. Temiskaming Shores is rich with such stories and the trail system offers an excellent opportunity to share with local residents and visitors. Material selection is important and should include anti-graffiti and UV protective coatings if using a standard sign board material. Etchings on granite and tempered glass are increasingly popular and very resistant to degradation/damage.

2.3.8 WABI RIVER BRIDGE

The recommended facility for the Wabi River crossing consists of a bi-directional cycle track in place of the easternmost northbound vehicle lane. The intention of a bi-directional cycle track along the eastern edge of the bridge is to encourage continued use of the STATO Trail along Sharpe Street and Elm Street, rather than having cyclists continue along Armstrong Street North where no cycling facilities currently exist. Isolating the cycling facility along one side of the bridge will allow for safer and more comfortable turns from Armstrong Street North to Sharpe Street on the south side and Elm Street on the north side. This facility proposal will effectively bridge the gap in the existing trail system along the 4-lane section of Armstrong Street crossing the Wabi River. However, it should be noted that this bi-directional intervention is only meant as a temporary measure until cycling facilities are installed on Armstrong Street North, south of the bridge. At that point, uni-directional cycle tracks should be installed on either side of the street to increase continuity throughout the cycling network.

Based on a review of the traffic volumes and roadway capacity on Armstrong Street, particularly the northbound traffic patterns leaving downtown New Liskeard, significant delays or queuing due to increased traffic are not expected. It is anticipated that the reduced excess space and capacity on the bridge will have a traffic calming effect, improving safety on this key corridor for all road users. An overview of complete streets transformations implemented by municipalities in Ontario and North America found that, on roads carrying under 20,000 vehicles a day, operational impacts for vehicular traffic were minimal, frequently resulting in improved operations along the corridors. User safety – for all road users – improved significantly. Complete streets conditions result in a lower level of serious collisions among people driving, in addition to enhanced safety and comfort for people cycling and people walking. By reallocating space on existing roadways to enhance mobility choice and improve safety, complete streets transformations are a proven countermeasure to reduce collisions and injuries, improve cycling safety and promoting road infrastructure being used in an efficient, cost-effective manner.

Figure 37 below demonstrates an example of the proposed Complete Streets approach to the Wabi River Bridge with the cycling facility in place.

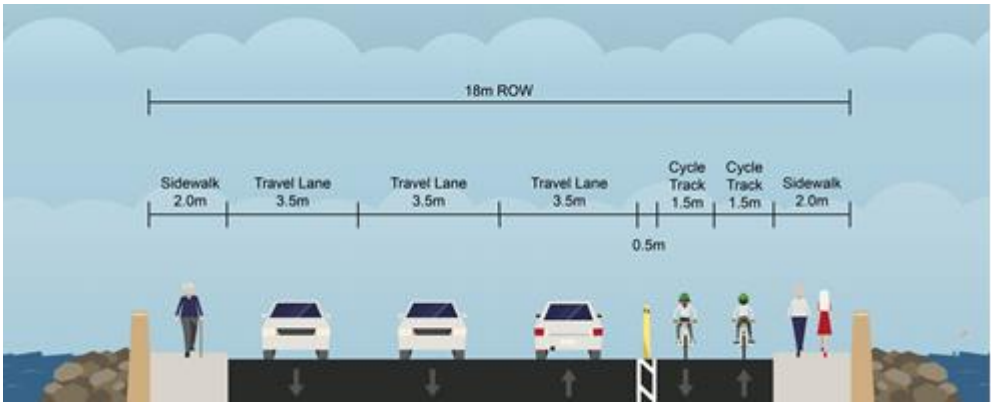


Figure 37 | Proposed road diet with bi-directional cycle tracks on the eastern portion of the bridge

Cycle tracks with a minimum width of 1.5 metres are recommended as per Book 18 of the Ontario Traffic Manual (OTM); a combined 3.0 metre lane with a 0.5 metre buffer is the desired width in Ontario for a two-way physically separated bicycle lane. A combined lane width of 2.7 metres with a 0.3 metre buffer is the suggested minimum where the desired width cannot be met.

Bollards mounted on pre-cast curbs or planters are recommended to provide physical separation between cyclists and vehicle traffic. Given that this bidirectional intervention is meant as a temporary measure until cycling facilities be implemented on Armstrong Street south of the bridge, planters or bollards are an appropriate intervention that are easy to install and uninstall that may also help increase the safety and comfort of cyclists. While flex bollards mounted on pre-cast curbs do not offer the highest level of protection from vehicles, they are easy to implement and relatively cost effective. Planters may offer more protection and beautify the roadway, however they may cost more than bollards and may not fit the proposed buffer width on the bridge. Both options are recommended on streets with speeds under 60 km/h.

INTERSECTION OF SHARPE STREET AND ARMSTRONG STREET NORTH

Sharpe Street currently does not have bi-directional or protected cycling infrastructure. While the STATO Trail is signed in this area, field investigations indicate that the trail is often obstructed by parked vehicles, and is not a consistent, comfortable facility for cycling. The preferred solution for this corridor would be the addition of a fully separated multi-use trail along the river (north of the existing parking lot and roadway) to connect to the remaining STATO Trail facilities to the south and east of the bridge. In the interim, however, directional sharrows should be installed on the north and south side of the street to direct eastbound and westbound traffic. In this interim configuration, a direct right turn for westbound riders to turn North on Armstrong and a two-stage turn box is recommended for cyclists turning onto Sharpe Street from Armstrong or wishing to continue south on Armstrong to travel towards Church Street. A two stage turn allows cyclists to continue straight through the intersection and turn on the far side in order to align with the sharrow on Sharpe, and provides them with a space to queue while waiting to cross Armstrong if they wish to continue southbound.

An in-boulevard two-stage queue box is recommended on the far side of the intersection. This provides space for cyclists to queue if pedestrians are crossing at the same time. The desired dimensions for the queue box is 3m in width and 3m in length to provide comfortable queuing space for two to three cyclists. Green paint is recommended to highlight the queue box to surround vehicle traffic. Bollards on the south side of the queue box are recommended so as to provide additional protection from vehicle traffic and to increase visibility.

A pedestrian crossing is also recommended on Armstrong Street for those crossing Sharpe Street. For cyclists turning right from Sharpe Street onto the bridge, yield line markings, also known as "shark's teeth," should be placed in front of the proposed pedestrian crossing. These markings help to visually reinforce a requirement to yield. When implemented on a cycling facility to indicate a requirement for cyclists to yield to pedestrians, the markings typically have a base of 300mm and a height of 450mm.

Figure 38 below demonstrates the interventions recommended for this intersection.

Figure 38 | Proposed left turn intervention at the intersection south of the bridge. (Yellow dots represent bollards, preferably mounted on pre-cast concrete curbs)

INTERSECTION OF ELM STREET AND ARMSTRONG STREET NORTH

At the intersection of Elm Street and Armstrong Street North, just north of the Wabi River crossing, a two-stage queue box is recommended to help guide cyclists turning left from Elm onto the proposed cycle track on the bridge. OTM Book 18 (2021) recommends a direct left turn at intersections of low-volume and low-speed streets where cyclists are operating in a shared environment. Given the location of this intersection, and the volume of motor vehicle traffic on Elm Street, it is anticipated that a direct left turn onto the cycle track will be possible in many circumstances. But for riders who are less confident, when they arrive at Elm and Armstrong from the east, they may desire to wait for through traffic on Elm to come to a stop before proceeding. A queue box provides the option for cyclists to make a two-stage turn, proceeding on the green signal phase on Armstrong Street to connect into the cycle track heading south.

Queue boxes provide a designated queuing space between the pedestrian crosswalk and the vehicle traffic stop bar at a signalized intersection. This enables cyclists to wait outside the path of through vehicles on the green phase on Elm, providing them with a signalized movement southbound along

Armstrong. This designated area significantly increases the visibility of people riding bikes and reduces their exposure to through traffic while trying to make a left turn onto Armstrong. More confident cyclists can still make a direct left turn onto the cycle track, but this configuration provides additional options for less confident riders. It is recommended that the queue box be protected with bollards to prevent vehicle encroachment, and that a right turn on red restriction with a bicycle exemption be implemented at this intersection so as to limit any conflicting turns between vehicles and cyclists.

Queue boxes should be typically 2 to 3m in depth. Green paint is recommended to minimize encroachment from motor vehicles. **Figure 39** demonstrates the proposed intervention for the Elm Street intersection.

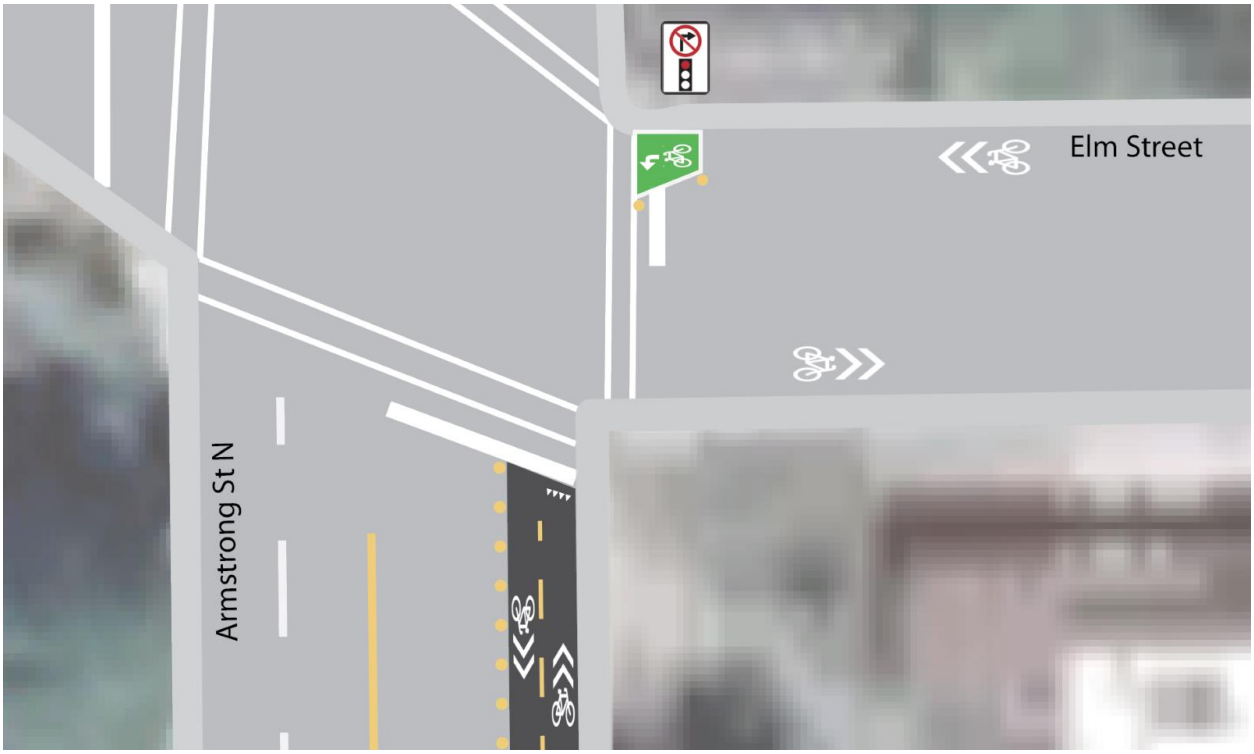


Figure 39 | Proposed left turn intervention at the intersection north of the bridge

The crossing of the Wabi River has historically been one of the most challenging areas for active travel in Temiskaming Shores. With limited options to traverse this significant barrier, it is important to provide people walking and cycling with a safe option to better connect the City of Temiskaming Shores' current and future active transportation infrastructure.

2.4 RECOMMENDATIONS

Developing a network of active transportation facilities is vital to the development of a stronger culture of active transportation for Temiskaming Shores. To create a network of comfortable, accessible on and off-road facilities for walking, cycling and wheeling, the City should adopt the following recommendations.

1. Incorporate the proposed active transportation network illustrated in Maps 3a, 3b, 3c, 4a and 4b as a Schedule in the City's Official Plan when next updated.
2. Reference should be made to OTM Book 18: Cycling Facilities (2021) to inform and guide the design and implementation of cycling and in-boulevard facilities.
3. Reference should be made to OTM Book 15: Pedestrian Crossings to inform and guide the design and implementation of pedestrian crossing treatments.
4. The City should continue to identify opportunities to implement active transportation routes / facilities in conjunction with capital infrastructure projects to achieve economies of scale and cost savings.
5. As part of the annual capital budget review process, City staff should use the ATP to inform prioritization and implementation of active transportation infrastructure.
6. As part of scheduled roadway projects and Capital budget forecasting, the City should allocate funding to construct the Short-Term Active Transportation Network (See Maps 5b and 5c) by the end of the 2027 construction season.
7. When capital reconstruction projects are scheduled for the downtown areas of Haileybury and New Liskeard, priority should be given to expanding spaces for walking, cycling and amenities by narrowing vehicle lanes and parking facilities.
8. The City should implement a 2-way protected cycle track over the Wabi River Bridge as a pilot project to close a key gap in the existing STATO Trail
9. The City should continue to explore external funding sources and partnerships to help fund implementation of the ATP.
10. The City should adopt the Trails design and amenities standards presented in this plan to improve access to the trails at Devil's Rock and Pete's Dam Parks

Chapter 3: Project Engagement

City of Temiskaming Shores Active Transportation Plan
December 2021

3 PROJECT ENGAGEMENT

3.1 ROUND 1 ENGAGEMENT

3.1.1 BACKGROUND

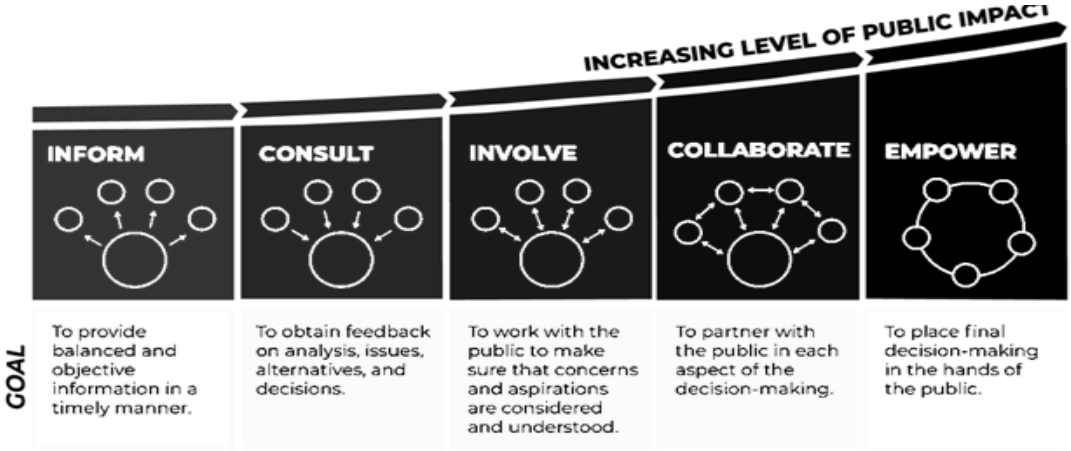
The City of Temiskaming Shores is developing an Active Transportation Plan to expand access to walking, cycling and wheeling for residents of all ages and abilities. This plan builds on the City's existing network of physical infrastructure, which is centred on the STATO Trail as well as its network of social infrastructure to support active transportation, supported by partners such as the Timiskaming Health Unit, Downtown BIA, Bicycle Friendly Communities Committee and more. Engaging with the existing community in Temiskaming Shores is a vital part of the development of the ATP, and the results of the first round of engagement are the focus of this Discussion Paper.

3.1.2 ENGAGEMENT OBJECTIVES

This plan has been developed in accordance with the International Association of Public Participation (IAP2) process and practices, as illustrated in **Figure 40** below. The IAP2 Process outlines the preparation, management, and evolution of engagement tactics based on a spectrum of involvement tailored to the wants and needs of the anticipated or desired audiences. There are five levels of commitment, which are known as the IAP2 Spectrum of Public Participation.

The amount of information sharing, gathering and integration increases as you "move up" the spectrum. The intent is to recognize that not all stakeholders will have the same level of involvement in the project or need the same amount of information to inform their involvement. The IAP2 approach emphasizes the importance of a consultation plan which is tailored to the understanding, commitment, and contribution of each of the unique groups. By identifying the stakeholders early in the study process the project team will anticipate, identify, plan for, and communicate the expectations based on the intended audience.

Figure 40 | IAP2 Spectrum of Audience Involvement



For the Temiskaming Shores ATP, the project team identified four distinct audiences, and established their projected level of commitment to the project. That audience analysis is presented below in **Table 10**.

Table 10 | Overview and Analysis of Stakeholder Groups

STAKEHOLDER	DESCRIPTION & MEMBERSHIP	LEVEL OF INTEREST	OBJECTIVES	IAP2 LEVEL OF INVOLVEMENT
Core Project Team	City staff members who will be coordinating the implementation, monitoring and maintenance of the ATP. Their strong knowledge of the City, existing conditions and municipal processes will be vital to the success of the project.	High	• To provide the group with key background information on the project and updates on project status. • To gather input to inform key project milestones and on project deliverables. • To generate buy-in and confirmation from the committee on project deliverables and public facing information.	Inform, Consult, Involve & Collaborate
Stakeholders / Stakeholder Working Group	Representatives from groups who have interest in active transportation or who would have a role in supporting the City in future promotion and outreach initiatives. They have access to significant historical knowledge and local resources within the community and typically have a higher level of interest from a community perspective.	Medium to High	• To provide background information on the project and to demonstrate how input provided has been integrated into project outcomes. • To identify “Quick Wins” that can be submitted for funding under the Canada Healthy Communities Initiative funding stream. • To review and help confirm the overall vision and objectives for the ATP. • To identify future opportunities for collaboration as well as capacity to support education and outreach tactics for long-term culture change.	Inform, Consult, Involve & Collaborate

Members of the Public	Residents include the people who live, work and play in Temiskaming Shores.	Low to High	• To provide background information on the project and to demonstrate how input provided has been integrated into project outcomes. • To gather input on interests, needs and preferences within the community including opportunities, challenges and existing / potential routes.	Inform & Consult
City Council	Councillors represent the opinions and interests of their constituents and typically have a greater appreciation for and understanding of the key issues of the City.	Medium to High	• To provide the group with key background information on the project and updates on project status. • To ensure that the project is in-line with overall objectives and strategic opinions of decision makers. • To generate buy-in and confirmation on project deliverables and public facing information.	Inform, Consult, & Empower

By identifying audiences early in the process and ensuring that engagement activities are held regularly and meet the needs of each audience, the community engagement approach is helping to ensure that the actions identified in the final ATP are appropriate, ambitious, and community-supported, leading to a plan that is more likely to be implemented in a meaningful way as the City continues to develop its walking, cycling and wheeling networks.

3.1.3 ENGAGEMENT APPROACH

Engagement is a major component of the City of Temiskaming Shores Active Transportation Plan (ATP) project and has been divided into two rounds. Throughout the first half of 2021, the project team worked closely with the City of Temiskaming Shores to facilitate several engagement activities with key stakeholders and members of the public for the first round of engagement. These activities were completed to gain input on existing conditions; strengths and gaps in the current active transportation network and the City's efforts to support active transportation; and potential improvements and priorities for active transportation going forward. The following sections summarize the Round 1 engagement activities, the input that was received, common themes that emerged, and how the Project Team will use this information to guide the development of the ATP.

STAKEHOLDER WORKING GROUP WORKSHOP #1

The Project Team hosted a Stakeholder Workshop on May 27, 2021 with stakeholders from the Stakeholder Working Group, including representatives from various committees, organizations, agencies, and Town departments. The Workshop was held to help develop a "Quick Wins Strategy" which identified projects that could be implemented immediately, potentially through an application to the newly launched Canada Healthy Communities Initiative. The Workshop also provided an opportunity for stakeholders to provide input about strengths, weaknesses, opportunities, and threats to future successes, building upon the Project Team's initial assessment of Temiskaming Shores' existing active transportation system.

STAKEHOLDER INTERVIEWS

The Consultant Project Team hosted interviews with key stakeholders in April and May 2021 to gain a better understanding of existing conditions and opportunities for improving active transportation in Temiskaming Shores. Similar to the Stakeholder Workshop, the stakeholders were asked questions that provided input about strengths, weaknesses, opportunities, and threats to future successes. Key stakeholders included representatives from local committees and organizations that will be impacted by the ATP.

PUBLIC SURVEY

A public survey was posted online to provide members of the public an opportunity to provide feedback regarding active transportation in Temiskaming Shores. The survey focused on existing travel patterns and travel choices, potential enhancements to the City's existing active transportation network, and priority gaps and challenges regarding current conditions.

COUNCIL SURVEY

In addition to the public survey, the Project Team developed a Council survey. This survey was used to help identify potential challenges and inform and involve Councillors in the process.

3.2 WHAT WAS SAID

The following sections summarize the input that was received during the first Round of engagement.

3.2.1 STAKEHOLDER WORKING GROUP WORKSHOP #1

The Project Team held a Workshop with stakeholders from the Stakeholder Working Group including City staff, City Councillors, local committee members, Health Unit staff, and other key representatives. During the Workshop, the Project Team used an online whiteboard tool, Miro, to facilitate various activities and allow stakeholders to provide input and contribute to discussions surrounding the future of active transportation in Temiskaming Shores. The activities included:

Candidate Active Transportation Routes and Potential Improvements:
The Project Team presented maps of the candidate routes and proposed improvements to the active transportation system. The stakeholders were asked to identify any additional:

- Candidate routes.
- Locations/crossings for enhancement; and
- Routes/projects that should be prioritized in the short term.

During the Candidate network Review, feedback received largely confirmed much of what had been identified for implementation by the project team leading up to the workshop. Key items identified for improvement included:

- Intersection improvements within the downtown areas of Haileybury and New Liskeard should be implemented to create safer access for people walking and cycling
- Safety enhancements on the STATO Trail should be considered, particularly on Lakeshore Road, by reducing vehicle speeds and adding additional physical separation where possible
- Connections to schools and areas with a high density of destinations should be enhanced to connect the STATO Trail to the places people want to go in the City
- Concerns with the proposed routing for the trail extension to Pete's Dam – including property ownership and difficult terrain
- A desire to see enhanced connectivity over the Wabi River, wither through improvements to the existing bridge or through the construction of a new pedestrian and cycling bridge at the foot of Katherine Street
- Enhancing connections on the STATO Trail into North Cobalt to connect those residents to Haileybury and beyond
- The importance of effective wayfinding to highlight the connections between the STATO Trail and the proposed routes to connect with community destinations

An example of the types of feedback provided during the Workshop can be seen in **Figure 41** below.

Figure 41 | A Section of the Candidate Routes and Potential Improvements Map with Post-It Notes from Stakeholders

Quick Wins Project Builder:

The Project Team identified a potential opportunity for the City to receive funding from the Government of Canada through the Healthy Communities Initiative fund to improve public spaces as a response to the COVID-19 pandemic. The Project Team presented the Healthy Community Initiatives goals, shown in **Figure 42,** and asked stakeholders to identify potential "quick wins" projects that would meet these goals and qualify for funding.

Figure 42 | Healthy Community Initiatives Goals

Create safe and vibrant places

Improve mobility options

Provide innovative design solutions

The stakeholders listed a variety of potential quick wins projects, such as:

- Implementing wayfinding to support new riders and walkers;
- Increasing connections to schools and other public facilities (i.e., grocery stores, hospital, etc.);
- Adding traffic calming tools in designated residential and downtown areas to improve safety for people crossing the road;
- Implementing bicycle parking in the downtown cores;
- Introducing a bike hub with bike rentals and repairs;
- Improving cycling and pedestrian facilities along the Wabi Bridge; and
- Enhancing street beatification (i.e., murals, etc.).

Action Planning Worksheet:
After reviewing the input regarding potential quick wins projects, the stakeholders were asked to identify one project that the City could apply for funding to implement. The stakeholders collectivity identified the following project:

- Downtown beatification and expansion of public space in downtown New Liskeard and Haileybury, including:
    - Enhancing pop-up patios/public seating areas; and
    - Adding bike racks, benches, crosswalk, painted murals, etc.

The stakeholders determined that this project would help build a sense of community and draw tourists to Temiskaming Shores. These improvements would also provide all community members with a place to walk, bike, and stay in touch in the downtown areas, while reducing and calming vehicle traffic. The stakeholders identified some key elements that should be included as part of the project, such as:

- Bike racks and more bicycle parking in lieu of car parking in key destinations;
- Stop signs and safe crossings in Haileybury;
- Clear signage and pavement markings;
- Greenery and trees; and
- Mid-block crossings and bump-outs at former Giant Tiger and between existing crossings in New Liskeard and Haileybury (this was identified as a “nice-to-have” element rather than a “must-have” element).

3.2.2 STAKEHOLDER INTERVIEWS

The Project Team held interviews with 8 key stakeholders including representatives from the City, local committees (i.e., Bicycle Friendly Communities Committee, Age Friendly Committee, and Active Travel Committee), the Health Unit, and the Business Improvement Area. The stakeholders were asked to answer the following questions to provide input about strengths, weaknesses, threats, and opportunities regarding active transportation in Temiskaming Shores:

1. What is your vision for active transportation in the City?
2. What are the top 3 network priorities for an active transportation network
3. Who is the network serving and who is it not?
4. What are some successes in the City?
5. What are some of the challenges?
6. What are some programs and who are the partners?
7. What are some programs you think the City should explore?
8. Who should lead program development and who should support?
9. Of the programs identified, are there any priorities?
10. Is there anything else you would like to add?

Some notable comments that emerged during the stakeholder interviews are listed below:

- “The [STATO] Trail is well designed and well used. Seniors, kids, parents families, racers, - they're all on the STATO Trail”;
- “I'd like to see us expand upon what we've done already – we already have this great linear route in the STATO Trail, so we should complete those missing links and then lay out a plan to connect the trail to other areas. [We should focus on] connecting and finishing the trail and then expanding”;
- “More signage and wayfinding would be great. More green paint on the roads too to help delineate the cycling facilities. [Bicycle] parking downtown – a couple in New Liskeard and one uptown by the stores, and maybe one in Haileybury”;
- “I think adults more than kids are being served well [by our existing infrastructure] in terms of comfort, especially downtown. Commuters are well served generally. Leisure riders who aren't afraid of riding outside of the trail – experienced riders are pretty well served. I've heard from other people who would ride more, but they don't feel comfortable riding in traffic, so they are being left behind. Students are really being left behind too because we only have one school that we can get to from the trail. The majority of our schools have nothing to connect them, so students are on their own”;
- “[We should have more] shaded seating areas downtown. I'd like to see a lot more green. We live in a beautiful area surrounded by trees and our downtown doesn't reflect that at all. So if we could see more planters, more flowers, more of those natural elements – it really provides so much benefit. We have nice buildings downtown, but we need more natural streetscaping”;
- “If you want to encourage people to cycle, you need to have a place for them to store their bikes! We should also have employee change rooms and showers so that people can change”; and
- “We have a good transit system but the connection between transit and cycling is lacking. We need to build that connection better. Not all the busses that we have available are equipped with racks”.

Table 11 provides an overview of some of the common themes that emerged during the Stakeholder Interviews.

Table 11 | Stakeholder Interview SWOT Analysis Summary

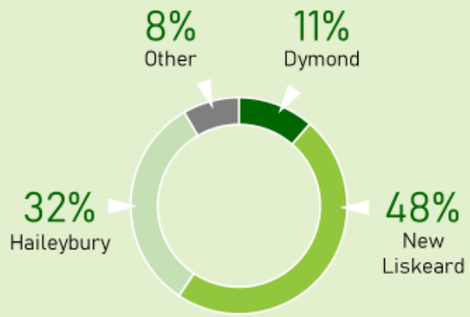
	Common Themes
Strengths	• Existing STATO Trail • Strong history of local fundraising and funding applications • Encouragement and education efforts • Radio, Newspaper, Social Media, Bike Festival, etc. • Supportive staff and local stakeholders • Local parks provide good access to nature and trails • Strong transit ridership • Winter maintenance of sidewalks • Existing work done by the Committees
Weaknesses	• Speeds on connecting corridors • Rorke, Lakeshore, Whitewood, Armstrong • Few All Ages and Abilities (AAA) routes for walking and cycling • Lack of seating, shade and bike parking in downtown areas • Crossing Lakeshore in Haileybury • Wabi Bridge • School connectivity to existing trails • Lack of safe access to downtowns
Opportunities	• Bike parking and beautification in downtown areas • Multi-modal integration: more walk / bike / transit trips • Expand bike exchange into bike hub / bike rental • Broaden BFCC mandate to focus on active transportation • Traffic calming and speed limit reductions • Introduce wayfinding and signage to encourage new ridership • Trail apps and updated info online
Threats	• Road widths may limit options, particularly on rural and older roads • Low revenue and financial capacity means improvements are often reliant on grants and other funding streams • Many programs rely on volunteers – staff support may need to expand

3.2.3 PUBLIC SURVEY

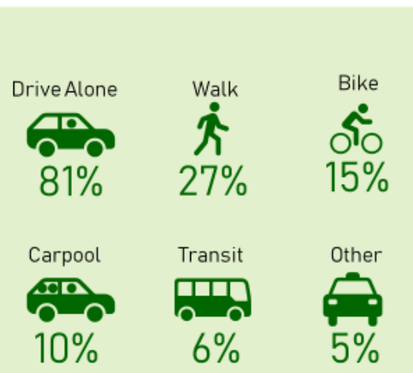
The online survey was available on the project website from May to June 2021 and received 283 responses in total. The following section uses infographics to summarize the main input that was received through the survey.

Who participated in the survey?

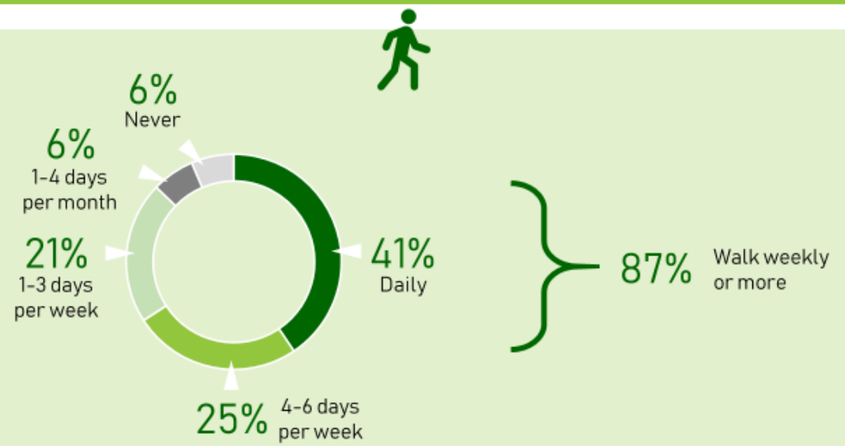
- 91% Were residents of Temiskaming Shores
- 13% Regularly travel through Temiskaming Shores
- 12% Work or own a business in Temiskaming Shores
- 7% Were students, frequent visitors, or other



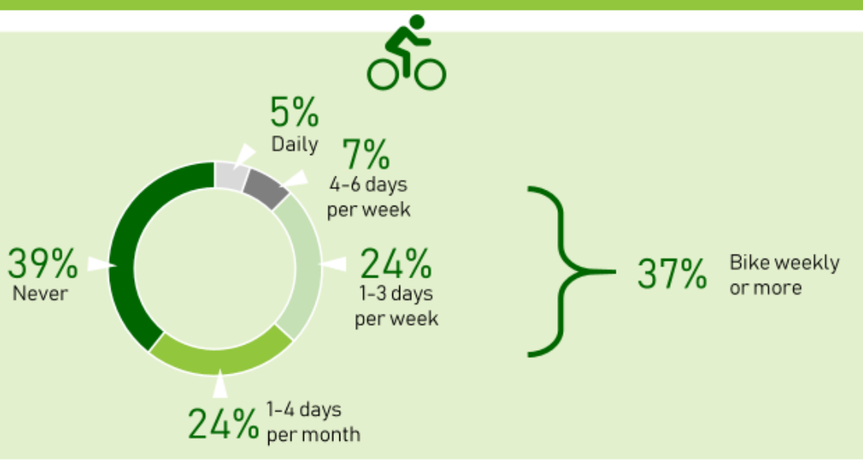
How are people commuting in Temiskaming Shores?



How often are people walking?



How often are people biking?



Why are people walking and biking?

What are the main barriers?

Top 3 Barriers:

- Lack of sidewalks or trails
- Condition of sidewalks or trails
- Speed and noise of motor traffic

Additional Barriers:

- Weather
- Poor lighting
- Time constraints

Top 3 Barriers:

- Lack of dedicated on-street cycling facilities
- Speed and noise of motor traffic
- Intersection safety

Additional Barriers:

- Gaps in the network
- Trails and routes don't go where people need to go
- Other

How far are people willing to travel?

	Walking	Biking
Work or School	9 minutes	10 minutes
Shops & Services	8 minutes	11 minutes
Local parks or trails	11 minutes	14 minutes
Entertainment or leisure	10 minutes	12 minutes
Transit	5 minutes	6 minutes

What locations would people like to see improved?

- Downtown New Liskeard
- Downtown Haileybury
- Wabi Bridge
- Lakeshore Road
- STATO Trail
- Shepherdson Road
- Algonquin Avenue
- North Cobalt
- Bruce Street
- Pete's Dam Trail
- Devil's Rock Trail

What actions would people target for investment?

Top 3 Priorities:

Build more paved trails or multi-use paths

Build more on-street cycling facilities (bike lanes, etc.)

Improve maintenance on existing sidewalks, multi-use paths, cycling facilities, etc.

Additional Priorities:

- Intersection upgrades, including improved crossings, signals, and lighting
- Build more sidewalks
- Provide more amenities along active transportation routes (benches, water, fountains, bike racks, etc.)
- Expand off-street cycling network (more mountain biking trails, etc.)

How do people describe active transportation in Temiskaming Shores now?

- ✓ Quite good for the size of the Town, but room for improvement
- ✓ STATO Trail is amazing
- ✓ Too much focus on cycling over other modes (roller blading, skate boarding, scootering, walking, etc.)
- ✓ Need to make areas more walkable (i.e., improve, maintain, and add more sidewalks)
- ✓ Need to focus more on safety, especially on busy streets
- ✓ More education is needed on how to share the road with cyclists
- ✓ Active transportation network is very limited to New Liskeard – need to provide connections to other communities

What should be the priority for the Temiskaming Shores Active Transportation Plan?

- ✓ Safety (i.e., crossing the street, on-street cycling facilities, etc.)
- ✓ Maintenance (i.e., improve and maintain existing sidewalks, trails, and roads)
- ✓ Accessibility
- ✓ Connectivity
- ✓ Community education and awareness
- ✓ Traffic calming

Some notable comments that emerged through the public survey are listed below:

- "I am impressed with what we have for such a small community, especially the STATO Trail";
- "Active Transportation in Temiskaming is quite good along quiet roads/parks, but requires serious attention/changes along busy routes";
- There aren't enough dedicated paths connecting all ends of the community to promote biking. […] More sidewalks (or paths) need to be added to increase walking as well";
- "Active transportation in the City of Temiskaming Shores has come a long way but we tend to forget that more people walk than cycle - pay as much attention to the making it walkable as you do cyclable. Maybe we need a Temiskaming Shores Walking Committee to get our sidewalks fixed";
- "Upgrade current infrastructure, start to build multi use trails, and [increase] maintenance of the existing ones";
- "Slow the traffic down";
- "[The] priority should be to make it a safe and convenient way to get around, from all areas of the city";
- "Speed limit reductions and traffic calming in multiple areas - downtown, around schools/residential areas, Lakeshore, Rorke";
- "Ensure that walking/bicycling paths are safe from vehicular traffic - in terms of speed, proximity, and exhaust fumes";
- "More signage advising walkers and cyclists where to walk or cycle" and
- "Improve existing trails for nature fans, offer more safe biking lanes for cyclists, and enforce/educate the driving public as to cyclists' rights to the roads".

3.2.4 COUNCIL SURVEY

To gain a stronger understanding of what the priorities for the Municipal Council was for this project, a City Council-specific survey was developed and distributed to all members of Temiskaming Shores' City Council. Responses were anonymous, with responses being received from five of the seven current members of Council. The questions posed, and the responses received, are detailed below.

When you think of the current state of active transportation (walking, cycling and wheeling) within the City of Temiskaming Shores, what are some of the first words that come to mind?

- Good but a few improvements could make it great.
- Much better than it was 10 years ago. Many areas are accessible by walking or cycling
- Safety
- Improving, more education to the public that don't use the trail or a bicycle etc.
- A work in progress. Small but important steps being taken. Old infrastructure hinders much of the progress.

When you think of the future of active transportation in the City of Temiskaming Shores, what do you think is important to consider and reflect?

- Pedestrian safety, more bike/active travel routes to main areas of the community.
- Make sure that people can enjoy our great outdoors.
- Connectivity
- Keep an open mind and don't try to make too many changes at once.
- We have a population that, regardless of age, want to become or remain active. Important consideration for any future planning.

In a few sentences, what are the primary outcomes you would like to see emerge from the Active Transportation Plan?

- I would like to get an outline of what routes would be best and find out where we are lacking as far as active travel.
- Provide a safe community for people of all ages to move about our city.
- I would like y to o see a safe trail connecting the various parts of the City with a resulting mutual sharing of safety and respect between trail and highway users.
- There MUST be more use of the STATO Trail before we spend more dollars or obtain grants as the majority of taxpayers have to buy into it.
- Become recognized as a destination for an active population.
- What concerns do you have about the development of the Active Transportation Plan?
- No real concerns I just want people to be able to travel safely throughout the city.
- People must still abide and learn the rules of the road. Signally, sharing the road.
- Mutual safety of all
- Any attempt to change the speed limits between New and Haileybury again must include public meetings and even consider adding a question on a ballot to all voters on the upcoming election in June 2022.
- Our older infrastructure means we must take small cautious steps rather than large bold steps. Current infrastructure is not built for active transportation.

We have been doing extensive community stakeholder outreach but are always looking for additional contacts to expand the level of access for engagement related to this plan. Are there any community groups or key stakeholders that we should contact as we develop this plan?

- Bicycle friendly community, age friendly, get active group.
- Have OPP been involved
- People that travel on the roads for work purposes, bus drivers, taxi operators and general public.
- Cyclists, seniors, people that walk. Sightseeing groups, tourism reliant business.
- Do you have anything else you would like to share with us?

- Changes need to be slowly incorporated into future developments in housing and transportation
- Adding more stop signs throughout the City must be done carefully with public input as well as adding cross walks they must be put in the most dangerous parts of the city if it's going to work.

3.3 WHAT WAS HEARD

The Round 1 Public Engagement activities provided the Project Team with an excellent sense of existing conditions and potential opportunities for improving active transportation in Temiskaming Shores. Several key ideas and common themes emerged from these activities which be used to guide the development of the ATP and set priorities for the City. Some of the key ideas and themes that emerged are summarized below.

3.3.1 KEY IDEAS

- Temiskaming Shores is a fairly multi-modal City. Although driving is still the main mode of transportation, many community members stated that they walk and/or bike weekly or more, indicating that the Community has already started to build a strong culture of active transportation;
- The main barriers to walking and cycling that were identified through the public survey were all infrastructure-related, as opposed to being related to environmental factors (distances, topography, weather). This can be seen as a significant opportunity for the City to improve the condition of active transportation infrastructure to enhance safety, comfort, and accessibility;
- Community members emphasized a clear desire for the City to prioritize walkability by improving and maintaining sidewalk infrastructure and improving safety at key intersections; and
- Based on the amount of time people are willing to spend travelling, most destinations in Temiskaming Shores could be easily reached by walking or cycling if the appropriate infrastructure were in place.

3.3.2 COMMON THEMES

- The existing STATO Trail is excellent and serves a lot of people quite well. With that said, there are still many opportunities to improve the Trail by addressing gaps and providing connections to other trails and key destinations;
- An overall lack of infrastructure that feels safe and inviting is limiting the number of active transportation users in Temiskaming Shores. There is a need for better crossings and on-street cycling facilities to enhance safety and comfort. Traffic calming tools should be considered for busy streets to help reduce traffic speeds and make roadways more comfortable for pedestrians and cyclists;
- There is a need to improve connectivity to key destinations and between communities in Temiskaming Shores;
- There is a lack of all ages and abilities cycling and walking routes. The City needs to focus on making active transportation more accessible to a wider range of people; and

- Public spaces could be improved by increasing bicycle parking, seating, wayfinding signage and shaded areas, especially in the downtown cores. These changes would also help to encourage more people to use active transportation.

3.4 WHAT WE DID

An important aspect of any project is the collection of feedback from key stakeholders to inform both the broad directions of the project and the specific elements of its implementation that will improve user experience. In the case of the Temiskaming Shores Active Transportation Plan, the collection of stakeholder and public input was used to inform several key aspects of the final plan. The feedback received so far has helped to:

Guide the development of the proposed Active Transportation Network for Temiskaming Shores, including the addition of proposed sidewalk extensions and enhancements:

- Sidewalk expansions within the community of Dymond emerged as a priority, and were included on the final map of proposed sidewalk locations;
- East-west routes through New Liskeard were refined to include Whitewood based on a desire to enhance streetscaping in the Downtown and reconsider how overall parking utilization in the downtown area is evaluated; and
- Routes connecting Haileybury to North Cobalt were added to enhance connections to the City's existing transit services.

Develop a network of cycling facilities that would result in a complete, connected network throughout the communities of Temiskaming Shores, with priority projects identified to achieve short-term connectivity:

- Capital forecasts helped to determine which projects should be completed in 2021 and 2022 based on the City's upcoming works schedule;
- Key gaps were identified and prioritized, including areas along Lakeshore Road, Rorke Avenue and Albert Street; and
- Additional design work was completed for the Wabi River Bridge to provide an interim connection to link the STATO Trail.

Refine proposed trail alignments for additional STATO Trail extensions, including alterations to the route heading north from New Liskeard to Dymond and the route connecting New Liskeard to Pete's Dam:

- The proposed route for the STATO Trail from New Liskeard to Dymond east of the existing alignment was removed, as the cost for this project were deemed to outweigh the benefits; and
- The proposed route along the Wabi River to connect to Pete's Dam was removed due to challenging terrain and land ownership challenges.

Develop and submit a memo outlining the potential improvements that could be achieved through a submission to the Healthy Communities Initiative:

- Through collaboration with stakeholders, a project to enhance the livability of the City's Downtown areas through expansion of public spaces was submitted to the HCI.

Identify key locations where crossing improvements are necessary to improve safety for people walking and cycling:

- Locations such as Main St and Ferguson in Haileybury, Crossings of Highway 65 and crossings on Hessle Avenue were added based on feedback from stakeholders and the public.

Based on the conversations with City Staff and key stakeholder and public input from the online survey, the ATP is being developed to meet the needs of the growing community of people in Temiskaming Shores who want to walk, bike and wheel more often. Public support for these measures will be key to ensuring that they move forward in a timely and effective manner, and that they are sustainable in the long term.

3.5 EVALUATION AND LESSONS LEARNED

Feedback for the consultations has generally been positive, including the use of tools like SurveyMonkey for the public survey and Miro for the Stakeholder Workshops. Miro provided most attendees with the opportunity to participate in an interactive setting without requiring in-person participation in compliance with COVID-19 public health measures.

Attendees of the Workshop were asked about how the workshop was delivered, and feedback was universally positive. In the future, The City may wish to allocate time for two separate workshop sessions – one during working hours to accommodate those who can include attendance as part of their daily responsibilities (eg. Agency partners and those who work on active transportation issues as part of their paid roles) as well as one in the evening to accommodate those who want to support the ATP from a volunteer standpoint.

The public outreach for this project has been very strong, with a significant number of responses gathered, and a general consensus that the survey met the needs of the community with regards to gathering input about priorities for the City's ATP. As the City continues to grow its community engagement practices, it may be prudent to consider an all-in-one engagement platform for future projects that can include ideation boards, mapping tools and budgeting tools to help assist in gathering feedback from the community.

3.6 CONCLUSIONS AND NEXT STEPS

Community Engagement for the Temiskaming Shores Active Transportation Plan is a vital component of the success of the Plan as it moves into the implementation phase. Based on the strong response rate and the support from both internal and external stakeholders for the types of projects and programs being recommended as part of this Plan, it is clear that the community has a strong interest in seeing this project succeed. As the project moves towards completion, Phase 2 Consultations will provide stakeholders and members of the public with the opportunity to comment on the priorities for the City's active transportation network, will further develop strategies to make education and encouragement efforts more widely accessible and will begin assigning roles and responsibilities to bring those projects to fruition.

Chapter 4: Education and Encouragement

Dymond
Haileybury
New Liskeard

City of • Ville de
Temiskaming Shores

City of Temiskaming Shores Active Transportation Plan
December 2021

4 EDUCATION AND ENCOURAGEMENT

4.1 OVERVIEW

The City of Temiskaming Shores' Active Transportation Plan is a visioning document intended to provide a blueprint for municipal decision making as it relates to infrastructure, policy and programs to support active transportation. This plan will allow City staff to strategically implement and manage the direction of active transportation in Temiskaming Shores over the next 10+ years, creating a stronger culture of activity within the City through incremental, strategic improvements.

The previous sections of this Plan have focused on the physical infrastructure related to active transportation. Developing a complete network of comfortable, convenient active transportation facilities is vital to improving conditions for people to walk or bike, but it must be paired with the parallel development of a system of social infrastructure to support active transportation as well if a City like Temiskaming Shores is to realize the full benefits of its investments in active transportation. The physical and social infrastructure that have been developed since the 1950s have focused all attention on automobile transportation. The results of this paradigm can be seen everywhere in North America – streets that are unwelcoming for people who walk or bike, communities designed at a scale that does not make walking or cycling possible to access daily needs and a set of social norms that sees any form of transportation other than a private automobile as "alternative transportation".

Shifting from an auto-centric paradigm to a multi-modal one is no simple task, but there are a variety of actions that can be taken in support of this cultural shift. While it will not be possible for all trips made by Temiskaming Shores residents to be made through active modes, the density of both population and destinations in the City's urban areas – Dymond, Haileybury and New Liskeard, make walking and cycling a viable mode of transportation for many routine trips in the community. With the existing STATO trail infrastructure connecting the communities of Temiskaming Shores, and with a regularly scheduled transit service reaching all areas of the community, Temiskaming Shores is well situated to establish non-automotive transportation as a viable alternative for many residents, provided the City and its partners can facilitate a shift in attitude and culture within the community.

To help guide this cultural shift, a suite of active transportation programs informed by best practices from around North America is being proposed to supplement the City's investments in physical infrastructure to support walking, cycling and wheeling. The recommendations contained in this chapter are based on the successes and lessons learned from comparable municipalities in Ontario and beyond. Recognizing that one site does not fit all, these programs target a wide range of audiences, including students, women, seniors, Indigenous People, tourists, Franco-Ontarians, and other groups with unique perspectives and needs. While the programs described in this Chapter provide an effective starting point for the City, additional; consideration should be given to expanding support for priority groups to create programs that address the barriers faced by some groups to participate in active transportation. Future considerations for programming could help to address barriers related to finances, systemic discrimination, language differences, cognitive ability and risk tolerance.

The programs presented here have been shaped by local expertise – they are designed to support existing initiatives, build on the City's successes and leverage the relationships that already exist within

the community to create more support for, and excitement about, active transportation. The recommendations are based on best practices but are filtered through the local context and the knowledge of key stakeholders within the City, producing a truly made-in-Temiskaming Shores option to boost the culture of active transportation.

4.2 EDUCATION AND ENCOURAGEMENT APPROACH

Developing a suite of programs that help to change attitudes and behaviours regarding active transportation can be a complicated process. There are a wide variety of programs that can be adopted and implemented to support a community's goal of becoming a better place to walk, bike or wheel but many of the most effective interventions fall into one of two categories: Education and Encouragement (**Figure 43**).

Education measures empower people with knowledge – these programs can help to break down misconceptions, provide residents with new skills or provide a new way of looking at a problem. Common goals of education programs relating to active transportation include teaching safe and effective bike handling skills, educating people driving about the rights and responsibilities of people walking and cycling or providing information about the potential time and cost savings that could be generated by switching to active travel. Specific examples can include bike rodeos in schools to teach safe bicycle handling skills or programs that emphasize the benefits of active travel.

Encouragement measures enhance the appeal of certain forms of behaviour, both at the individual level and more broadly within the community. This can include initiatives that raise the profile of active transportation by offering interested users an opportunity to try something new with a low (or no) barrier to entry. Specific examples include guided community walks or "Slow Rolls", pop-up demonstrations at local festivals where residents can try out an E-Bike free of charge or friendly competitions between schools or workplaces to see who can log the most kilometers of active travel in a month. Encouragement initiatives can also include incentives that make it easier to consider travel by active transportation, either through giveaways of important materials like bike lights, reflectors or water bottles, or through benefits like a rewards or discount program for customers who arrive on foot or by bike.

When supported by investments in physical infrastructure to enhance the safety and comfort of active travel, programs that help educate and encourage residents to use active travel more often have been proven to increase support for, and use of, active transportation. These programs are often orders of magnitude cheaper than investments in physical infrastructure, but they pay dividends in shifting the culture of a community and creating an environment where active transportation is more socially accepted and supported.

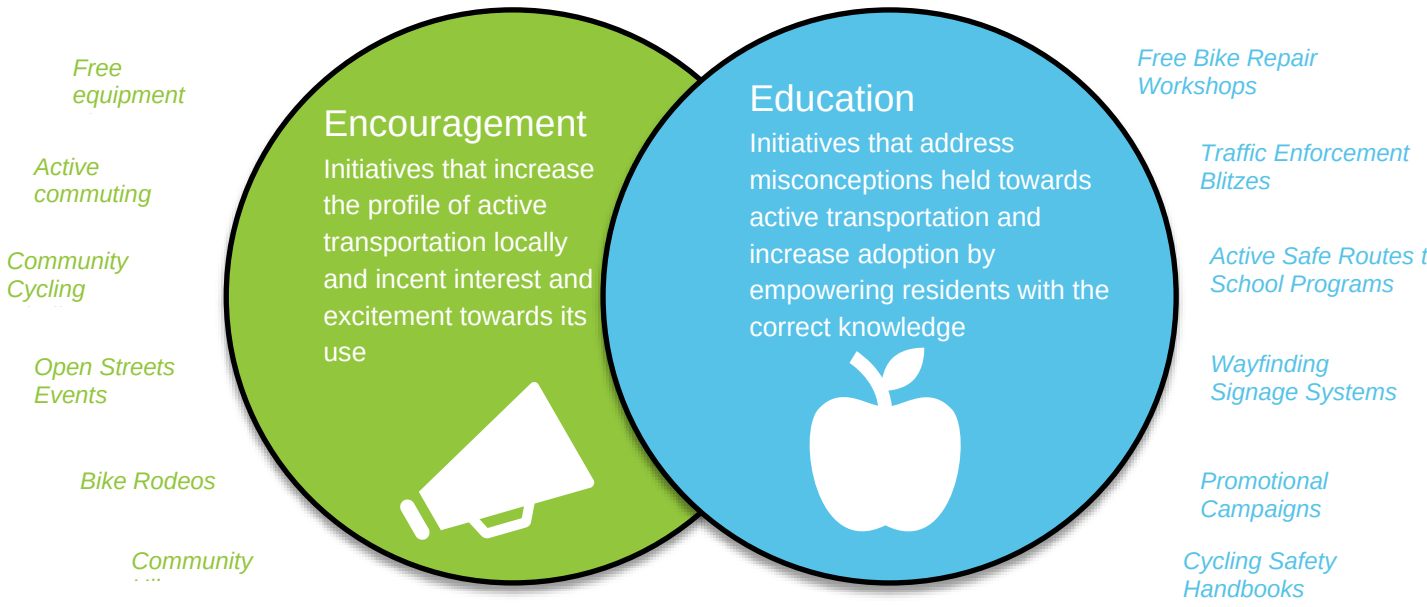


Figure 43 | Diagram listing suggested active transportation programming initiatives, categorized within the encouragement and education approaches

4.3 PLAN FOUNDATIONS

The development of a suite of programming recommendations relied on a thorough understanding of both best practices with regards to active transportation education and encouragement and the local context within the City of Temiskaming Shores. To develop a set of programming guidelines that meet the needs of the community, a best practices review of plans from comparable municipalities was combined with a policy review and extensive stakeholder consultation, helping to produce a suite of programs designed to support the social infrastructure of active transportation within Temiskaming Shores.

4.3.1 BEST PRACTICES REVIEW

To ensure all active transportation programming recommendations reflected leading technical guidance, an extensive background review was completed among a series of comparable municipalities. This exercise was useful in identifying the range of programming ideas that could be applied within Temiskaming Shores as well as relevant lessons and trends on which ones feature the greatest likelihood of success. Recognizing that the success of any active transportation program is dependent on the local context, results of this research served only to develop a list of recommended programming initiatives, which were reviewed and confirmed by local stakeholders. The results of the best practices review are shown below in **Figure 44**.

WW

Whitewater Region Active Transportation Plan

Relevant Programming Ideas

- Community based bike share program
- Wayfinding & Signage Plan
- Inventory and purchase of bike racks
- Bike and trail equipment giveaways

UXB

Uxbridge Active Trails Strategy

Relevant Programming Ideas

- Family Bike Days
- Data Collection
- Bike Valet Program
- Downtown Bike Corrals

PET

Penetanguishene Cycling Strategy

Relevant Programming Ideas

- Cycling Instructor Training Fund
- Town facilities enhanced as 'bike hubs'
- Open Streets events
- 1 metre safe passing law campaign

WH

Prince Edward County Cycling Master Plan

Relevant Programming Ideas

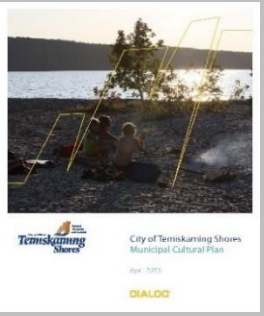
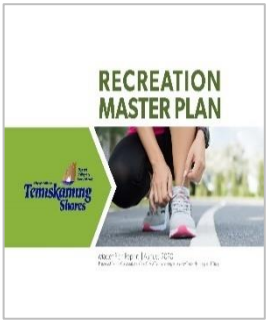
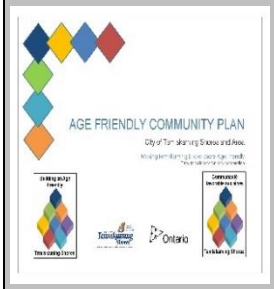
- Wayfinding Signage
- Staging and Rest Areas
- Annual bike summit
- Active School Travel Program
- Routine community bike rides.

Figure 44 | Map depicting the location of municipal case studies examined as part of the programming best practices review

4.3.2 POLICY SCAN

Key to understanding the local context as it relates to active transportation programming was an extensive review of relevant policies already adopted by the City. Documents most essential to this review included the City's Cultural Plan (2013), Recreational Master Plan (2020) and Age Friendly Community Plan (2016). Key insights and details from each document are presented below, where the relevant sections from each planning document are connected to the overall goal of developing a suite of programming recommendations that compliment the goals of the Active Transportation Plan. As the elements of the programming chapter are implemented, they will help to connect to the City's broader goals of creating a more active, engaged and connected community, aligning with the City's previously approved strategic priorities. A more detailed overview of these documents is provided within the Vision and Policy Discussion Paper in **Table 12**.

Table 12 | List of Policy Documents reviewed as part of the development of the ATP programming recommendations.

Municipal Plan	Document Description	Relevant Insights
	Outlines recommendations to strengthen the City's cultural sector by leveraging existing assets and identifying strategic investment opportunities that align with local community objectives and goals	• Recognizes the city's sports and recreational sector as key pillars of its cultural sector; • Acknowledges investments that support place-making and improved livability as equally beneficial to the City's cultural sector (attraction and retention of creative class workers and industries); and • Identifies existing annual events as tourism draws with potential for expansion
	Identifies demand for recreational services and facilities within the City and proposes a community led, strategic approach to addressing those needs within the next 10 years	• Recommends that the city leverage its strong scenic and natural landscapes to encourage greater social and recreational activity; • Suggests partnering with local sports groups and agencies for assistance in the delivery and administration of new and improved recreational programming; and • Support recreational programming within key local and regional travel destinations, such as Haileybury Beach, Downtown New Liskeard and Devil's Rock
	Seeks to make the community accessible to all age groups through the adoption of new standards, practices and programs that promote inclusivity among all residents.	• Recommends the adoption of a more coordinated communications protocol that reduces barriers to access local community services and programs; • Urges new building standards and investments into pedestrian friendly amenities such as more public seating and community maps within key shop areas and along local trails; and • Recommends improved access to recreation and social programming which better support and accommodate the needs of older adults.

4.3.3 PUBLIC CONSULTATION

While policy documents and best practices provide the basic outline for a suite of new programs to support active transportation, community engagement is necessary to ensure that the programs that are recommended are supported by, and resonate with, the community. In order to better understand the capacity of stakeholders and the attitudes of residents, several different community engagement activities were delivered as part of the development of this Plan. These included a series of workshops and interviews with key stakeholders, an online survey hosted on the City's project webpage and a virtual public information center hosted on November 4th, 2021. At each stage of the process, engagement centred on identifying programs that have already worked in Temiskaming Shores, building upon those successes and connecting partners who are already working to deliver new programs with one another to support their ongoing efforts. While a complete engagement summary is featured in the Engagement Discussion Paper, provided below are some key insights related to programming.

Stakeholder Working Group Workshop #1 [May 27th, 2021]

Event Description

Held to develop a "Quick Wins Strategy" which identified projects that could be implemented immediately, and have stakeholders share their strengths, weaknesses, opportunities as it relates to the City's active transportation system.

Relevant Findings

- Important to develop an effective wayfinding system which highlights connections between the STATO Trail and key travel destinations;
- Utilize funding from the Federal Government's Healthy Community Initiatives fund to implement bicycle parking in the downtown cores and introduce bike hubs with bike rentals and repair services; and
- Sponsor new active transportation amenities within local downtowns to support beautification and AT convenience.

Stakeholder Interviews [May 27th, 2021]

Event Description

Interviews among 8 different stakeholders from key local agencies, including City staff, the local public health unit and Active Travel Committee. The goal of each interview was to enrich understandings of the local active transportation context, with 4 questions posed specifically about programming:

1. What are some programs and who are the partners?
2. What are some programs you think the City should explore?
3. Who should lead program development and who should support?
4. Which programs should be prioritized?

Relevant Findings

- Provide more greenery and shading elements within the local downtowns;
- Leverage the city's strong history of local fundraising and funding applications to support active transportation investments;
- Provide more bike parking near key travel destinations and encourage more cycling supportive amenities (i.e. showers and lockers) among local businesses;
- Broaden the mandate of the BFCC to include investments into active transportation
- Develop an app or use the city's website to provide real time updates on trail conditions; and
- Expand the existing bike exchange program into an all-year round bike hub / bike rental service.

Online Survey [May – June 2021]

Event Description

To provide the public with an opportunity to share their priorities for the ATMP an online survey was hosted on the City's website for roughly a month. The survey generated 283 responses in total, including feedback items directly related to supportive programming.

Relevant Findings

- Survey respondents identified an improved maintenance scheme to better maintain the active transportation network as a key priority;
- Survey respondents listed the provision of additional amenities along active transportation routes (i.e. benches, fountains, bike racks) as an important priority; and
- Survey respondents encourage the City to provide additional education on how roads are to be properly shared with cyclists.

Council Survey [May – June 2021]

Event Description

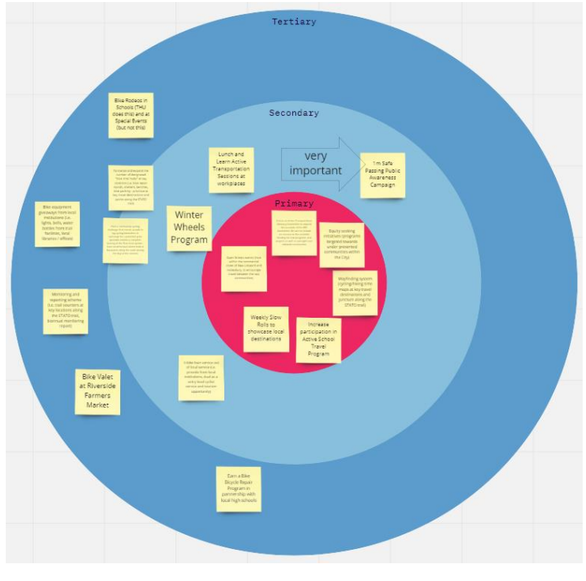
To better understand the priorities of the City's elected council as it relates to active transportation, an anonymous survey was distributed among sitting members. Questions included on the survey pertained to their understanding of existing facilities and conditions, aspirations for the ATMP and suggestions of notable agencies to partner with.

Relevant Findings

- Important the plan improve awareness of local active transportation facilities among residents;
- Strived to promote active transportation use among all age demographics, particularly older cohorts; and
- Suggested that the OPP, tourism-based businesses and sightseeing groups be included within project consultations

Stakeholder Working Group Workshop #2 [September 28th, 2021]

To confirm preliminary ATMP recommendations, the project's stakeholder working group was convened for a second workshop. The event was held remotely and facilitated through a presentation which informed participants of project progress made to date. Using the interactive Miro board tool, the event also invited attendees to comment on the appropriateness and prioritization of 17 different suggested programming ideas, identified through best practices research. This involved having participants assign programming ideas within one of three degrees of prioritization: primary, secondary and tertiary (**Figure 45**). Additionally, participants could add their own ideas to the existing list, for others to comment on and assign among the three prioritization categories.



Primary

- Weekly Slow Rolls to showcase local destinations;
- Open Streets events (host within the commercial cores of New Liskeard and Haileybury, to encourage travel between the two communities);
- Increase participation in Active School Travel Program;
- Wayfinding system (cycling/hiking time maps at key travel destinations and juncture along the STATO trail);
- Equity seeking initiatives (programs targeted towards underrepresented communities within the City); and
- Create an Active Transportation Advisory Committee to expand the mandate of the BFC Committee. Be sure to include an increase in available funding for new projects as well as oversight over sidewalk construction.

Secondary

- 1m Safe Passing Public Awareness Campaign;
- Lunch and Learn Active Transportation Sessions at workplaces;
- Winter Wheels Program;
- E-bike loan service out of local service (i.e. provide from local institutions, dual as entry level cyclist service and tourism opportunity);
- Host a community cycling challenge that incents people log cycling kilometers in exchange for a potential prize (possible involve a complete touring STATO trail system – have small festival events held at key points along the route during the day contest); and
- Formalize and expand the number of designed "bike / trail hubs" at key locations (i.e. bike repair stands, shelters, benches, bike parking – prioritize at key travel destinations and points along the STATO trail).

Tertiary

- Bike Rodeos in Schools and at Special Events;
- Bike equipment giveaways from local institutions (i.e. lights, bells, water bottles from trail facilities, local libraries / office);
- Monitoring and reporting scheme (i.e. trail counters at key locations along the STATO trail, biannual monitoring report);
- Bike Valet at Riverside Farmers Market and other community events; and
- Earn a Bicycle Repair program in partnership with local high schools.

Figure 45 | Screenshot of the diagram used to collaboratively assign implementation horizons to the ATMP's programming recommendations

Based on the feedback from the Stakeholder Working Group and discussions with City Staff, a "tiered" approach to active transportation programming was developed for the City of Temiskaming Shores. This structure is designed to help the City to prioritize its investments in education and encouragement programming as it begins to form a stronger relationship with the partners already working on active transportation within Temiskaming Shores, and to guide the City as it moves towards a more multi-modal future.

4.4 PARTNERS

To create a culture of cycling and active transportation in Temiskaming Shores, the City will need to build strong, stable and effective partnerships with stakeholders at the local, regional and provincial level. **Table 13** outlines potential partners for the Township and the elements of the Programming Plan that each stakeholder could be responsible for.

Table 13 | Suggested Local partners to support the ATMP's programming recommendations

Partners	Roles
Bike Temiskaming Shores / BFC Committee / Proposed Active Transportation Committee	One of the recommendations contained in this plan is to expand the mandate of the BFC Committee to encompass all areas of Active Transportation. Regardless of whether or not this recommendation is followed, the existing Committee will serve as a delivery agent for new programs and projects within the City. The Committee has shown itself to be capable of planning and delivering events in the past, and there are opportunities to empower the committee to do even more not only to advise the City on implementation of new infrastructure, but also to organize and deliver events to build a stronger culture of active transportation. Committee members possess a strong understanding of the local context and will be key to marshalling resources to support the implementation of this Plan. For the purposes of the remainder of this section, we will assume that the BFC Committee would be transitioned over to become an AT Committee, so that is how the remainder of this section will refer to this group with regards to assigning responsibilities.
Temiskaming Accessibility Advisory Committee	The Accessibility Advisory Committee can provide input as the Plan moves forward to ensure that Temiskaming Shores' plans build accessibility into every level of decision-making within the City.
STATO Trail Group	The STATO Trail Group has led the development and ongoing maintenance and operations of the STATO trail system which is and will remain a key component of the City's active transportation system.
Ontario Provincial Police (OPP)	The OPP is an important partner in promoting safe road use for all users. Police officers can deliver educational and public awareness messaging, can help with Bike Rodeos and cycling education at schools, and can play a role in sharing information about collisions and citations with City staff in order to better inform infrastructure decisions.

Partners	Roles
Temiskaming Road Safety Coalition	Volunteer led group of residents advocating for improved traffic safety across Temiskaming Shores. As a trusted community voice, the group remains a vital partner in developing context sensitive design solutions and programs.
Temiskaming Shores and Area Chamber of Commerce	A formal body representing and advocating on behalf of the interests of the business community within the City of Temiskaming Shores. The Chamber of Commerce is a key partner in developing context-sensitive solutions that support the vitality of key commercial areas within Temiskaming Shores and aligning active transportation initiatives with existing tourism efforts.
New Liskeard BIA	Downtown New Liskeard is an important destination within the City, and the businesses that make up the BIA will be important partners in delivering new programs to encourage people to walk, bike or wheel to the area.
Local Businesses	Businesses that are not represented by the BIA, including those in Haileybury and Dymond still have an interest in promoting active transportation, especially to their employees.
Temiskaming Shores Planning and Works Staff	It will be important for City staff to coordinate active transportation initiatives with the scheduled implementation of new supportive infrastructure to best advance objectives of the ATP. The City already has existing AT-related programming, including Active School Travel Programs and an Age Friendly Community Coordinator
Timiskaming Health Unit	The Timiskaming Health Unit has been an active, trusted supporter of active transportation in Temiskaming Shores for many years. A trusted partner who advises the Bicycle Friendly Community Committee, Road Safety Coalition, Age Friendly Community Coordinator and Active School Travel Committee, the Health Unit will continue to play a central role in promoting and supporting active transportation in the City of Temiskaming Shores.

4.5 PROGRAMMING RECOMMENDATIONS

The approach taken by this Plan is to provide the City with a list of initiatives that can be undertaken over the next several years, with new programs being added into the City's "toolbox" to support active transportation as the City and its partners expand their reach and capacity around active transportation. The recommendations are organized into three "tiers", which provide some guidance for the City with regards to prioritizing their investments. Based on existing capacity, an understanding of the desires of the community and research about best practices relating to active transportation programming, this Plan outlines an implementation plan that scales up the level of effort and investment as the active transportation community continues to grow in Temiskaming Shores, providing programs that will reach new audiences and grow active transportation for years to come. The three "tiers" of programming are:

Phase 1: Foundations

Programming initiatives likely to generate the greatest participation that ought to be adopted first to establish a foundation upon which further involvement within active transportation can grow.

Phase 2: Basic Programming

Programming initiatives that maintain the momentum of increasing active transportation involvement and begin the process of facilitating a deeper cultural shift in support of active transportation.

Phase 3: Advanced Programming

Programming initiatives that tailor to a wider range of potential active transportation audiences and help to establish a more mature culture of active transportation.

While there is no single route to becoming more bicycle friendly, it is recommended that the City focus on fully implementing the recommendations in each category before rolling out initiatives in the subsequent categories. For example, when determining how to spend programming dollars, the preference should be given to funding the programs in the "Foundations" category before moving on to programs in the "Basic" category, and programs in the "Basic" category should be fully implemented before initiating programs in the "Advanced" category. The delineation between these programs is based on extensive research and experience with Community-Based Social Marketing (CBSM) and is designed to facilitate both cultural and individual shifts in belief, behaviour and attitude towards active transportation in Temiskaming Shores. With that said, however, it is important to acknowledge that circumstances may change, so these assumptions and recommendations should be revisited regularly to ensure that they remain relevant. All of the programs outlined in this section will have a positive impact on the City's active transportation culture, so should funding become available to pursue a program that is beyond the tier that the City is actively working on, the City and its partners should still pursue that funding.

The tiers as presented here provide a cost-effective way to deepen the City's connections with its partners and its residents as it relates to active transportation. By investing strategically, seeking funding support from higher levels of government and building on the existing partnerships within the City, Temiskaming Shores could well achieve all of the goals set out in this Chapter within 5-6 years, firmly positioning the City as one of Ontario's leading communities in promoting a cultural shift towards active transportation.

4.5.1 PHASE 1: FOUNDATIONS

The first phase of programs includes initiatives with broad appeal that are likely to generate the greatest involvement and establish a stronger culture of active transportation within Temiskaming Shores. These programs build upon existing initiatives already underway within the City and focus largely on learning lessons from comparable municipalities in Ontario and beyond. While the City and its partners have proven that there is the capacity to run programs to support active transportation through leveraging existing staff resources or relying on volunteers, the programs presented here would represent a significant increase in the level of effort required to deliver them. As the number of new programs and the number of new partnerships begins to grow, it will be difficult to maintain that growth when work and responsibilities are dispersed across multiple departments and committees. For that reason, it is **strongly recommended that the City Establish and Active Transportation Coordinator position** to serve as a centralized resource for all things related to active transportation. This plan has been developed in a manner that allows for the AT Coordinator position to be "scaled up" over time – starting out as a Summer Student contract position, potentially funded by the Canada Summer Jobs program, and eventually scaling up to a full-time, or nearly full-time, position once the active transportation portfolio is at a more mature stage in the City. The recommendations below also assume that both the Active Transportation Committee and the AT Coordinator will be the primary delivery agents for new programs in the City. The partners listed under each program will serve to either support or co-lead each initiative, but the presence of the Committee and Coordinator as the lead for each program should be assumed.

The remainder of the suggestions in the "Foundations" section will operate on the assumption that this resource is in place. If the staff person is not hired, these programs are less likely to be as successful, although they could still come to fruition with the support of the City's numerous partners, advisory committees and volunteer groups.

PROGRAM #1: ROUTINE COMMUNITY SLOW ROLL EVENTS

A simple yet effective program to encourage greater active transportation use is through hosting regular community walks or bike rides. Sometimes referred to as slow rolls (when the event is a bike ride), these events provide residents with the opportunity to engage in an enjoyable, social activity while also exposing them to the possibilities that exist for getting around the local area actively. Given its cultural relevance and design as a protected all ages and abilities facility, events should be arranged along key sections of the STATO trail or within the City's urban centers where travel destinations remain within more bikeable / walkable distances. Key components of a successful community ride or walk program include:

- **Regularity:** walks or rides should be held on a regular basis, to provide predictability and allow for casually drop ins and outs;
- **Visibility**: walks or rides should be distinctively branded, to improve their awareness within the community;
- **Accessibility:** walks or rides should be done at a pace that is accessible to inexperienced participants and allows for socialization; and
- **Socialization:** walks or rides should encourage community building, allowing participants to become acquainted with each other and the sites and business that make up the local area.

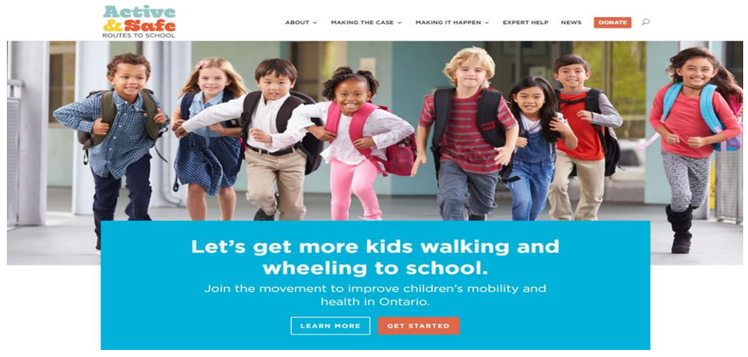
To assist with event organization and sponsor insurance for ride and walk leaders as necessary, the city and BFC committee should remain lead organizers

Recommended partners:	– Age Friendly Community Coordinator – Temiskaming Road Safety Coalition – Temiskaming Shores Chamber of Commerce – Service clubs – Local businesses
Estimated Costs:	– $2,500 per year for insurance and promotional costs
Inspiration:	– Windsor-Tecumseh Slow Ride(here)

PROGRAM #2: INCREASED ENROLLMENT WITHIN THE ACTIVE SCHOOL TRAVEL PROGRAM

The Timiskaming Health Unit is aiming to expand the Walk N'Roll Timiskaming (previously known as Timiskaming Active School Travel) program to all schools within Temiskaming Shores, but that outreach largely depends on both the Health Unit's internal resources and their ability to connect with the schools within the City. To accelerate implementation, the City could provide in-kind support by including Walk N'Roll messaging in their communications to their residents, both through the City's Social Media Channels and through their partnerships with local newspaper and radio stations. As the Health Unit leads the development of new School Travel Plans, The City can incentivize school participation and support the existing participants by investing in physical infrastructure, such as crosswalks, signs, lighting or traffic calming elements as those items are recommended by the Travel Plans. As School Travel Planning advances in Temiskaming Shores, the City could also consider providing support for School Streets programs around schools within the City to provide an even higher level of safety and comfort for students to get to school using active transportation.

Recommended partners:	– Timiskaming Health Unit – Age Friendly Community Coordinator – Active School Travel Committee
Estimated Costs:	– Approximately $10,000 per year for outreach materials, advertising and infrastructure improvements
Inspiration	– Town of Ajax – Active and Safe Routes to School (here) – School Streets programs in Ontario (here)



PROGRAM #3: OPEN STREETS EVENTS

A growing tradition practiced among municipalities around the world, Open Streets Events feature the temporary closure of a major roadway to cars to create additional space for active travel and recreational programming. Often designed as a large street fair, the event should be held within highly travelled areas, such as commercial main streets, to dual as an opportunity to support local commerce. Within Temiskaming Shores, it is suggested that an Open Streets event be held within the downtown areas of New Liskeard and Haileybury, to promote travel between the two urban centers. Coordinating the street closure required for the Open Streets event should be highly feasible, with similar arrangements required for several existing festivals, including Noel Village, Summerfest and Bikers Reunion. The City should also consider arranging a bike valet service and a community bike ride between the two downtowns along the STATO trail to encourage active commuting to the event.

Recommended partners	– Village Noel, Annual Biker's Ride Gathering Organizers – Temiskaming Shores Chamber of Commerce – Rotary club and local organizations – Recreation, Programming, Culture and Tourism staff – STATO Trail Group
Estimated Costs	– $5,000 for organization and event related expenses
Inspiration	– Town of Kingsville – Open Streets (here) – Peterborough Pulse – Open Streets (here)

PROGRAM #4: AT DISTANCE WAYFINDING MAPS AND SIGNS

Despite the City's broad geography, most travel destinations within Temiskaming Shores remain concentrated within the urban centers of New Liskeard, Haileybury and Dymond. Many trips made within these communities could be easily replaced by active modes with most destinations situated within a 15-minute bike ride or a 20 minute walk within the City's population centres. Even the distances between the communities are relatively short, with a trip from Haileybury to New Liskeard taking about 35-40 minutes on a bike, with the potential to make that trip in under 20 minutes when using an EBike. One of the challenges with promoting active transportation is that residents often assume that walking or cycling to a destination will take much longer than it does [1]. That knowledge gap can be fixed, however, by promoting the large area of town that lies within a 5-, 10- and 15-minute bike ride of popular destinations. Research has shown that wayfinding, when deployed in a way that highlights safe, attractive routes and the relatively short time that it can take to move between destinations, can significantly improve how residents perceive walking and cycling [2]. A detailed wayfinding strategy will help the City to determine the proper placement of signs and identify of key destinations. The development of a consistent design and style will help to develop and reinforce a distinctive Temiskaming Shores AT brand, boosting visibility and awareness of walking, cycling and wheeling in the City.

Recommended partners:	– Temiskaming Shores and Area Chamber of Commerce – Temiskaming Road Safety Coalition
Estimated Costs:	– $20,000 for initial development of AT wayfinding strategy, purchase and placement of all signage and materials and $10,000 for additional signage to complete the network
Inspiration	– Brant County AT Wayfinding system (here)

PROGRAM #5: ACTIVE TRANSPORTATION ADVISORY COMMITTEE

The City's Bicycle Friendly Community Committee has been highly effective at developing new programs and projects to support cycling within Temiskaming Shores, but a similar measure of support has not been extended to pedestrian infrastructure and programs in the City. The City should consider expanding the mandate of the BFC Committee to serve as an Active Transportation Advisory Committee, providing the committee with the ability to advise City Staff and Council on investment priorities, organize and deliver programs and identify funding streams that the City could pursue. It is suggested that the City create a discretionary fund for the committee, to allow them to make small investments or purchases that can support the committees goals. This funding could be used for purchasing ad space, providing honoraria for speakers or cycling instructors or even investing in amenities like bike parking or seating. Like with the existing BFC Committee, local volunteers, advocates and subject matter experts should be prioritized when selecting new members on the expanded committee.

Recommended partners:	– Timiskaming Health Unit – City Staff
Estimated Costs:	– $2,500 annually for committee discretionary funding to support active transportation initiatives
Inspiration	– Collingwood's Trails & AT Committee (here)

PROGRAM #6 SUPPORT FOR MARGINALIZED COMMUNITIES

The City's support for the Bike Exchange program is admirable, with the program distributing hundreds of bikes in recent years to residents of Temiskaming Shores and the surrounding communities. The City and its partners should consider how the existing Bike Exchange format could be supplemented with a more deliberate focus on equity to ensure that those residents who need bikes the most receive them first. Within Temiskaming Shores, women, Franco Ontarians, lower-income residents and Indigenous people are frequently identified as relatively underserviced groups who could be supported by the bike exchange. To supplement the one-day bike exchange event, it is suggested that the bike exchange also create a database, in partnership with local service delivery agencies, of people who need a bike – not simply for recreational purposes, but for transportation around their community as well. By connecting with partners with a pre-existing relationship with marginalized communities, the City and its partners can also begin to create additional avenues for those residents to get involved as the City's ATP is implemented. As more people get involved, consider adding bike maintenance skills training to the program offerings to help more residents keep their bikes on the road without relying on paying for repairs that they could perform themselves.

Recommended partners:	– Accessibility Advisory Committee – Recreation Program, Culture and Tourism staff – Public Library Board – ACFO-Temiskaming – Keepers of the Circle
Estimated Costs:	– $5,000 per year for materials and support, plus in-kind support to organize the exchange event
Inspiration	– Government of Canada Cycle Indigena Winnipeg Initiative (here) – City of Hamilton's Bike for Mike (here)

4.5.2 PHASE 2: BASIC PROGRAMMING

Following the implementation of all Phase 1 (Foundations) programming, the City should proceed with adopting initiatives categorized with Phase 2: Basic Programming. These programs seek to build upon the foundational of cultural support and capacity for active travel built during Phase 1 by reaching out to a broader audience of residents. This phase includes educational campaigns, transportation demand management initiatives, promotional events and investments into supportive amenities which begin to solidify active transportation's presence within the community. These programs are meant to supplement the broader initiatives introduced during Phase 1 and give individuals the extra push needed to make a behaviour change.

PROGRAM #1: WINTER WHEELS PROGRAM

Winter Cycling is growing in popularity in many communities across Canada from Calgary to Montreal and beyond. As a community that experiences all four seasons, it is important for Temiskaming Shores to consider how it can support active transportation all year round to reduce dependence on automobiles within the community. A program that has proven effective throughout Ontario is the Winter Wheels Program, first developed in the City of Peterborough. Winter Wheels programs invite residents to apply for support for Winter Cycling – it provides them with a studded front tire, a winterizing bike tune-up and other equipment like fenders, pannier bags and gloves, that are necessary for a comfortable winter riding experience. For selected participants, they are asked simply to try cycling through the winter, and to share their experiences with their families, friends and in promotional materials for the program. The program can help to start the process of normalizing winter cycling in Temiskaming Shores, creating an environment where more residents would consider trying it even if they are not part of the Winter Wheels cohort for that year.

Recommended partners:	– STATO Trail Group – MTO – Transportation / Traffic Department – Timiskaming Health Unit
Estimated Costs:	– $5,000 per year for equipment, education and promotional materials
Inspiration	– Windsor Essex Winter Wheels: Cycle Smart in Winter (here) – Banff, Alberta's Winter Cycling Supports (here) – Ottawa EnviroCentre Winter Cycling Online Resource (here)

PROGRAM #2: 1M SAFE PASSING PUBLIC AWARENESS CAMPAIGN

In 2015, Ontario's Highway Traffic Act was updated to require motorists to pass cyclists on roadways with at least 1 meter of space between them. Despite these legal changes, many motorists remain unaware of the law and its implications, creating safety risks for cyclists. To address this, the City should host an awareness campaign remind all traffic users of this legal requirement using its various communication channels. This includes online platforms, such as the city's website and social media channels, as well as physical assets such as ads in the local newspaper and posted billboards. As the agents responsible for enforcing such regulations, the City should also partner with law enforcement, including the OPP, by organizing an accompanying education and enforcement blitz.

Be sure to make use of existing resources to promote the campaign – developing new materials can be costly and time-consuming!

Recommended partners:	– OPP – MTO – Timiskaming Health Unit
Estimated Costs	– $2500 annually for printing informational materials and running social media ads with existing campaigns
Inspiration	– Peterborough County – A Metre Matters campaign (here) – Ottawa Police Service – Sonar electronic device (here)

PROGRAM #3: LUNCH AND LEARN WORKPLACE ACTIVE TRANSPORTATION WORKSHOPS

As the community level conversation about active transportation begins to shift, it is important to begin offering more targeted interventions that reach more targeted groups of residents and engage them directly. An example of this type of program would be hosting educational workshops with local workplaces which teach employees about key aspects of active transportation. Suggested instructional modules can range from: Bicycle-Friendly Driver training, Basic Bike Maintenance and Cycle Commuting 101 to workshops that help employees build up their cycling skills or pair them with a co-worker who can serve as their active commuting "buddy" to provide mutual support to develop more sustainable commuting habits. These programs should be designed to take approximately one hour, and should offer a mix of practical, hands-on lessons and classroom-based lessons. Consider offering incentives to employees who take the courses, including gift certificates for local businesses or a catered lunch during the session, to improve participation and attendance.

Recommended partners:	– Temiskaming Shores and Area Chamber of Commerce – Recreation Program, Culture and Tourism staff
Estimated Costs:	– None, costs would be covered by employers and other participating groups (staffed by city active transportation coordinator)
Inspiration	– Cycle Toronto's Street Smarts Workshops (here) – Bike Windsor Essex's Learn to Ride Classes (here)

PROGRAM #4: E-BIKE LOAN SERVICE

Getting more residents to consider cycling not only requires a proper education of its benefits and how to do so safely, but a series of experiences that spark joy and excitement. Although cycling can be exhilarating, it can also feel intimidating for people who haven't cycled in a long time, whose physical ability may be limited or who are worried about hills, wind and other challenging riding conditions. In Temiskaming Shores, where some steep hills, strong prevailing winds and relatively long distances may discourage people from giving cycling a try, the use of an electric assist bike can significantly reduce these concerns. Electric assist bikes, which feature a small electric motor that provides assistance while the rider is pedalling, make cycling easier and more accessible to everyone, but these bikes do come with a price tag that can be prohibitive to some users, especially if they have never tried them before. Given that financial barrier, it is suggested that the City purchase a select number of E-Bikes for residents to rent out. The service can be provided out of a local institution, such as a recreational facility, community library, or any other location that is easily accessed by residents. This would open up opportunities for people to see what is possible with an EBike in Temiskaming Shores, and would also provide a unique experience to offer to tourists and visitors to the City as well.

Recommended partners:	– STATO Trail Group – Accessibility Advisory Committee – Recreation Program, Culture and Tourism staff
Estimated Costs	– $10,000 for purchase of an initial fleet of E-Bikes
Inspiration	– Burlington Vermont E-bike / Cargo-bike rental service (here)

PROGRAM #5: COMMUNITY CYCLING CHALLENGE

An annual community cycling challenge, where residents are encouraged to cycle in contribution of a community wide goal, can provide the residents of the City with an opportunity to come together around walking and cycling in pursuit of a common goal. This goal can be a certain cumulative travel distance as a community, a collective fundraising goal or even a friendly competition between residents of each of the three communities to see who can log the most trips per capita over the course of a month. Hosting a community cycling challenge provides an opportunity to spotlight cycling within the community as well as offers a common, constructive cause that can motivate people to consider the activity themselves. Today, there are an increasing number of free apps available that allow residents to input either their kilometers ridden, or money fundraised in contribution of the cycling challenge's set goal. These crowd sourcing programs make the organization and tracking of a community cycling challenge both simple and cost effective. As the challenge grows and evolves, consider encouraging workplaces, schools and other institutions to challenge their peers to see who the most active workplace or school in Temiskaming Shores can be!

Potential partners	– STATO Trail Group – Temiskaming Shores and Area Chamber of Commerce – Rotary club and local organizations – Surrounding municipalities – Ontario Active School Coordinator
Estimated Costs	– $5,000 for promotion, website set up costs and a donation to local relevant cause
Inspiration	– Town of Halton Hills – Community Cycling Challenge (here)

PROGRAM #6: IMPLEMENT DESIGNATED AMENITY HUBS

Designing for comfortable and convenient active travel requires that all stages of a trip be considered – especially the end of a trip. Similar to how vehicle parking is provided when new developments are constructed, the City should be considering how cycling and walking are accommodated at popular destinations within the community. Features should be prioritized at key destinations and at important landmarks along popular routes and should reflect a complete and comprehensive understanding of an active traveller's needs and concerns. When appropriate, existing amenities such as libraries, community centers, parks and other publicly owned land should be leveraged, to minimize the need for new easements. Common features which should be incorporated within these designated amenity hubs include:

- **Bicycle parking units:** short-term and long-term units as well as seasonal "corrals" within highly trafficked areas;
- **Shelters and rest areas:** comfortable seating options with enough coverage to protect users from the natural elements;
- **Lighting:** adequate lighting to ensure user safety and minimize potential hazards due to obscured visibility;
- **Water refill stations:** fountains or water bottle refill machines that allow active travellers to remain hydrated;
- **Signage and wayfinding maps:** to address navigational needs; and
- **Bike repair stands:** optional feature, fixture with a series of tools attached with allow travellers to preform basic maintenance on their bicycles for free.

Potential partners	– Town staff – Local businesses – Timiskaming Health Unit
Estimated Costs	– $3,000 - $15,000 per "Rest Area" depending on the amenities provided. Budget $5,000 annually.
Inspiration	– City of Toronto, Scarborough Bike Hub (here)

4.5.3 PHASE 3: ADVANCED PROGRAMMING

The third and final category of programming recommendations includes measures appropriate to implement once a strong active transportation culture has been established. These programs serve to both leverage the momentum of past initiatives as well as tailor the growing diversity of audiences now consider active transportation as either a mode of travel or recreational activity. Often requiring a higher degree of financial and human resources, programs should rely on either existing partnerships or establish new ones among local institutions and services, for support with planning, funding, and coordination. These types of programs should be undertaken once all the items in the "Foundations" and "Basics" are underway but could be expedited if an opportunity for an injection of resources from external funding sources arose.

PROGRAM #1: EARN A BICYCLE REPAIR PROGRAM

The experience with the Bike Exchange locally has shown that there is both a supply of, and a demand for, used bicycles of all shapes and sizes in Temiskaming Shores. The City can expand the value of this demand by partnering with local youth services agencies and High Schools to fund and administer an active "Earn a Bicycle" program. Consider working with High Schools to offer an Earn-A-Bike program where students participate in bike repair and bike shop maintenance while also building a custom bike for themselves. This helps to provide The Bike Exchange with the volunteer power it needs to refurbish more bikes, puts more bikes into the community and helps to provide residents (primarily youth) with transferable, applicable skills that can be carried forward in the future. The workshop would create an important community space for participants to bond over their shared interest in cycling and hopefully inspire lifelong participation in the activity.

Recommended partners:	– Local Schools – Age Friendly Coordinator – Ontario Active School Coordinator – Rotary club and local organizations
Estimated Costs:	– None, staff time only.
Inspiration:	– Earn-a-Bike Program –B!ke Community Bike Shop, City of Peterborough (here)

PROGRAM #2: BIKE VALET AT COMMUNITY EVENTS

Bike Valet is a highly visible, effective way of showing a Community's commitment to making cycling easier, safer and more convenient. Temiskaming Shores should host Bike Valet at the Riverside Farmers' Market while it is in season, offer the service at regular festivals and events downtown - potentially staffing it with the active transportation coordinator and members of the AT Committee. This would provide a benefit to the community – providing people on bikes with a safe place to lock their bike while at community events and providing an opportunity for Municipal representatives to talk with riders about cycling in Temiskaming Shores. The City could also consider integrating bike valet into the special events permitting process to ensure that all special events in Temiskaming Shores include provisions for Bike Valet. This could be accompanied by a small fee for event organizers to pay for staffing at the bike valet, and could help the community make bike valet a more reliable element of special events in Temiskaming Shores.

Recommended partners:	– Recreation Program, Culture and Tourism staff
Estimated Costs:	– $5,000 to purchase Bike Valet materials (tents, fencing, bike racks, tags, tables and promotional materials)
Inspiration:	– Town of Saugeen Shore – Bike Valet (here)

PROGRAM #3: COMPREHENSIVE MONITORING & EVALUATION SCHEME

One common challenge faced by smaller communities like Temiskaming Shores relates to the lack of data on active transportation to inform meaningful planning decisions. Failing to understand who is cycling and walking, where they are doing so, prevents the City from understanding where investments should be made and whether past decisions were effective.

While there are many data collection methods available, a common approach involves installing trail counter devices to identify a baseline figure of the number of people using the trails every day. Within Temiskaming Shores, counters would be particularly essential along key segments of the STATO trail, a key component of the City's active transportation network. In addition to trail counters, consider an annual in-person count program, potentially by partnering with a high school to offer volunteer hours for students who participate in observational counting. The in-person counting can be used to supplement and verify the data collected by the automated trail counters. Using this data, the City is advised to monitor ridership trends on an annual basis, as one indicator of the efficacy of past active transportation investments. Additional guidance on monitoring the success of this Plan and reporting on its impacts are found in the Implementation Discussion Paper.

Recommended partners:	– STATO Trail Group – Local Schools
Estimated Costs:	– $2,500-12,000 for counting and data collection devices.
Inspiration:	– Trail User Counters – City of Owen Sound (here)

PROGRAM #4: BIKE EQUIPMENT GIVEAWAYS

In addition to empowering cyclists with a proper education of road and traffic safety, the City should also assist them with procuring vital safety equipment. A common concern among all road and trail users is the lack of visibility of people walking and cycling, especially at night and during periods of poor visibility. Despite being required under the Highway Traffic Act, many cyclists lack a working light or bell on their bike to safely travel. To address this, the City should work with community partners to inform and distribute such basic, yet required, safety equipment. This can be achieved through a series of "pop-up" giveaways at local festivals or key points in the active transportation network (i.e. STATO trail, downtown Haileybury and New Liskeard), where cyclists are intercepted and given such materials for free. To support local active transportation branding efforts, it is also suggested that such materials be custom-designed and procured to feature the City's logo. Suggested items that ought to be distributed include:

- **Small, easy attachable bike lights;**
- **Bicycle bells;**
- **Adhesive light reflective bands; and**
- **Water bottles.**

Potential partners	– Timiskaming Health Unit – Local Bike Shops
Estimated Costs	– $1,000 annually for lights, bells, educational and marketing material
Inspiration	– City of Ottawa - Lights on Bikes (here) – City of Thunder Bay – Light the Night (here)

PROGRAM #5: BIKE RODEOS

One of the most effective ways to create a stronger culture of cycling is to start with the youth in the community. With a small number of elementary schools, Temiskaming Shores can feasibly ensure that all local students receive cycling education through Bike Rodeos for a relatively small investment. Led by the active transportation coordinator, the City should strive to have all grade 5 students participate in a Bike Rodeo every school year. This will give all local students proper instruction in basic bike handling, helping to encourage safer cycling practices later in life, and healthier active lifestyles. To minimize costs and provide students with an opportunity to apply skills learned from the Bike Rodeos, the initiative should be coordinated with the Active School Travel Program (see Phase 1 Foundations Programming Recommendation# 1).

Recommended partners:	– Local Schools – Ontario Active School Coordinator – OPP – Timiskaming Health Unit
Estimated Costs:	– $1,000 annually for insurance and materials. Courses delivered as part of AT Coordinator's duties.
Inspiration:	– Cycling into the Future – Waterloo Region (here)

4.6 IMPLEMENTATION SUMMARY

The programs and suggested prioritization outlined in Part 1 detail a strategic approach that the City can take to support a cultural shift in support of active transportation in Temiskaming Shores. To support these initiatives, additional staffing capacity will be required within the City, which is why the foundational recommendation from this section is to create an Active Transportation Coordinator position as soon as possible. The gradual scaling up of program offerings outlined here allows the City to slowly expand the role, starting off with a summer student position and eventually scaling up to a full-time position where the coordinator can support both the programming and the development of new infrastructure within the City. With this additional staffing support, the City will be well equipped to achieve the desired goals and objectives of the Temiskaming Shores Active Transportation Plan. A summary of the anticipated staffing resources, proposed programs and estimated costs for Phase 1, Phase 2 and Phase 3 proposed programs / initiatives, is presented within **Table 14**, **Table 15** and **Table 16**, respectively.

Table 14 | Summary of Programs for Phase 1: Foundations

Phase 1 Programs	Estimated Costs	Cost Frequency
Routine Community Slow Roll Events	$2,500	Annual
Increased Enrollment within the Active Safe Routes to School Program	$10,000	Annual
Open Streets Events	$5,000	Annual
AT Distance Wayfinding Maps & Signs	$20,000 (one-time) $10,000 (one-time)	One-time cost Annual
Active Transportation Advisory Committee	$2,500	Annual
Support for Marginalized Communities	$5,000	Annual
Total Costs:	$25,000 plus $30,000	Annual Wayfinding Strategy and signage

Staffing resources required: 0.25 FTE

Table 15 | Summary of Programs for Phase 2: Basic Programming

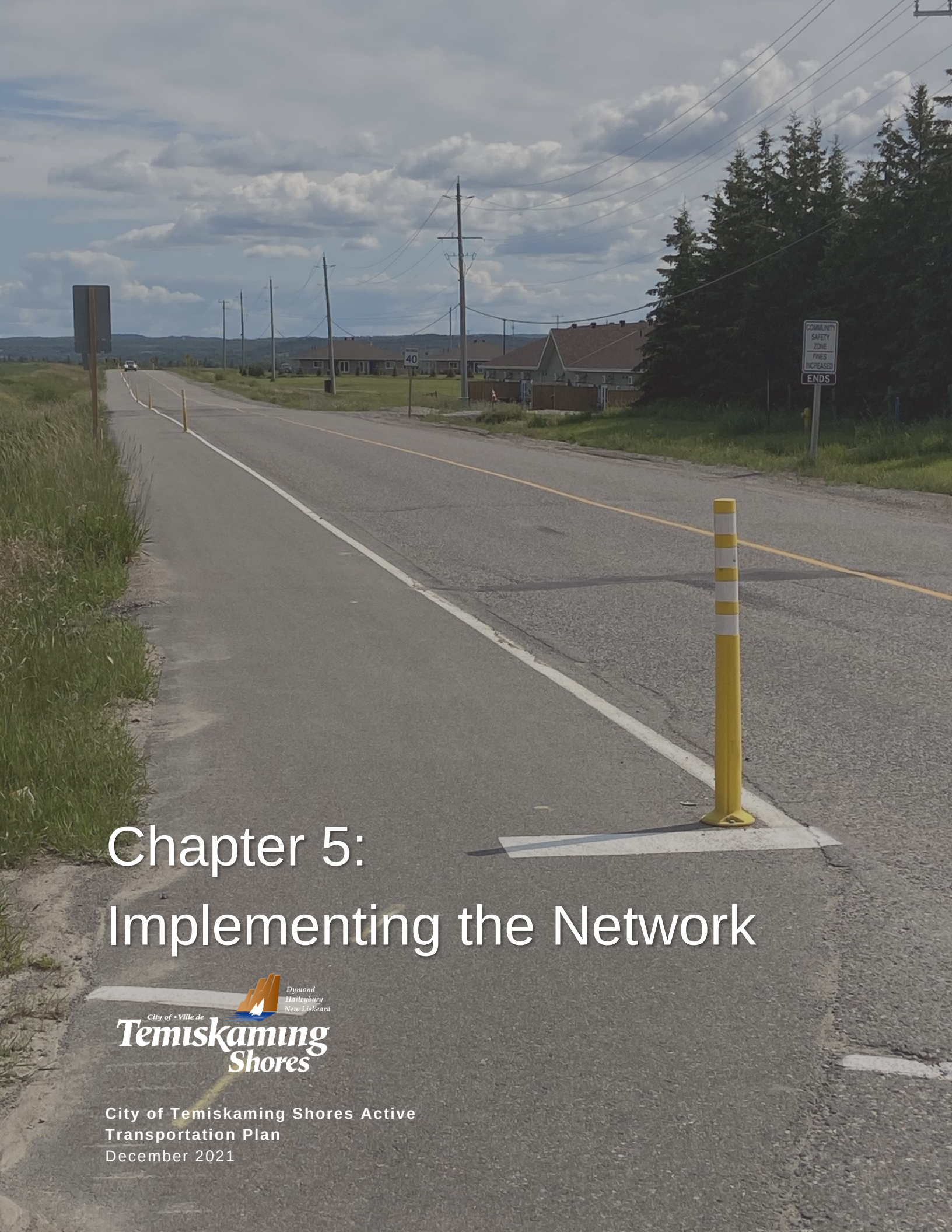
Phase 2 Programs	Estimated Costs	Cost Frequency
Winter Wheels Program	$5,000	Annual
1m Safe Passing Public Awareness Campaign	$2500	Annual
Lunch and Learn Workplace Active Transportation Workshop	$0	One-Time
E-Bike Loan Service	$10,000	One time
Community Cycling Challenge	$5,000	Annual
Implement Designated Amenity Hubs	$5,000	Annual
Total Costs:	$17,500 $10,000	Annual One-time cost

Staffing resources required: 0.25 - 0.4 FTE

Table 16 | Summary of Programs for Phase 3: Advanced Programming

Phase 3	Estimated Costs	Cost Frequency
Earn-A-Bike Repair Program	$0	Annual
Bike Valet at Community Events	$5,000	One-time
Comprehensive Monitoring & Evaluation Scheme	$5,000	Annual
Bike Equipment Giveaways	$1,000	Annual
Bike Rodeos	$1,000	Annual
Total Costs:	$7,000 $5,000	Annual One-time costs

Staffing resources required: 0.5 – 1.0 FTE



Chapter 5: Implementing the Network

Dymond
Haileybury
New Liskeard
City of • Ville de
Temiskaming Shores

City of Temiskaming Shores Active Transportation Plan
December 2021

5 IMPLEMENTING THE NETWORK

The Active Transportation Plan is intended to serve as a flexible guideline for City Staff to create a culture of active and sustainable travel within Temiskaming Shores through the expansion of new routes, enhancement of existing routes and development other supportive infrastructure and programs. In order to achieve the vision of a safe and accessible network for people of all ages and abilities, financial investment and supportive resources will be needed to begin implementation in the short term. The recommendations and information contained within this plan are intended to inform day-to-day decisions that not only propel the City forwards in the short-term, but also build momentum and encourage long-term efforts.

Implementation of the plan will require on-going collaboration between the City and its partners to ensure that the recommendations outlined within this document are publicly supported and realistic for Temiskaming Shores. Meaningful partnerships between different stakeholders and organizations will be required to achieve the desired outcomes. Collaborative efforts include planning and implementing physical infrastructure, educating users on how to properly use the facilities, and promoting the City's existing assets to fully realize the economic potential of active transportation in Temiskaming Shores. The following chapter provides the City with an achievable implementation strategy that will inform future decision making, policy and planning processes. Information is provided on a suggested phasing strategy, cost estimates, partnerships, funding options and additional considerations to help guide next steps.

5.1 PHASING

Developing an appropriate phasing strategy is a critical component of an active transportation master plan to make progress towards the City's overall vision. The Temiskaming Shores proposed phasing is categorized into two phases: 0 to 5 years and beyond 5 years. The proposed phasing for the City's active transportation network was prioritized based on several factors that reflect the current processes and plans, as well as input from the City Staff, technical and interested stakeholders and residents. Each of the routes and crossing enhancements in the active transportation network are identified under a phase based on the following considerations:

Short Term: 0 to 5 years

- Low investment projects (most signed bike routes) to achieve quick wins.
- Coordination with projects identified in the City's current Capital Budget.
- Major routes that form the spine of the network.
- Crossing enhancements that require repainting.
- Future studies to assess the feasibility and design of active transportation routes.

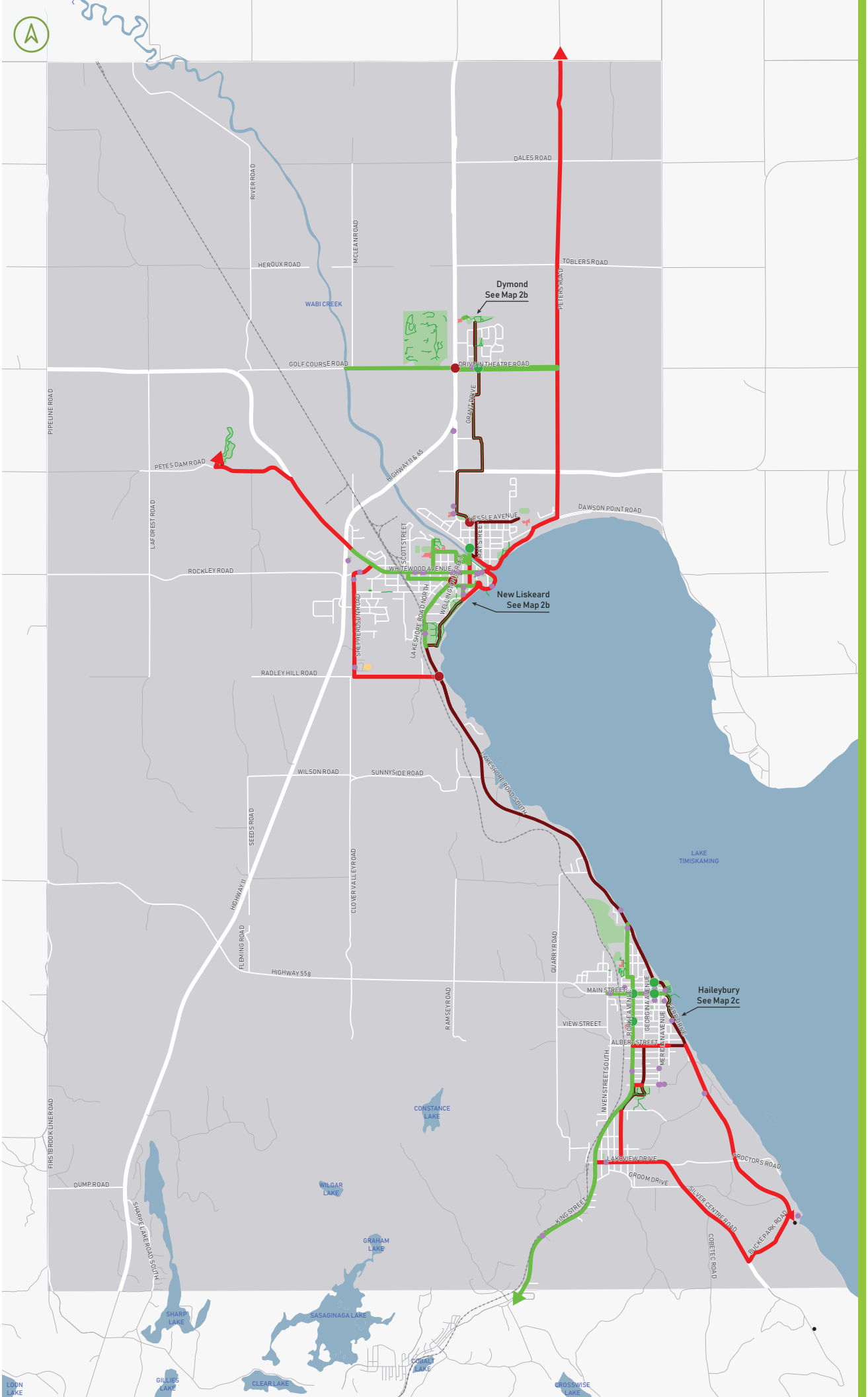
Long Term: 5+ Years

- Projects that will require major investment in rural areas.
- High profile routes and crossing enhancements that will require future studies to confirm feasibility / design.
- Corridors that have been recently reconstructed and not scheduled for upgrades in the short term.
- Sidewalk connections across the City.
- Projects that require additional discussions with the Ministry of Transportation before they can proceed.

The proposed phasing is illustrated in **Maps 1a, 1b and 1c** and also summarized below in **Table 17**.

Table 17 | Phasing Overview for the Active Transportation Network

Facility Type	Short Term 0 – 5 years	Long Term 5+ years	Total KM
Off-Road Multi-Use Trail	0.1	5.5	**5.5**
In-Boulevard Multi-Use Path	0.0	1.6	**1.6**
Buffered Bike Lane	3.3	0.4	**3.7**
Buffered Bike Lane or two-way on-road	1.4	0.0	**1.4**
Bike Lane	0.4	0.0	**0.4**
Buffered Paved Shoulders	3.9	2.7	**6.6**
Paved Shoulder	2.0	10.3	**12.3**
Sharrows Markings	1.1	0.0	**1.1**
Signed Route	3.1	4.8	**8.0**
Candidate Locations for Pilot Projects	0.2	0.0	**0.2**
Candidate Locations for Traffic Calming Measures	3.6	0.0	**3.6**
Pedestrian Bridge	0.0	0.1	**0.1**
Sidewalks	0.0	14.4	**14.4**
Total	**19.1**	**39.8**	**58.9**



Map 5a.

Proposed Active Transportation Phasing

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

Proposed Phasing
- Short Term (0 to 5 years)
- Long Term (5+ years)
- Short Term Crossing Enhancement (0 to 5 years)
- Long Term Crossing Enhancement (5+ years)
- Community Destination

Other Features
- Trailhead
- Existing trail
- STATO Trail (existing)
- Existing sharrow
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

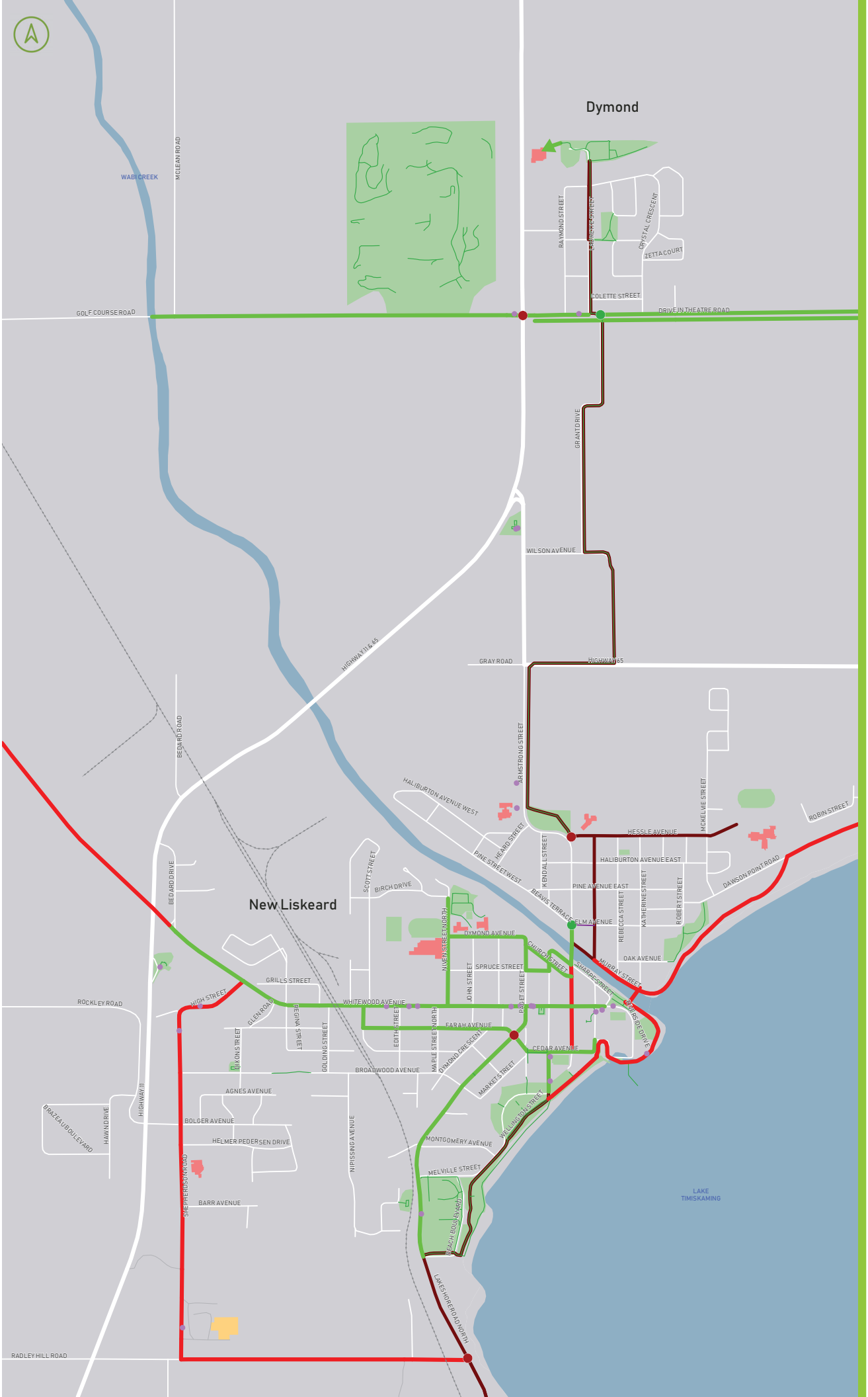
Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

 Date Published: December 2021

0 0.475 0.95 1.9



Map 5b.

Proposed Active Transportation Phasing

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

Proposed Phasing
- Short Term (0 to 5 years)
- Long Term (5+ years)
- Short Term Crossing Enhancement (0 to 5 years)
- Long Term Crossing Enhancement (5+ years)
- Community Destination

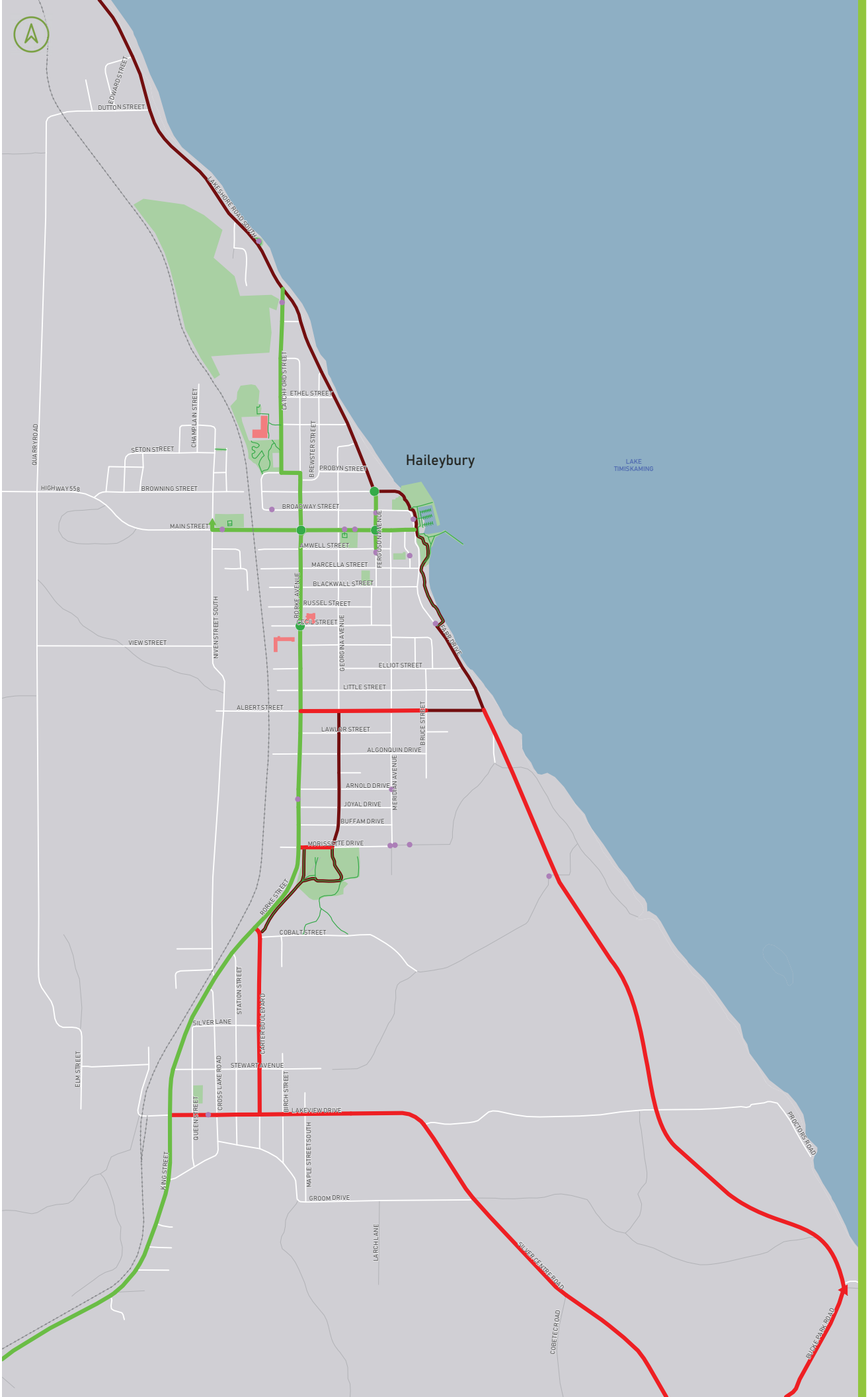
Other Features
- Trailhead
- Existing trail
- STATO Trail (existing)
- Existing sharrow
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

Produced in association with the City of Temiskaming Shores.

This map is intended for information only, and not for navigation.

0 0.125 0.25 0.5



Map 5c.

Proposed Active Transportation Phasing

CITY OF TEMISKAMING SHORES
ACTIVE TRANSPORTATION PLAN

Legend

Proposed Phasing
- Short Term (0 to 5 years)
- Long Term (5+ years)
- Short Term Crossing Enhancement (0 to 5 years)
- Long Term Crossing Enhancement (5+ years)
- Community Destination

Other Features
- Trailhead
- Existing trail
- STATO Trail (existing)
- Existing sharrow
- MTO Highway
- Local Road
- MNRF Road
- Railway
- Hospital
- School
- Recreation Area / Park
- Watercourse
- City Boundary

Note:
1. Route alignment for the proposed extension of the STATO Trail is based on information contained in the City's Recreation Master Plan (2020).

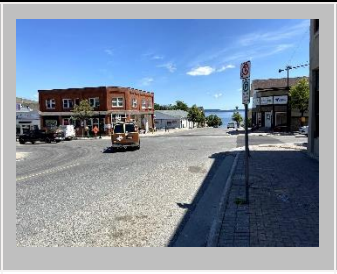
Produced in association with the City of Temiskaming Shores.

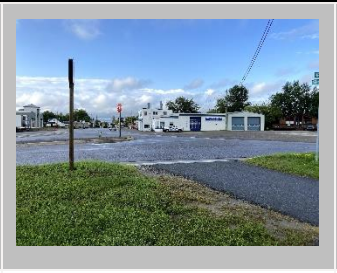
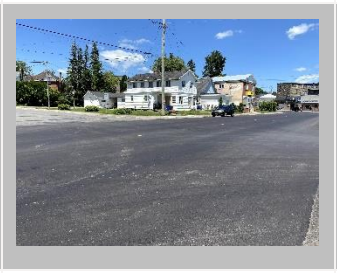
This map is intended for information only, and not for navigation.

0 0.125 0.25 0.5

In addition to the proposed phasing of the linear active transportation routes, there are 10 proposed crossing enhancements. Where possible, the proposed implementation of these enhancements is intended to be consistent with planned projects identified in the Town's capital plan and the proposed phasing of the ATP routes to capture input received from Town staff, stakeholders and the public. **Table 18** provides an overview of the suggested implementation horizons for each location where a crossing enhancement is proposed.

Table 18 | Summary of Proposed Crossing Enhancements

	Location		Proposed Enhancement	Proposed Phase
1		Ferguson Avenue / Main Street	Add stop signs and pavement markings	Short
2		Rorke Avenue / Main Street	Closing channelized intersection and normalizing it as a standard 4 legged stop controlled intersection	Short
3		Cecil Street / Rorke Avenue	Move school crossing for École Saint Croix School to the Cecil Street / Rorke Avenue intersection to align with existing sidewalks on Cecil. Alternatively, enhance the crossing at View and Rorke to a Pedestrian Crossover	Short
4		Browning Street / Ferguson Avenue	Add stop signs and pavement markings, install curb extensions / bump outs	Short

	Location		Proposed Enhancement	Proposed Phase
5		STATO Trail / Hessle Avenue	Monitor current configuration of the raised crosswalk at the school and recommend a future detail design study in this intersection to improve safety and reduce conflicts	Long
6		Armstrong Street / Elm Avenue	Add bollards to provide a designated space for cyclists approaching the intersection per the direction in the Wabi River Bridge Design Appendix.	Short
7		Lakeshore Road North / Farah Avenue	Monitor for future traffic control (consider relocating stop lights from Broadwood to Farah)	Long
8		Highway 11 / Drive In Theatre Road	Recommend for active transportation consideration in future reconstruction of the road for improved safety for all users – likely a signalized crossing in partnership with MTO.	Long
9		Drive In Theatre / Grant Drive	Add stop signs and pavement markings	Short
10		Radley Hill Road / STATO Trail	Signalized, potential to add cycling facility with improvements	Long

As the City moves forward with implementing the proposed active transportation network, it is recommended that staff review and confirm the proposed facility or enhancement at each location. The phasing plan should be updated annually to reflect available budgets, newly planned capital projects or changes in existing conditions, such as volume or pavement conditions.

5.2 KEY TAKEAWAYS FOR PHASING

Short Term Projects (0-5 years)

1. Approximately **32%** of the network is proposed in the short term. These investments represent some of the most significant connections to close gaps in the existing transportation network in Temiskaming Shores, and will provide a high quality network of active transportation facilities connecting most of the City's major destinations within its population centres.
2. Short term projects account for **7%** of the total estimated cost for the proposed network. This is largely due to the phasing of most signed bike routes and sharrows within the first five years as they are considered low investment and quick wins. These investments help to establish network connectivity on streets with lower speeds and volumes. In addition, sidewalk improvements are not included in the Short-Term phasing horizon. Sidewalks represent the single largest source of investment for the City of Temiskaming Shores emerging from this plan, largely owing to a historical backlog of sidewalk construction within the City.
3. Other short-term projects include candidate locations for pilot projects and traffic calming measures for locations that require additional monitoring or studies and have been noted by City Staff, key stakeholders and residents as challenging locations. The Wabi River crossing on Armstrong Street is a notable example where a proposed two-stage left turn box is recommended as a pilot project.
4. **Appendix A** includes a detailed breakdown of all routes that form part of the active transportation network for Temiskaming Shores.
5. Municipal planning documents are typically updated every five to ten years, consistent with the Municipal Planning Act. As such, the ATP focus for implementation are short term projects (within the first five years). Longer term projects should be reviewed in 2027 to determine their relevance and feasibility through an ATP update process.

Long Term Projects (5+ years)

6. The long-term projects for the ATP represent 93% of the estimated costs of the network and 68% of the total length of new facilities. Sidewalks account for a significant portion of this budget.
7. Sidewalk improvements, additions and replacements should be captured in annual budgeting processes beginning as early as possible. Priority gaps in the sidewalk network should be closed each year.
8. Routes identified in the **long-term horizon should be reviewed when the plan is next updated**, and at that time, staff should determine the appropriate phasing for routes based on available budgets, resources and opportunities.

5.3 PRIORITIES IN THE NETWORK

For the purposes of the Temiskaming Shores ATP, the Short-Term Active Transportation Network represents the key priorities for implementation. Developed to:

- Take advantage of planned capital works, such as the resurfacing of Rorke Ave / King Street in 2022
- Provide a complete and connected network of cycling facilities within the urban areas of Temiskaming Shores by the end of 2027 and;
- Connect the existing STATO Trail to key destinations like commercial areas, schools, transit services and employment areas;

The Short-Term Network prioritizes low-cost, high impact elements of the Active Transportation Network to help to build a stronger culture of active transportation within Temiskaming Shores. A summary of these priorities is included below in **Table 19**.

Table 19 | Summary of Priority Projects

Corridor	Proposed Facility Type and notes
Golf Course Road / Drive in Theatre Road	Traffic calming measures on Golf Course Road to reduce vehicle speeds, multipurpose paved shoulders of Drive In Theatre Road
Connection to St. Michel School at north end of Laurette Drive	Improved trail (asphalt, 3m wide)
Armstrong Street Bridge (Sharpe to Elm)	Bidirectional separated bike lanes on east side of the bridge
Niven Street North	Signed route
Dymond Avenue	Sharrows and traffic calming
Church Street	Sharrows and traffic calming
Sharpe Street from Armstrong Street to Wellington Street N	Sharrows and traffic calming
Paget Street N from Dymond Avenue to Spruce Avenue	Sharrows and traffic calming
Spruce Avenue from Paget Street N to Wellington Street N	Sharrows and traffic calming
Whitewood Avenue from Bedard Drive to Riverside Drive	Buffered / parking protected bike lanes

Corridor	Proposed Facility Type and notes
Rokeby Street from Whitewood Avenue to Farah Avenue	Signed route
Farah Avenue from Rokeby Street to Paget Street S	Signed Route
Cedar Avenue from Paget Street S to May Street S	Signed route
Wellington Street S from Cedar Avenue to Waterfront Boardwalk Trail	Signed route
Lakeshore Road N from Beach Boulevard to Whitewood Avenue	Buffered bike lanes or bidirectional separated facility on east side of the road
King Street / Rorke Street / Rorke Avenue corridor from southern City limits to Probyn Street	Convert entire corridor to single lane conditions with turning lanes where necessary – reallocate additional space for paved shoulders. Buffered paved shoulders where width permits, paved shoulders where right of way is more constrained and buffered bike lanes from Morissette Drive to Main – signed route north of Main.
Probyn Street from Rorke Avenue to Latchford Street	Signed Route
Latchford Street from Probyn Street to Lakeshore Road	Signed route
Main Street from Niven Street South to the Waterfront	Bike lanes from Niven to Rorke, Buffered / parking protected bike lanes from Main to Ferguson, traffic calming and signed route from Ferguson to waterfront
Ferguson Avenue from Amwell Street to Browning Street	Signed route with traffic calming measures

5.4 COSTING ESTIMATES

Implementing the proposed active transportation network will require funds and resources from the City and its partners. Annual funding for construction, maintenance, operation and programming should be identified in the annual budgeting process to strategically implement the active transportation network over time. The City should seek additional funding sources, such as from the Provincial or Federal government, to maximize budget efficiencies and coordination with other major projects.

High-level costing has been prepared for the proposed active transportation network. This costing is based on a set of unit prices (included as **Appendix A**) that are average rates that reflect best practices from comparable municipalities. It is recognized that the level of effort will vary on a project-by-project basis and that the price of materials will vary over time. Certain projects could require additional work and further studies as they are considered for implementation. As part of the ATP, a 15% contingency and 10% design and approvals cost have been assumed for budgeting purposes.

Table 20 presents the estimated cost to implement the active transportation network, organized by facility type and by phase. For the focus of short-term priorities, the estimated cost to implement is approximately $1.2 million over the next five years.

Table 20 | Summary of Estimated Costs by Facility Type

Facility Type	Short-Term		Long-Term		Total	
	Length (KM)	Estimated Cost	Length (KM)	Estimated Cost	Length (KM)	Estimated Cost
Off-Road Multi-Use Trail	0.1	$23,595	5.5	$2,505,503	5.6	$2,529,098
In-Boulevard Multi-Use Path	0.0	$ -	1.6	$739,214	1.6	$739,214
Buffered Bike Lane	3.3	$149,292	0.4	$32,794	3.7	$182,086
Buffered Bike Lane or Two-Way On-Road	1.4	$110,038	0.0	$ -	1.4	$110,038
Bike Lane	0.4	$14,574	0.0	$ -	0.4	$14,574
Buffered Paved Shoulders	3.9	$227,912	2.7	$995,516	6.6	$1,223,428
Paved Shoulder	2.0	$416,305	10.3	$2,764,183	12.3	$3,180,488
Sharrows Markings	1.1	$15,813	0.0	$ -	1.1	$15,813
Signed Route	3.1	$4,711	4.8	$7,222	7.9	$11,933
Candidate Locations for Pilot Projects	0.2	$45,016	0.0	$ -	0.2	$45,016
Candidate Locations for Traffic Calming Measures	3.6	$51,796	0.0	$ -	3.6	$51,796
Pedestrian Bridge	0.0	$ -	0.1	$1,950,000	0.1	$1,950,000
Sidewalks	0.0	$ -	14.4	$5,389,125	14.4	$5,389,125
Crossing Enhancement	-	$123,000	-	$230,000	-	$353,000
Total	**19.1**	**$1,182,052**	**39.8**	**$14,613,557**	**58.9**	**$15,795,609**

Detailed costing information is contained in **Appendix A**. It is recommended that this appendix be used as a tool by City Staff to track the progress of implementation of the network and to inform future budgeting and decision making. The intent of these estimated costs are to guide decision making, such as capital planning. The phasing and costing are not intended to be prescriptive. As part of annual budgeting processes and to supplement active transportation infrastructure in Temiskaming Shores, it is recommended that the City also consider allocating funding to support the delivery of outreach initiatives proposed in the programming chapter of the ATP.

5.4.1 SIDEWALK FUNDING

As identified above, the construction of new sidewalks to complete Temiskaming Shores' network of pedestrian facilities is the single largest expense identified within the ATP. The gaps in the City's sidewalk network reduce accessibility and constrain the mobility of some of the City's most vulnerable road users, including children, seniors and people with disabilities. It is imperative that the City take steps to provide a comprehensive network of well-maintained sidewalks throughout the community to make walking and wheeling easier, safer and more convenient. It is recommended that the City create an annual capital budget allocation to complete the sidewalk network over time. The City's sidewalk deficit is the result of many years of capital budget prioritization and is not likely to be solved in the short term. By allocating a consistent budget to sidewalk improvements each year, the City will incrementally improve its connectivity, slowly resulting in a network that connects all residents to their destinations.

5.5 PARTNERSHIPS

Implementation of the ATP will require various partnerships from several groups. Successful implementation will rely on City staff working with other levels of government and stakeholders to build, maintain and market active transportation assets to achieve the Plan's vision.

The City has a number of partners that it can rely on to support implementing the plan. With a strong active transportation community and many engaged stakeholders, the City is well positioned to use this plan to create new partnerships to build a stronger culture of active transportation. As the City's culture of active transportation grows, the City and its partners should focus efforts on marketing the City as an active transportation hub within Northern Ontario. The unique balance between access to natural landscapes and access to urban amenities is a significant competitive advantage for Temiskaming Shores. Highlighting the City's investments in active transportation can highlight its focus on providing a high quality of life to residents, and a great visitor experience to tourists. By leveraging these unique assets, the City is well positioned to be an active tourism leader in Ontario.

The City is also uniquely positioned in that Temiskaming Transit provides a well-utilized transportation service that can serve as the foundation for a more multi-modal future for the City. Temiskaming Transit has the opportunity to enhance the overall active transportation network by providing bicycle parking and benches at bus stop locations, serving the needs of pedestrians and cyclists and creating more multi-modal travel. By expanding access and enhancing comfort for users who walk or bike to connect to transit, the service also expands its own potential customer base, helping to shift the transportation paradigm within Temiskaming Shores. These partnerships would not only help to implement the ATP, but also support first-mile, last-mile travel.

A comprehensive table of proposed partners and their anticipated role is presented in **Table 21**. This list is not exhaustive and there could be new partnerships that present themselves in the future. The City should leverage any future opportunities for additional partners to support implementation of the ATP.

Table 21 | Proposed Partners and Roles

Potential Partners	Anticipated Roles							
	Planning	Design	Policies	Construction	Maintenance	Enforcement	Education	Promotion
City of Temiskaming Shores Staff (Recreation, Public Works, Transit, Planning)	●	●	●	●	●		●	●
Temiskaming Shores Active Transportation Advisory Committee	●	●			●		●	●
Temiskaming Shores Accessibility Advisory Committee	●	●			●		●	●
New Liskeard BIA and Local Businesses								●
Temiskaming Shores and Area Chamber of Commerce								●
Local organizations and advocacy groups							●	●
Ontario Provincial Police (OPP)						●	●	
Timiskaming Health Unit			●				●	●
Provincial Stakeholders	●	●	●				●	●

5.6 FUNDING OPTIONS

A review of internal and external funding options was conducted to identify different options available. The City is encouraged to monitor available funding opportunities within and external to the City, and to utilize the information contained within this plan to support funding applications. The following is a list of potential external funding sources that could be explored; however, they are subject to change and should be reviewed again prior to applications. It is important for the City to seek a diverse range of funding sources for the various initiatives and programs highlighted in this plan and external sources are an effective way to reduce the City's costs while being an opportunity to develop new partnerships. Listed below in **Table 22** are some suggested funding opportunities the City should pursue to support the ATP.

Table 22 | Potential Funding Opportunities

Funding opportunities	Additional details
Federal Active Transportation Fund	For additional details regarding the Active Transportation Fund refer to: https://www.infrastructure.gc.ca/trans/active-actif-eng.html
Canada Community-Building Fund / Provincial Gas Tax	For the federal Canada Community-Building Fund program please refer to: https://www.infrastructure.gc.ca/plan/gtf-fte-eng.html For the provincial program refer to: http://www.mto.gov.on.ca/english/service-commitment/gas-tax-program.shtml
Federation of Canadian Municipalities Green Municipal Fund	For additional details regarding the Green Municipal Fund and potential funding alternatives refer to: https://fcm.ca/home/programs/green-municipal-fund.htm
Federal and Provincial Infrastructure / Stimulus Programs	For Federal Government infrastructure stimulus fund details refer to: https://www.canada.ca/en/office-infrastructure.html For Provincial Government infrastructure stimulus fund details refer to: https://www.ontario.ca/page/ministry-infrastructure
Ontario Trillium Foundation	For details regarding potential funding alternatives refer to: https://otf.ca/
Ontario Rural Economic Development Program	For details refer to: http://www.grants.gov.on.ca/GrantsPortal/en/OntarioGrants/GrantOpportunities/PRDR006918
Ontario Sport and Recreation Communities Fund	As part of the Ontario Sport and Recreation Communities Fund: https://www.ontario.ca/page/rural-economic-development-program
Tourism Economic Development and Recovery Fund	For additional details regarding the Tourism Development fund refer to: https://www.ontario.ca/page/available-funding-opportunities-ontario-government#section-26
Service Club Support	Lions, Rotary and Optimist clubs who often assist with highly visible projects at the community level.
Corporate Environmental Funds (e.g. Shell, TD, MEC, etc.)	For example refer to: https://www.shell.ca/en_ca/sustainability/communities/funding-guidelines-process.html for Shell Canada's Social Investment Program or https://www.td.com/corporate-responsibility/fef-grant.jsp for TD's Friends of the Environment Foundation Grant
Private Citizen Donation / Bequeaths	Can also include tax receipts for donors where appropriate.

5.7 SUPPORTING IMPLEMENTATION

Beyond phasing and costing, there are several factors which can shape how active transportation gets rolled out from the planning stages through to implementation and operations.

5.7.1 POLICY CONSIDERATIONS

Policies are the framework to create top-down change in a municipality. The following are a set of policy considerations which can help facilitate change towards supportive active transportation planning and design in Temiskaming Shores.

PAVED SHOULDERS ON RURAL ROADS

The preferred active transportation network includes proposed signed routes on rural roads where there is existing demand for cycling, but the current road conditions (gravel surface) cannot accommodate the implementation of paved shoulders. Peters Road is the primary location where this situation occurs. Due to the current conditions, the road needs to be resurfaced to asphalt before it can be marked as a signed route. As a result, the phase for this route is long term. In other locations, most notably Radley Hill Road and Stephenson Road, paved shoulders are recommended for implementation with capital construction.

Application of signed bike routes on these routes is considered appropriate based on the current traffic volumes and speed thresholds outlined in the updated OTM Book 18. To improve safety for all road users and accommodate for additional traffic volumes in the future, however, it is recommended that when these roads are next scheduled in the City's Capital Budget for reconstruction / rehabilitation, the roadway platform should be widened, allowing the implementation of paved shoulders on both sides of the road (with a desired width of 1.5 metres) to support and provide a designated cycling facility. This would provide greater comfort and encourage more active transportation usage in rural areas. Paved shoulders can also benefit pedestrians in rural areas – as per the Highway Traffic Act, people are permitted to walk in a roadway shoulder facing the direction of oncoming traffic. The installation of paved shoulders has benefits to safety for all users, while also reducing maintenance costs and improving the lifespan of the roadways. In many cases, the long-term costs associated with implementing paved shoulders are offset by these asset management savings, making paved shoulders an investment that improves safety, demonstrates a commitment to active transportation and saves the community money in the long run.

From a municipal risk management perspective, implementing the green Bicycle Route Marker sign (on roads considered appropriate for such application) or the yellow Share the Road warning sign on roads where paved shoulders have not yet been implemented can also demonstrate the City's awareness that people are already biking on the road.

SPEED LIMIT EVALUATION AND REDUCTIONS

Speed differentials between people driving and people using active transportation are a key factor in determining how comfortable an active transportation facility is perceived by users to be. On corridors where active transportation facilities are being proposed, the City should consider speed limit reductions (and reductions in the design speed of those corridors) to improve safety for all users along those routes.

While Lakeshore Road is the highest profile corridor that should be considered for a reduction in speed limit (recommended for 50-60km/h to prioritize active transportation and encourage people driving to use Highway 11), other corridors where shared facilities are being recommended such as Niven Street,

Dymond Avenue, Farah Avenue, Cedar Avenue and Latchford Street could also be considered for speed limit reductions to improve conditions for active transportation.

NEW DEVELOPMENT AREAS

New development areas should be reviewed to identify opportunities to connect the future community to the active transportation network, particularly off-road trails within the City. This will require identifying conceptual trail linkages to the development community and ensuring their implementation at the time of development.

It is imperative that the City work with the development community to ensure that active transportation facilities and amenities are incorporated in new developments proactively and that the communities are designed in a manner than encourages safe and accessible active travel. The City should consider requiring sidewalks on one side of all new residential streets and should require sidewalks on both sides of new and reconstructed collector and arterial roads to improve the pedestrian environment within the City.

ZONING BY-LAW

The City is recommended to strengthen language supporting active transportation in the current zoning by-law. This can be done when a new zoning by-law is developed, or as part of a municipally initiated zoning by-law amendment(s). An amendment should focus on enhancing active transportation amenities in private developments, such as increasing the number of bicycle parking spaces as part of residential, commercial, and institutional developments, as well as building forms that accommodate the awnings and other covered-walkway structures that protect pedestrians from the elements. Modifications to the zoning by-law, like the two examples noted above, have the ability to incorporate design elements into new developments over time and create a public realm that encourages and supports active travel.

NEW MOBILITY IMPLICATIONS

The City's existing by-laws can be enhanced to clarify cycling operations and specifically define and provide direction on the use of electric bikes, electric scooters and power assisted bicycles. In 2020, MTO launched a five-year e-scooter pilot program allowing municipalities to pass by-laws to determine where e-scooters can operate. As part of this initiative, MTO has addressed legal definitions and operational concerns that should be reviewed prior to establishing or amending a by-law. The City could review existing by-laws and amend where appropriate to provide more clear provisions regarding permitted and prohibited uses for electric bikes, electric scooters and power assisted bicycles. Consideration could also be given to installing publicly accessible charging outlets for the charging of e-bikes and e-scooters within the City.

5.8 OPERATIONS AND MAINTENANCE

A key consideration when implementing the ATP is the operations and maintenance of active transportation routes and the asset management of infrastructure. Regular and appropriate maintenance of active transportation facilities can help protect the City's capital investments by maintaining the lifespan of infrastructure.

As the active transportation network expands and best practices emerge, consideration should be given to adapting maintenance practices and the level of service to address new facilities and standards such as the Province's Minimum Maintenance Standards (MMS) for Municipal Highways (O.Reg. 239/02). The MMS outlines various elements of road maintenance and operations including the frequency of road inspections, weather monitoring, ice formation on roadways, snow accumulation and sidewalk trip ledges. The MMS are non-mandatory guidelines but should be applied unless a municipality has established their own Council-approved level of service maintenance standards. If a municipality develops their own standards, it is still recommended to align with the current MMS.

Maintenance practices for active transportation facilities can include:

- Sweeping;
- Surface repairs;
- Pavement markings and signage;
- Vegetation management;
- Snow clearance / ice control; and
- Drainage improvements and drainage grates.

Clear guidance on asset management is provided in the City's Assessment Management Plan. The plan outlines level of services standards, asset management strategies and actions for trails, sidewalks and roads. It is recommended that as the City builds out their active transportation network, that the strategies outlined in the Asset Management Plan and related studies such as the Roads Condition Study and Sidewalk Condition Study, be applied.

Table 23 outlines asset management assumptions and typical service life for various elements of an active transportation network. This information is based on best practices outlined in OTM Book 18; however, it is recommended that City review this information and consider the various strategies to manage their active transportation network.

Table 23 | Asset Management Strategies Source - OTM Book 18 Update

Type	Useful Life	Asset Management Strategies
Asphalt bikeway	25 years	– **Minor repairs** – **Resurfacing** – **Rehabilitation** – **Full-depth replacement**
Concrete bikeway	50 years	– **Minor repairs** – **Replace deteriorating segments** – **Full replacement**
Bridge (active transportation or motor vehicle)	25–75 years	– **Bridge repairs** – **Minor rehabilitation** – **Full replacement**
Culvert	25–50 years	– **Culvert repair** – **Minor rehabilitation** – **Full replacement**
Painted Line Markings and Symbols	1–2 years	– **Refresh annually or depending on wear**
Durable Line Markings, Symbols and Green Surface Treatments	3–7 years	– **Depends on type, weather conditions, amount of wear, preparation of surface during application**
Signage	20 years	– **Replace damaged or faded signs**
Physical separation (bollards, curbs, planters, etc.)	**Until damaged**	– **Repair or replace damaged or missing bollards and other separators**

5.9 WINTER MAINTENANCE

Currently, the City of Temiskaming Shores provides snow clearing on its sidewalks but does not provide any maintenance on its cycling facilities. Segments of the STATO Trail, particularly those along Lakeshore Road, are removed during the winter to provide for easier winter maintenance of the adjacent roadway surface.

As the City moves forward with additional investments in active transportation, it is recommended that winter maintenance policies be adopted to ensure that priority cycling facilities remain open and accessible all year round. A growing number of communities in Ontario have identified **priority winter cycling networks** which receive enhanced snow clearing to ensure that those routes are clear and passable, mostly aiming to achieve a comparable level of service to that which is provided on arterial roadways for automobiles. A Priority Winter Cycling Network provides a more predictable, safer route for people on bikes, providing them with the sense of confidence that their route will be clear and passable. By clearly identifying the priority routes – which should be comprised of a connected grid of high-comfort facilities that connect to the City's key destinations – The City helps to set clear expectations among people on bikes. The Priority Winter Cycling Network should start off small, potentially as a 2-year pilot project, to see what types of additional staffing resources and additional snow clearing equipment may be required. The pilot will also give the community the opportunity to experience winter maintained cycling routes and, when coupled with some of the programming recommendations contained in Chapter 4, may help to grow the City's winter cycling culture. As the pilot continues, the City can evaluate ridership and monitor the growth of winter cycling, helping to determine whether the Priority Winter Cycling Network should be expanded, maintained or discontinued in the future.

5.10 MONITORING AND REPORTING

A monitoring plan is an important component post-implementation to evaluate the success of a route, and to inform smarter investments through data-driven measures. Research indicates that meaningful performance measures can help to prioritize future projects and appropriately allocate resources. The following approaches are recommended to be explored by City Staff in further detail, for inclusion into the on-going workplans of monitoring for maintenance and operations staff.

5.10.1 MONITORING OF ACTIVE TRANSPORTATION ASSETS

As part of the successful implementation of this plan, it is recommended that supplementary monitoring efforts be undertaken by City staff to gain a better understanding of the active transportation network and how it's being used. Similar to how City staff monitor the road network for deficiencies such as potholes and broken streetlights in need of repair, bike lanes and trails also require monitoring to ensure issues are promptly addressed. Doing so ensures that active transportation facilities remain in a state of good repair and can continue to accommodate the needs of people using it.

Beyond the scope of this ATP, but raised by multiple stakeholders and members of the public during consultation, is the need for the City to develop a comprehensive inventory of the City's existing sidewalks. The poor condition of the City's sidewalks were identified as one of the key deficiencies in the City's existing efforts to promote and support active transportation, and should be remedied as new infrastructure investments are contemplated. Consider developing a sidewalk assessment to identify

priority areas for improvement. An example sidewalk assessment from a comparable municipality to Temiskaming Shores can be found here: Microsoft Word - SCA Report - Innisfail.docx (civicweb.net)

5.10.2 UNDERTAKE SURVEY OF RESIDENTS

Another approach to monitoring the overall active transportation network is to conduct a survey of Temiskaming Shores residents on a regular basis. Such surveys could be carried out on an annual or bi-annual basis and ask residents about what they like and dislike about the network. The results can then be used to inform short-term actionable items that respond to the immediate needs and requests of residents, contingent on the scale and scope of the project. Surveying of residents ensures regular dialogue between City Staff and the users of the network themselves.

5.10.3 PROVISION OF PERMANENT DATA COLLECTION TOOL

Permanent automated data collection tools can allow City Staff to effectively monitor the active transportation network in real time and collect a significant amount of data with which to inform decision making. For the purpose of this plan, the two forms of permanent data collection include automated trail counters and intersection cameras that monitor the movement of all modes of transportation.

Automated trail counters are pieces of monitoring infrastructure that count the number of pedestrians and cyclists on an off-road trail. City staff would be able to retrieve data from the automatic trail counter to review pedestrian and cyclist data over the long-term and assess a facility's use. Alternatively, LTE and Wi-Fi enabled traffic cameras at select intersections within the City can monitor the number of pedestrians and cyclists using on-road infrastructure in real time. Both pieces of monitoring equipment will allow for better informed decision making through real-time data.

5.10.4 REPORT ON IMPLEMENTATION AND PROGRESS

Given the short timelines for implementation of a significant portion of the City's ATP, it is recommended that Temiskaming Shores issue annual reports detailing their progress towards achieving the goals and objectives of this Plan for the first five years of its implementation. These annual reports can highlight the new infrastructure investments that have been brought online, the ways that new programs and partnerships are reaching more residents in the community and the overall trends in transportation behaviour as the City's network of active transportation infrastructure becomes more robust. These reports would also be a good place to highlight the results of pilot projects such as the winter maintenance pilot and the pilot project protected bike lanes across the Wabi River Bridge, as well as highlighting any improvements that the City is making to its network of sidewalks.

This report can provide a powerful accountability tool for the City – it helps to build trust and awareness about how the ATP is being implemented, and what the results of the associated investments are. The report will provide an annual snapshot of the state of active transportation in Temiskaming Shores, helping to create community excitement as the culture of active transportation grows, and serving as a marketing tool to highlight how the City is playing a leadership role in becoming an active transportation leader in Northern Ontario.

5.11 NEXT STEPS AND RECOMMENDATIONS

The Active Transportation Plan provides the City of Temiskaming Shores with a roadmap to become one of Ontario's leading municipalities with regards to active transportation. It provides the City with a short-term, achievable path towards a complete network of walking and cycling facilities in its urban areas, all while building upon the strong partnerships that already exist to support the culture of active transportation in the City. This plan builds upon the existing momentum within the City – the investments in the STATO trail, the partnerships that deliver new programs every year and the community members who are increasingly taking to walking, cycling, and wheeling around their City. It charts a path for the City to reimagine its relationship with its public spaces, turning streets into places where increased levels of active transportation contribute to the City's vibrancy and vitality as it emerges from the COVID-19 pandemic. To help move this plan from a vision to reality, a series of recommendations have been developed to guide City leadership in moving forward with implementing this plan, in partnership with internal and external stakeholders. These recommendations include implementing the various policies, programs, and procedures that support both the implementation of physical infrastructure and the development of social infrastructure to support active transportation in Temiskaming Shores.

At its core, this Plan is a guide for the City to realize many of its broader policy goals through increased support for active transportation. Whether being done in support of economic development, quality of life, attracting tourism dollars, building a more equitable community, or ensuring that the City is a leader in environmental stewardship, investments in active transportation pay off along multiple axes that are priorities for the City's future. The fact that this Plan has been developed to align with those goals and has been guided by strong partnerships with the City's existing stakeholders helps to ensure that this Plan will be one where collaborative support will move it from vision to reality in the near future.

Moving forward, the City is encouraged to work in close partnership with key stakeholders to both implement new programs, policies, and infrastructure, as well as to promote all that Temiskaming Shores has to offer, well beyond its borders. The following table provides a summary of 18 core recommendations that City staff are encouraged to pursue as part of the broader implementation of this plan.

1. Incorporate the proposed active transportation network illustrated in Maps 3a, 3b, 3c, 4a and 4b as a Schedule in the City's Official Plan when next updated.
2. Reference should be made to OTM Book 18: Cycling Facilities (2021) to inform and guide the design and implementation of cycling and in-boulevard facilities.
3. Reference should be made to OTM Book 15: Pedestrian Crossings to inform and guide the design and implementation of pedestrian crossing treatments.
4. The City should continue to identify opportunities to implement active transportation routes / facilities in conjunction with capital infrastructure projects to achieve economies of scale and cost savings.
5. As part of the annual capital budget review process, City staff should use the ATP to inform prioritization and implementation of active transportation infrastructure.
6. As part of scheduled roadway projects and Capital budget forecasting, the City should allocate funding to construct the Short-Term Active Transportation Network (See Maps 5b and 5c) by the end of the 2027 construction season.
7. When capital reconstruction projects are scheduled for the downtown areas of Haileybury and New Liskeard, priority should be given to expanding spaces for walking, cycling and amenities by narrowing vehicle lanes and parking facilities.
8. The City should implement a 2-way protected cycle track over the Wabi River Bridge as a pilot project to close a key gap in the existing STATO Trail
9. The City should continue to explore external funding sources and partnerships to help fund implementation of the ATP.
10. The City should adopt the Trails design and amenities standards presented in this plan to improve access to the trails at Devil's Rock and Pete's Dam Parks
11. Speed limit reductions and traffic calming design measures should be implemented on roads proposed for signed bike route in the urban / built-up areas of Temiskaming Shores as well as some of the roads adjacent to the STATO Trail, especially Lakeshore Road.
12. The City should expand the mandate of the existing BFC Committee to serve as an Active Transportation Advisory Committee, considering elements of the pedestrian experience as well as the cycling experience in Temiskaming Shores
13. The City should undertake a sidewalk conditions analysis and should establish a consistent annual capital budget for the replacement and repair of existing sidewalks as well as the installation of new sidewalks in priority locations (see maps 4a and 4b)
14. The City should establish an Active Transportation Coordinator to deliver and champion the recommended outreach initiatives identified in Chapter 4.
15. The City should allocate the necessary funding to deliver the programs listed in Chapter 4 on an ongoing basis to help build a stronger culture of active transportation in Temiskaming Shores.
16. As part of scheduled roadway projects in the City's Capital Budget, consideration should be given to widening the roadway platform (where possible / feasible) and implementing paved shoulders on both sides of the road to support and provide a designated cycling facility.
17. The City should review and revise its policy regime to require sidewalks and cycling facilities in all new residential developments and to require bike parking and other end of trip facilities within the City's Zoning bylaw.
18. The City should undertake a Winter Maintenance Pilot Project to evaluate the costs and efficacy of providing winter maintenance to select cycling routes, particularly those that connect to popular destinations within the community.

Active Transportation Plan

Appendix A:
Detailed Costing Breakdown

Dymond
Haileybury
New Liskeard
City of • Ville de
Temiskaming Shores

City of Temiskaming Shores
December 2021

Table 1 - Active Transportation Unit Costs

This table provides an overview of the estimated unit costs for active transportation and cycling facilities, structures and crossings and other elements of an active transportation / cycling network. All unit prices exclude tax, contingency, design and approvals costs.

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
1.0 GENERAL ACTIVE TRANSPORTATION FACILITIES					
Shared Lanes / Paved Shoulders					
1.1	Signed Bike Route in Urban or Rural Area	linear KM	$1,000 to $1,200	$1,200	Price for both sides of the road, assumes one sign a minimum of every 500 metres in the direction of travel. Price assumes that signs will be mounted on an existing post. Price includes: - $300 per sign x 4 signs (2 signs on each side of the road)
1.3	Signed Bike Route with Sharrow Lane Markings *Intended to supplement a signed bike route in specific locations. Not intended to be a stand-alone facility type.*	linear KM	$11,600	$11,600	Price for both sides of the road, includes route signs every 500 metres and sharrow stencils every 75 metres as per OTM Book 18 guidelines. Price includes: - $300 per sign x 4 signs (2 signs on each side of the road) - $400 per stencil marking x 26 (13 stencils on each side of the road)
1.4	Signed Route with Edgeline	linear KM	$12,200	$12,200	Price for both sides of the road, includes signs and painted edgeline (100mm solid white line). Price includes - $300 per sign x 4 signs (2 signs on each side of the road) - $5.5 per metre for painted solid white line
1.5	Signed Bike Route with Paved Shoulder in conjunction with existing road reconstruction / resurfacing	linear KM	$115,000 to $215,000	$215,000	1.5 metre paved shoulder on both sides of the road. Assumes cycling project pays for additional granular base, asphalt and painted line. Price may vary from $115,000 to $215,000 depending on work needed to improve platform. Price includes: - $300 per sign x 4 signs (2 signs on each side of the road) - $5.5 per metre for painted solid white line (both sides of the road) Price may be higher if road platform needs to be widened.
1.6	Signed Bike Route with Buffered Paved Shoulder in conjunction with existing road reconstruction / resurfacing project	linear KM	$275,000 to $340,000	$300,000	1.5 metre paved shoulder + 0.5-1.0 metre paved buffer on both sides of the road. Assumes cycling project pays for additional granular base, asphalt, painted edge lines and signs (buffer zone framed by white edgelines). Price may vary from $275,000 to $340,000. Price includes: - $300 per sign x 4 signs (2 signs on each side of the road) - $5.5 per metre for painted solid white line (both sides of the road)
1.7	Addition of Rumble Strip to Existing Buffered Paved Shoulder (rural)	linear KM	$12,000		Price for both sides. Buffer $6 / m.
1.8	Granular Shoulder Sealing	linear KM	$18,000		Both sides spray emulsion applied to harden the granular shoulder. This will reduce gravel on the paved portion of the shoulder and significantly reduce shoulder maintenance. Use $9 / m.
1.9	Upgrade Granular Surface Back Road to Chip Seal Surface	linear KM	$56,000		Price includes pulverizing existing surface with double treatment ($6 / m³ or tar and chip ($2 /m²) at 7m wide.
Conventional and Separated Bike Lanes					
1.1	Conventional 1.5m-1.8m Bicycle Lanes by Adding Bike Lane Markings and Signs	linear KM	$29,000	$29,000	Price for both sides of the road, includes signs, stencils and edge line. The price assumes: - $11,000 for painted lane line ($5.5 per metre multiply 2 for both sides of the road) - $10,400 for painted bike symbols (assumes $250 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - $2,500 for bike lane signs (assumes $350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - $3,900 for 'No Parking' signs (assumes $150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used.

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.1	Conventional 1.5m-1.8m Bicycle Lanes through Lane Conversion from 4 lanes to 3 lanes	linear KM	$53,000		Price for both sides. Includes grinding of existing pavement, markings, signs, painted markings. Assumes road is not be surfacing. The price assumes: - $11,000 for painted lane line ($5.5 per metre multiply 2 for both sides of the road) - $10,400 for painted bike symbols (assumes $400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - $2,500 for bike lane signs (assumes $350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - $3,900 for 'No Parking' signs (assumes $150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used. - $6 to $8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway. Remove soda-blasting cost component if the road is being resurfaced. The cost for resurfacing to be part of resurfacing project.
1.1	Conventional 1.5m-1.8m Bicycle Lanes in Conjunction with a New Road, or Road Reconstruction / Widening Project	linear KM	$390,000		Price for 1.5m bike lanes on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes - $14,000 for catch basins and leads ($350 per lead x 40 catch basins per linear km) - $360,000 for asphalt and sub-base ($55/m2 = 120 x 1.5m BL x 1000 x 2) - $16,000 for signs, stencils and edge line The roadway project funds all other improvements.
1.1	Conventional 1.5m-1.8m Bicycle Lanes that require a road widening /reconstruction	linear KM	$700,000		Price for both sides of the road, includes the cost for excavation, adjust catch basins, lead extensions, new curbs/driveway ramps, asphalt and sub-base, painted markings and signs. All costs associated with widening or reconstructing the road for the purposes of adding bike facilities is born by the bike project i.e. no economies of scale of adding a bike facility in conjunction with a planned
1.1	Buffered Bicycle Lane with Hatched Pavement Markings - No Road Construction / Widening or Road Diet required	linear KM	$49,000		Price for 1.5m bike lanes with 1m hatched buffer. The price assumes: - $30,000 for painted lines ($6 x 5000 metres of line paint) - $1,000 for hatching paint (1000 metres) - $10,400 for painted bike symbols (assumes $400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - $2,500 for bike lane signs (assumes $350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - $3,900 for 'No Parking' signs (assumes $150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used
1.15	Buffered Bicycle Lane with Hatched Pavement Markings - No Road Construction / Widening or Road Diet required Includes pre-cast curbs and flexible bollards in the buffer	linear km	$165,000		Price for 1.5m bike lanes with 1m hatched buffer (includes pre-cast curbs and flexible bollards in the buffer). The price assumes: - $30,000 for painted lines ($6 x 5000 metres of line paint) - $1,000 for hatching paint (1000 metres) - $10,400 for painted bike symbols (assumes $400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - $2,500 for bike lane signs (assumes $350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - $3,900 for 'No Parking' signs (assumes $150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used - $95,000 for pre-cast concrete curbs on both sides - Assume 70% of roadway to include physical delineation (700 metres per 1 linear km): 700 metres / 1.83m curb length = 382.5 pre-cast concrete curbs - 382.5 x $250 = $95,000 - Assume $125 each 1.83m long curb x 2 = $250 per linear metre of roadway (both sides) - $21,000 for flexible bollards - Assume 700m spacing as per pre-cast curb placement above x 2 (both sides of the road). - 700m x 2 (both sides of the road) = $1,400 - $1,400 x $150 (price per bollard) = $21,000

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.16	Buffered Bicycle Lane with Hatched Pavement Markings with Road Diet	linear KM	$65,000	$65,000	Price for 1.5m bike lanes with 1m hatched buffer. The price assumes: - $30,000 for painted lines ($6 x 5000 metres of line paint) - $1,000 for hatching paint ($1000 metres) - $10,400 for painted bike symbols (assumes $400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - $2,500 for bike lane signs (assumes $350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - $3,900 for 'No Parking' signs (assumes $150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used. - $6 to $8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway
1.17	Buffered Bicycle Lane with Hatched Pavement Markings - Assumes a Road Diet from a 4 Lane Cross-Section to a 2 Lane Cross-section with a two-way centre turn lane. Includes pre-cast curbs and flexible bollards in the buffer	linear km	$194,620	$194,620	Price for 1.5m bike lanes with 1m hatched buffer (includes pre-cast curbs and flexible bollards in the buffer). The price assumes: - $48,000 for painted lines ($6 x 8000 metres of line paint) - $1,000 for hatching paint (1000 metres) - $10,400 for painted bike symbols (assumes $400 per symbol, 13 symbols per linear km multiply by 2 for both side of the road) - $2,500 for bike lane signs (assumes $350 per sign and tab, 5 signs per linear km - spaced every 200 metres - multiply by 2 for both sides of the road) - $3,900 for 'No Parking' signs (assumes $150 per sign, 13 signs per linear km multiply by 2). Signs to be mounted on existing and new posts. Price depends on number of stencils and signs used - $95,000 for pre-cast concrete curbs on both sides - Assume 70% of roadway to include physical delineation (700 metres per 1 linear km): 700 metres / 1.83m curb length = 382.5 pre-cast concrete curbs - 382.5 x $250 = $95,000 - Assume $125 each 1.83m long curb x 2 = $250 per linear metre of roadway (both sides) - $21,000 for flexible bollards - Assume 700m spacing as per pre-cast curb placement above x 2 (both sides of the road). - 700m x 2 (both sides of the road) = $1,400 - $1,400 x $150 (price per bollard) = $21,000 - $6 to $8 per linear metre for lane line removal (soda blasting). Price varies on markings to be removed on a multi-lane roadway. Assume 1,660 metres of lane line removal for a 4 lane road: - 1000m of yellow line (centre line) per km (assume continuous line, no break at intersections) - 1 continuous dashed white line that separates 2 vehicles lanes (x2 for both sides of the road) - dashed white line: 3-3 skip pavement marking (3m long with 3m spacing) = 330m length x 2 for both sides of road = 660m
1.18	Buffered Bicycle Lane with Hatched Pavement Markings - Assumes New Road or Road Reconstruction/Widening already Planned	linear KM	$393,000		Price for 1.5m bike lanes + 0.5m hatched buffers on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - $14,000 for catch basins and leads ($350 per lead x 40 catch basins per linear km) - $360,000 for asphalt and sub-base ($55/m2 = 120 x 1.5m BL x 1000 x 2) - $19,000 for signs, stencils and edge line The roadway project funds all other improvements.
1.19	Buffered Bicycle Lane with Hatched Pavement Markings - Retrofit / No new road reconstruction or widening is planned	linear KM	$533,000		Price for 1.5m bike lanes + 0.5m hatched buffers on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - $14,000 for catch basins and leads ($350 per lead x 40 catch basins per linear km) - $360,000 for asphalt and sub-base ($55/m2 = 120 x 1.5m BL x 1000 x 2) - $19,000 for signs, stencils and edge line - $140,000 for removal and replacement of curb (140 / linear metre) The roadway project funds all other improvements.
1.20	Buffered Bicycle Lane with Flex Bollards - Assumes Road Reconstruction/Widening Already Planned	linear KM	$423,000		Price for 1.5m bike lanes + 0.5m hatched buffers + flexible bollards on both sides of the roadway (1.5m x 2 sides = 3.0m). The price assumes: - $14,000 for catch basins and leads ($350 per lead x 40 catch basins per linear km) - $360,000 for asphalt and sub-base ($55/m2 = 120 x 1.5m BL x 1000 x 2) - $19,000 for signs, stencils and edge line - $30,000 for flexible bollards ($150 per bollard, spaced every 10m) The roadway project funds all other improvements.

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Conventional and Separated Bike Lanes - CONT'D					
1.21	Buffered Bicycle Lane with Pre-Cast Barrier - Assumes New road or Road Reconstruction/Widening Already Planned	linear KM	$483,000		Price for 1.5m bike lanes + 0.5m hatched buffers + flexible bollards+ pre-cast and anchored curb delineators. The price assumes - $14,000 for catch basins and leads ($350 per lead x 40 catch basins per linear km) - $360,000 for asphalt and sub-base ($55/m2 = 120 x 1.5m BL x 1000 x 2) - $19,000 for signs, stencils and edge line - $30,000 for flexible bollards ($150 per bollard, spaced every 10m) - $50,000 - $60,000 pre-cast curb delineators ($250 / pre-case unit 2m length + $7.5 / pins and anchoring. Assumes 2m long x 2 = 200-250 per km depending on intersections and driveways) The roadway project funds all other improvements.
1.22	Supply and install surface mounted flexible post delineators	each	$100 to $150		Price depends on product, volume and supplier.
1.23	Standard precast concrete curb 178 mm high, 216 mm wide and 1.83 metre long	each	$250		Approximately $95,000 - $100,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 1.83 metres = 382.5 pre-cast concrete curbs - 382.5 x $250 = $95,000 Assume $125 each 1.83m long curb x 2 = $250 per linear metre of roadway (both sides).
1.24	Standard precast concrete curb 457 mm high, 457 mm wide and 3.05 metre long	each	$1,380		Approximately $315,000 - $320,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 3.05 metres = 229.5 pre-cast concrete curbs - 229.5 x $1,380 = $317,000
1.25	Standard precast concrete bullnose 457 mm high, 457 mm wide and 1.22 metre long	each	$970		Approximately $550,000 - $560,000 per 1 linear kilometre. Assumes 70% of roadway to include physical delineation (700 metres per 1 linear kilometre): - 700 metres / 1.22 metres = 573.8 pre-cast concrete curbs - 573.8 x $970 = $556,557
Cycle Tracks					
1.26	Uni-directional Cycle Tracks: Raised and Curb Separated - In conjunction with existing road reconstruction / resurfacing project	linear KM	$250,000 - $500,000		Both sides. Assumes cycle track will be implemented as part of road construction. Could include minor utility / lighting pole relocations. Other components such as bike signals, bike boxes etc. are project specific and will impact unit price.
1.27	Uni-directional Cycle Tracks: Raised and Curb Separated - Retrofit Existing Roadway	linear KM	$500,000 - $1,200,000		Both sides. Includes construction but excludes design and signal modifications. Form of cycle track and materials as well as related components such as bike signals, upgrade/modification of signal controllers, utility/lighting pole relocations, bike boxes etc. are project specific and will impact unit price
1.28	Two Way Cycle Track - Retrofit Existing Roadway	linear KM	$500,000 - $800,000		One side. Includes construction but excludes design and signal modifications. Form of cycle track and materials as well as related components such as bike signals, upgrade/modification of signal controllers, utility/lighting pole relocations, bike boxes etc. are project specific and will impact unit price

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
Active Transportation Paths and Multi-Use Trails					
1.29	Two Way Active Transportation Multi-use path within road right-of-way	linear KM	$275,000 - $375,000	$375,000	3.0m wide hard surface pathway (asphalt) within road right of way (no utility relocations). Price depends of scale / complexity of project and if existing sidewalk is being removed (i.e. crushing of existing sidewalk and compacting for trail base)
1.30	Concrete Splash Strip placed within road right-of-way between Active Transportation Multi-Use Path and Roadway	m²	$150		Colour Stamped Concrete
1.31	Hard Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in an Urban Setting (New)	linear KM	$300,000 - $400,000	$375,000	3.0m wide hard surface pathway (asphalt) within park setting (normal conditions) 90mm asphalt depth. Price depends of scale / complexity of project.
1.32	Hard Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Urban Setting (Upgrade existing granular surface)	linear KM	$150,000 - $225,000		Includes some new base work (25% approx.), half of the material excavated is removed from site. Price depends of scale / complexity of project.
1.33	Granular Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Urban Setting	linear KM	$150,000 - $165,000		3.0m wide, compacted stone dust surface normal site conditions. Price depends of scale / complexity of project.
1.34	Granular Surfaced Off-Road Multi-Use Trail Outside of Road Right-of-Way in Rural Setting	linear KM	$200,000		3.0m wide, compacted stone dust surface in complex site conditions (includes cost of clearing and grubbing). Price depends of scale / complexity of project.
1.35	Upgrade existing granular surface trail to meet 3.0m wide compacted granular trail standard	linear KM	$75,000 - $125,000		Includes some new base work (25% approx.) and an average of 20 regulatory signs per kilometre. Price depends of scale and existing trail conditions e.g. width, slope, location of trail, etc.
1.36	Off-Road Multi-Use Trail Outside of Road Right-of-Way on Abandoned Rail Bed	linear KM	$80,000 - $125,000		3.0m wide, compacted stone dust surface, includes signage along trail and gates at road crossings. Assumes ballast is still in place. Price depends of scale / complexity of project.
1.37	Granular Surfaced Multi-use Trail in a Woodland Setting	linear KM	$175,000		2.4m wide, compacted stone dust surface. Price depends of scale / complexity of project.
1.38	Major rough grading (for multi-use pathway)	m²	$8.00		Varies depending on a number of factors including site access, disposal location etc.
2.0 PEDESTRIAN FACILITIES					
2.1	Sidewalk	linear KM	$300,000	$300,000	Price for 1.5m concrete sidewalk. Include site prep., select utility relocation, minor drainage modifications / traffic control.
3.0 STRUCTURES AND CROSSINGS					
3.1	Pedestrian Bridge	each	$1,140,000 - $1,560,000	$1,560,000	Cost for two prefabricated pedestrian bridge structures excluding cost for studies, design and construction administration. This will require the construction of a pier within the river channel. A 'pony truss' or 'H-section' bridge style can span up to 55m and are the most economical design choice. For larger spans, a full 'box truss' is required and can span up to 80m.
3.2	Pedestrian Boardwalk (Light-Duty)	linear m	$1500 - $2500		Structure on footings, 3.0m wide with railings. Price depends of scale / complexity of project.
3.3	Self weathering steel truss pedestrian / cyclist bridge	linear m	$10,000		Price for 4.0m width bridge includes abutments
3.4	Feature Trail Bridge crossing over a valley land / highway	each	$2,500,000 - $4,500,000		Depends on location, length and complexity of crossing as well as architectural detail.
3.5	Metal stairs with hand railing and gutter to roll bicycle	each	$6,500		1.8m wide, galvanized steel (assumes 8ft between each landing).
3.6	Pathway Crossing of Private Entrance	each	$1500 - $2000		Adjustment of existing curb cuts to accommodate 3.0m multi-use pathway
3.7	Median Refuge	each	$20,000		Average price for basic refuge with curbs, no pedestrian signals
3.8	Mid-block Crossing	each	$150,000 - $180,000		Average price for new mid-block crossing
3.9	Stop signs and pavement markings for crossing	each		$6,000	Average price for stop sign and durable pavement markings per intersection
3.10	Normalize Intersection	each		$75,000	Close existing intersection to normalize as a standard 4 legged stop controlled itnersection
3.11	Move Existing School Crossing	each		$25,000	Average price for removing existing school crossing and repainting in a new location
3.12	Future Study for Local Intersection	each		$15,000	Average price for a design study for local intersections
3.13	Future Study for Provincial Intersection	each		$35,000	Average price for a design study for Provincial intersections (involving one or more Provincial roads)
3.14	Addition of Bollards to Enhance Crossing	each		$5,000	Average price for the addition of bollards per intersection or crossing
3.15	Intersection Signalization	each		$180,000	Full signalization of intersection with potential to add cycling facility and improvements
3.16	Intersection Pedestrian / Bike Signal	each	$80,000		Average price for intersection pedestrian signal. Assumes partial rebuild of intersection for bike signals i.e. realignment of ducts and poles
3.17	At grade railway crossing	each	$120,000		Flashing lights, motion sensing switch (C.N. estimate)
3.18	At grade railway crossing with gate	each	$300,000		Flashing lights, motion sensing switch and automatic gate (C.N. estimate)
3.19	Below grade railway crossing	each	$500,000 - $750,000		3.0m wide, unlit culvert style approx. 10 m long for single elevated railway track
3.20	Multi use subway under 4 lane road	each	$1,000,000 - $1,200,000		Guideline price only for basic 3.3 m wide, lit.
3.21	Retaining Wall	m²	$1,200		Face metre squared

ITEM	DESCRIPTION	UNIT	UNIT PRICE RANGE	PRICE USED	COMMENTS/ASSUMPTIONS
4.0 BARRIERS AND ACCESS CONTROL FOR MULTI-USE TRAILS OUTSIDE OF THE ROAD RIGHT-OF-WAY					
4.1	Lockable gate (2 per road crossing)	each	$4,000		Heavy duty gates (e.g. equestrian supported step over gate). Price for one side of road - 2 required per road crossing. Typically only required in rural settings or city boundary areas
4.2	Metal offset gates	each	$2,000		"P"-style park gate
4.3	Removable Bollard	each	$500 - $750		Basic style (e.g. 75mm diameter galvanized), with footing. Increase budget for decorative style bollards
4.4	Berming/boulders at road crossing	each	$1,200		Price for one side of road (2 required per road crossing)
4.5	Granular parking lot at staging area (15 car capacity-gravel)	each	$45,000		Basic granular surfaced parking area (i.e. 300mm granular B sub-base with 150mm granular A surface), with precast bumper curbs. Includes minor landscaping and site furnishings, such as garbage receptacles and bike racks.
4.6	Paige wire fencing	linear M	$60		1.5m height with peeled wood posts
4.7	Chain link fencing	linear M	$90 - $110		Galvanized, 1.5m height
5.0 SIGNAGE					
5.1	Regulatory and caution Signage (off-road pathway) on new metal post	each	$150 - $250		300mm x 300mm metal signboard c/w metal "u" channel post
5.2	Signboards for interpretive sign	each	$2,400		Does not include graphic design. Based on a 600mm x 900mm typical size and embedded polymer material, up to 40% less for aluminum or aluminum composite pane
5.3	Staging area kiosk	each	$2,000 - $10,000		Wide range provided. Price depends on design and materials selected. Does not include design and supply of signboards
5.4	Signboards for staging area kiosk sign	each	$1,500 - $2,000		Typical production cost, does not include graphic design (based on a 900mm x 1500mm typical size and embedded polymer material). Up to 40% less for aluminum or aluminum composite pane
5.5	Pathway directional sign	each	$350 - $500		Bollard / post (100mm x100mm marker), with graphics on all 4 sides
5.6	Pathway marker sign	each	$250		Bollard / post (100mm x100mm marker), graphics on one side only
5.7	Pathway marker sign	linear KM	$1,000		Price for both sides of the path, assumes one sign on average, per direction of travel every 0.5 km
5.8	Bike sign	each	$200		Price for one side of road.
6.0 BICYCLE PARKING INFRASTRUCTURE					
6.1	Bicycle rack (Post and Ring style)	each	$150 - $250		Holds 2 bicycles , price varies depending on manufacturer (includes installation).
6.2	Bicycle rack (U style)	each	$600		Holds 2 bicycles , price varies depending on manufacturer (includes installation).
6.3	Bicycle rack	each	$1,800		Holds 6 bicycles, price varies depending on manufacturer (includes installation).
6.4	Bicycle Locker	each	$3,000		Price varies depending on style and size. Does not include concrete mounting pad.
6.5	Bike Loop	each	$2,500		Price for installation including labour and equipment. Price also includes materials e.g. two channel detector for traffic cabinet, bike loop (wire and sealant), cable to traffic cabinet, handhole and conduit.
6.6	Bicycle Corral (one parking space with bollards)	each	$1,500 - $2,900		Price may vary from $1,500 (galvanized finish with the mad shield corrosion warranty) to $2,900 (stainless finish with the mad shield corrosion warranty) for one parking space.
7.0 LIGHTING AND UTILITIES					
7.1	Pathway Lighting	per 25 m	$5,000		Includes cabling, connection to power supply, transformers and fixtures.
7.2	Relocation of Light / Support Pole	each	$4,000		Adjustment of pole offset (distance between pole and roadway).
7.3	Relocation of Signal Pole / Utility Box	each	$8,000		Adjustment of pole offset (distance between pole and roadway).
8.0 PAVEMENT MARKINGS					
8.1	Sharrow Symbol	each	$400		Price for durable paint. Sharrow symbol with green pavement marking
8.2	Bike Symbol	each	$400		Price depends on volume
8.2	Line Painting	linear M	$6		Price for durable paint.
8.2	Removal of Line Painting	linear M	$3		N/A
9.0 OTHER					
9.1	Bike Box	each	$1,500		Price may vary depending on road cross-section (e.g. two lane roadway, four lane roadway, etc.). Price includes installing a bike box on the approach of an intersection using a bike stencil and durable e.g. green surface treatment ($250 / each). Price also include estimate to move stop-bar back to provide space for bike box.
9.2	Clearing and Grubbing	m²	$15		
9.3	Bench	each	$1,000 - $2,000		Price varies depending on style and size. Does not include footing/concrete mounting pad
9.4	Safety Railings / Rubrail	linear M	$300		1.4m height basic post and rail style
9.5	Small diameter culvert	each (6 m)	$1,200		Price range applies to 400mm to 600mm diameter PVC or CSP culverts for drainage below trail
9.6	Flexible Bollards	each	$110		Should be placed at 10m intervals where required. Cost depends on product type used.

Notes:

1. Unit Prices are for functional design purposes only, include installation but exclude contingency, design and approvals costs (unless noted) and reflect 2021 dollars, based on projects in southern Ontario.
2. Estimates do not include the cost of property acquisitions, signal modifications, utility relocations, major roadside drainage works or costs associated with site-specific projects such as bridges, railway crossings, retaining walls, and stairways, unless otherwise noted.
3. Assumes typical environmental conditions and topography.
4. Applicable taxes and permit fees are additional.

Table 2 - Proposed Crossing Enhancements

This table provides an overview of the estimated costs and phasing for the proposed crossing enhancements.

ID	Existing Crossing	Proposed Enhancement	Intersection	PHASE	Total Cost
C0	4 legged, stop controlled on North, East and South approach.	Add stop signs and pavement markings	Ferguson Avenue/Main Street	Short	$ 6,000
C1	4 legged, stop controlled on North, West and South approach. Channelized right turn on the South School crossing	Closing channelized intersection and normalizing it as a standard 4 legged stop controlled intersection	Rorke Avenue/Main Street	Short	$ 75,000
C2	4 legged, stop controlled on East and West School crossing just north of the intersection	Move school crossing for Ecole Saint Croix School to Rorke/Cecil	Cecil St/Rorke Avenue	Short	$ 25,000
C3	4 legged, stop controlled on East and West Steep coming down on Browning	Add stop signs and pavement markings	Browning Street/Ferguson Avenue	Short	$ 6,000
C4	3 legged, stop controlled on Hessle No pedestrian facility to cross coming off of the STATO Trail	Monitor current configuration of the raised crosswalk at the school Recommend for future detail design study in this intersection to improve safety and reduce conflicts	STATO Trail/Hessle Avenue	Long	$ 15,000
C5	4 legged, signalized intersection Angle and configuration difficult for cyclists to cross	Add bollards	Armstrong Street/Elm Avenue	Short	$ 5,000
C6	3 legged, stop controlled on Farah	Monitor for future traffic control	Lakeshore Road North/Farah Avenue	Long	-
C7	4 legged, stop controlled on East and West, channelized right turns	Recommend for active transportation consideration in future reconstruction of the road for improved safety for all users	Highway 11/Drive In Theatre Road	Long	$ 35,000
C8	3 legged, stop controlled on Grant No pedestrian facilities	Add stop signs and pavement markings	Drive In Theatre/Grant Drive	Short	$ 6,000
C9	3 legged, stop controlled on Radley Hill Road Steep hill coming off of Radley Hill	Signalized, potential to add cycling facility with improvements	Radley Hill Road/STATO Trail	Long	$ 180,000

Table 3 - Proposed Active Transportation Routes

This table provides a breakdown of the proposed routes, including length, phase and costing.

ID	Street	From	To	Facility	Phase	Length KM	Unit Cost	Segment Cost	Design Cost (10%)	Contingency Cost (15%)	Total Cost
1212	MAIN STREET	Rorke Avenue	Niven Street South	BL	Short	0.40	$ 29,000	$ 11,659	$ 1,166	$ 1,749	$ 14,574
12	RORKE AVENUE	Joyal Drive	Arnold Drive	BUFF BL	Short	0.08					
15	MAIN STREET	Ferguson Avenue	Georgina Avenue	BUFF BL	Short	0.17	$ 65,000	$ 10,986	$ 1,099	$ 1,648	$ 13,732
16	WHITEWOOD AVENUE	Golding Street	Grills Street	BUFF BL	Short	0.04	$ 65,000	$ 2,861	$ 286	$ 429	$ 3,576
56	RIVERSIDE DRIVE	May Street	Sharpe Street	BUFF BL	Short	0.04	$ 65,000	$ 2,860	$ 286	$ 429	$ 3,575
59	RORKE AVENUE	Algonquin Drive	Lawlor Street	BUFF BL	Short	0.09					
93	RORKE AVENUE	Arnold Drive	Algonquin Drive	BUFF BL	Short	0.16					
94	RORKE AVENUE	Albert Street	Little Street	BUFF BL	Short	0.09					
101	RORKE AVENUE	Blackwall Street	Marcella Street	BUFF BL	Short	0.09					
108	RORKE AVENUE	Russel Street	Blackwall Street	BUFF BL	Short	0.09					
143	RORKE AVENUE	Morissette Drive	Buffam Drive	BUFF BL	Short	0.10					
179	RORKE AVENUE	Lawlor Street	Albert Street	BUFF BL	Short	0.10					
216	ARMSTRONG STREET	Whitewood Avenue	Church Street	BUFF BL	Long	0.14	$ 65,000	$ 8,973	$ 897	$ 1,346	$ 11,216
322	RORKE AVENUE	View Street	Cecil Street	BUFF BL	Short	0.09					
348	RORKE AVENUE	Buffam Drive	Joyal Drive	BUFF BL	Short	0.08					
386	WHITEWOOD AVENUE	Paget Street	Mary Street	BUFF BL	Short	0.11	$ 65,000	$ 6,826	$ 683	$ 1,024	$ 8,533
389	WHITEWOOD AVENUE	Nivean Street North	Maple Street North	BUFF BL	Short	0.05	$ 65,000	$ 2,925	$ 293	$ 439	$ 3,657
441	RORKE AVENUE	Main Street	Rorke Avenue	BUFF BL	Short	0.03					
462	WHITEWOOD AVENUE	John Street	Niven Street North	BUFF BL	Short	0.12	$ 65,000	$ 7,671	$ 767	$ 1,151	$ 9,589
602	WHITEWOOD AVENUE	Edith Street	Scott Street	BUFF BL	Short	0.14	$ 65,000	$ 9,101	$ 910	$ 1,365	$ 11,376
607	RORKE AVENUE	Amwell Street	Main STreet	BUFF BL	Short	0.06					
677	RORKE AVENUE	Little Street	Elliot Street	BUFF BL	Short	0.10					
681	MAIN STREET	Georgina Avenue	Rorke Avenue	BUFF BL	Short	0.15	$ 65,000	$ 9,492	$ 949	$ 1,424	$ 11,865
743	ARMSTRONG STREET SOUTH	Whitewood Avenue	Cedar Street	BUFF BL	Long	0.21	$ 65,000	$ 13,685	$ 1,368	$ 2,053	$ 17,106
745	WHITEWOOD AVENUE	Wellington Street	Paget Street	BUFF BL	Short	0.11	$ 65,000	$ 7,086	$ 709	$ 1,063	$ 8,857
752	RORKE AVENUE	Amwell Street	Marcella Street	BUFF BL	Short	0.09					
753	ARMSTRONG STREET	Sharpe Street	Church Street	BUFF BL	Long	0.06	$ 65,000	$ 3,578	$ 358	$ 537	$ 4,472
782	WHITEWOOD AVENUE	Mary Street	Mary Street	BUFF BL	Short	0.02	$ 65,000	$ 1,235	$ 124	$ 185	$ 1,544
795	RORKE AVENUE	Elliot Street	View Street	BUFF BL	Short	0.10					
849	WHITEWOOD AVENUE	Armstrong Street	Wellington Street	BUFF BL	Short	0.11	$ 65,000	$ 6,826	$ 683	$ 1,024	$ 8,532
862	WHITEWOOD AVENUE	Regina Street	Glen Road	BUFF BL	Short	0.05	$ 65,000	$ 3,202	$ 320	$ 480	$ 4,002
893	WHITEWOOD AVENUE	Mary Street	John Street	BUFF BL	Short	0.12	$ 65,000	$ 7,800	$ 780	$ 1,170	$ 9,750
925	WHITEWOOD AVENUE	Scott Street	Rockeby Street	BUFF BL	Short	0.03	$ 65,000	$ 1,885	$ 189	$ 283	$ 2,357
936	WHITEWOOD AVENUE	Grill Street	Regina Street	BUFF BL	Short	0.15	$ 65,000	$ 9,555	$ 956	$ 1,433	$ 11,944
971	WHITEWOOD AVENUE	Maple Street North	Edith Street	BUFF BL	Short	0.18	$ 65,000	$ 11,505	$ 1,151	$ 1,726	$ 14,382
978	WHITEWOOD AVENUE	May Street	Armstrong Street South	BUFF BL	Short	0.11	$ 65,000	$ 7,151	$ 715	$ 1,073	$ 8,939
985	WHITEWOOD AVENUE	Jaffray Street	Golding Street	BUFF BL	Short	0.10	$ 65,000	$ 6,500	$ 650	$ 975	$ 8,125
989	RORKE AVENUE	Cecil Street	Russel Street	BUFF BL	Short	0.09					
1013	WHITEWOOD AVENUE	Rockeby Street	Jaffray Street	BUFF BL	Short	0.06	$ 65,000	$ 3,966	$ 397	$ 595	$ 4,957
241	LAKESHORE ROAD NORTH	Beach Boulevard	Melville Street	BUFF BL OR 2WAY 1SIDE	Short	0.38	$ 65,000	$ 24,389	$ 2,439	$ 3,658	$ 30,486
469	LAKESHORE ROAD NORTH	Cedar Avenue	Wedgewood Avenue	BUFF BL OR 2WAY 1SIDE	Short	0.17	$ 65,000	$ 11,191	$ 1,119	$ 1,679	$ 13,989
479	LAKESHORE ROAD NORTH	Melville Street	Montgomery Avenue	BUFF BL OR 2WAY 1SIDE	Short	0.15	$ 65,000	$ 9,527	$ 953	$ 1,429	$ 11,909
807	PAGET STREET	Whitewood Avenue	Farah Avenue	BUFF BL OR 2WAY 1SIDE	Short	0.15	$ 65,000	$ 10,034	$ 1,003	$ 1,505	$ 12,543
1292	LAKESHORE ROAD NORTH	Bay Street	Montgomery Avenue	BUFF BL OR 2WAY 1SIDE	Short	0.19	$ 65,000	$ 12,309	$ 1,231	$ 1,846	$ 15,386
1293	LAKESHORE ROAD NORTH	Wedgewood Avenue	Broadwood Avenue	BUFF BL OR 2WAY 1SIDE	Short	0.17	$ 65,000	$ 10,853	$ 1,085	$ 1,628	$ 13,566
1304	LAKESHORE ROAD NORTH	Market Street	Bay Street	BUFF BL OR 2WAY 1SIDE	Short	0.15	$ 65,000	$ 9,728	$ 973	$ 1,459	$ 12,160
24	HIGHWAY 65	Bedard Drive	Bedard Drive	BUFF PS	Short	0.04	$ 300,000	$ 13,151	$ 1,315	$ 1,973	$ 16,439
104	KING STREET	Cross Lake Road	Niven Street South	Buff PS	Short	0.06					
340	HIGHWAY 65	Bedard Drive	Highway 65	BUFF PS	Long	1.45	$ 300,000	$ 434,318	$ 43,432	$ 65,148	$ 542,898
424	WHITEWOOD AVENUE	Glen Road	High Street	BUFF PS	Short	0.18	$ 300,000	$ 52,723	$ 5,272	$ 7,908	$ 65,903
532	KING STREET	4th Street	South of 4th Street	Buff PS	Short	0.03					
554	KING STREET	South of 4th Street	North of Louise Street	Buff PS	Short	0.63					
569	KING STREET	North of Louise Street	Louise Street	Buff PS	Short	0.82					
707	KING STREET	Crosslake Road	Steward Avenue	Buff PS	Short	0.41					
749	KING STREET	Station Street	Niven Street South	Buff PS	Short	0.13					
762	KING STREET	4th Street	3rd Street	Buff PS	Short	0.14					
804	KING STREET	2nd Street	3rd Street	Buff PS	Short	0.12					
814	KING STREET	Groom Drive	Lakeview Drive	Buff PS	Short	0.30					
819	WHITEWOOD AVENUE	High Street	Bedard Drive	BUFF PS	Short	0.39	$ 300,000	$ 116,456	$ 11,646	$ 17,468	$ 145,570
848	PETES DAM ROAD	Highway 65	West of Highway 65	BUFF PS	Long	0.69	$ 300,000	$ 206,896	$ 20,690	$ 31,034	$ 258,620
970	KING STREET	2nd Street	1st Street	Buff PS	Short	0.11					
974	KING STREET	1st Street	Groom Drive	Buff PS	Short	0.21					
991	KING STREET	Lakeview Drive	Stewart Avenue	Buff PS	Short	0.21					
1008	KING STREET	Carter Boulevard	Station Street	Buff PS	Short	0.16					
1347	PETES DAM ROAD	West of Highway 65	Petes Dam Trail	BUFF PS	Long	0.52	$ 300,000	$ 155,199	$ 15,520	$ 23,280	$ 193,998
14	MORISSETTE DRIVE	Georgina Avenue	Rorke Street	MUP	Long	0.15	$ 375,000	$ 57,256	$ 5,726	$ 8,588	$ 71,570
405	ALBERT STREET	Georgina Avenue	Rorke Avenue	MUP	Long	0.17	$ 375,000	$ 64,886	$ 6,489	$ 9,733	$ 81,107
597	CARTER BOULEVARD	Cobalt Street	King Street	MUP	Long	0.06	$ 375,000	$ 22,137	$ 2,214	$ 3,320	$ 27,671
731	ALBERT STREET	Meridian Avenue	Georgina Avenue	MUP	Long	0.24	$ 375,000	$ 89,270	$ 8,927	$ 13,390	$ 111,587
851	CARTER BOULEVARD	Lakeview Drive	Stewart Avenue	MUP	Long	0.21	$ 375,000	$ 77,639	$ 7,764	$ 11,646	$ 97,049

ID	Street	From	To	Facility	Phase	Length KM	Unit Cost	Segment Cost	Design Cost (10%)	Contingency Cost (15%)	Total Cost
904	CARTER BOULEVARD	Stewart Avenue	Silver Lane	MUP	Long	0.20	$ 375,000	$ 73,536	$ 7,354	$ 11,030	$ 91,920
1011	CARTER BOULEVARD	Silver Lake	Cobalt Street	MUP	Long	0.39	$ 375,000	$ 147,380	$ 14,738	$ 22,107	$ 184,224
1034	ALBERT STREET	Bruce Street	Meridian Avenue	MUP	Long	0.16	$ 375,000	$ 59,269	$ 5,927	$ 8,890	$ 74,086
1348	Dymond Recreation Park Trail	School	Dymond Recreation Park	OFF RD MUT	Short	0.05	$ 375,000	$ 18,876	$ 1,888	$ 2,831	$ 23,595
964	ARMSTRONG STREET	Wellington Street	Beavis Terrace	PILOT PROJECT	Short	0.19	$ 194,620	$ 36,012	$ 3,601	$ 5,402	$ 45,016
1430	Proposed Pedestrian Bridge	STATO Trail	Murray Street	Proposed Pedestrian Bridge	Long	0.09	$ 1,560,000	$ 1,560,000	$ 156,000	$ 234,000	$ 1,950,000
47	LAKEVIEW DRIVE	Crosslake Road	Queen Street	PS	Long	0.11	$ 215,000	$ 23,869	$ 2,387	$ 3,580	$ 29,836
48	SHEPHERDSON ROAD	Helmer Pedersen Drive	Bolger Avenue	PS	Long	0.09	$ 215,000	$ 20,215	$ 2,021	$ 3,032	$ 25,268
157	LAKEVIEW DRIVE	Birch Street	Carter Boulevard	PS	Long	0.11	$ 215,000	$ 22,584	$ 2,258	$ 3,388	$ 28,230
203	LAKEVIEW DRIVE	Carter Boulevard	Station Street	PS	Long	0.11	$ 215,000	$ 22,794	$ 2,279	$ 3,419	$ 28,492
221	SHEPHERDSON ROAD	South of Barr Avenue	Barr Avenue	PS	Long	0.29	$ 215,000	$ 62,554	$ 6,255	$ 9,383	$ 78,193
232	LAKEVIEW DRIVE	East of Maple Street South	Maple Street South	PS	Long	0.21	$ 215,000	$ 44,661	$ 4,466	$ 6,699	$ 55,826
238	PETERS ROAD	Highway 65	Drive In Theatre Road	PS	Long	1.65	$ 215,000	$ 354,595	$ 35,459	$ 53,189	$ 443,243
278	RORKE STREET	South of Morissette Drive	Morissette Drive	PS	Short	0.22					
285	PETERS ROAD	Dawson Point Road	Red Fox Avenue	PS	Long	0.11	$ 215,000	$ 23,188	$ 2,319	$ 3,478	$ 28,985
319	HIGH STREET	Whitewood Avenue	Douglas Street	PS	Long	0.34	$ 215,000	$ 73,685	$ 7,368	$ 11,053	$ 92,106
354	SILVER CENTRE ROAD	Bucke Parkroad	Cobetec Road	PS	Long	0.98	$ 215,000	$ 211,086	$ 21,109	$ 31,663	$ 263,857
378	RADLEY HILL ROAD	Lakeshore Road North	Roseneath Avenue	PS	Long	0.26	$ 215,000	$ 55,862	$ 5,586	$ 8,379	$ 69,828
385	SHEPHERDSON ROAD	North of Radley Hill Road	North of Radley Hill Road	PS	Long	0.19	$ 215,000	$ 41,036	$ 4,104	$ 6,155	$ 51,295
501	SHEPHERDSON ROAD	Barr Avenue	Helmer Pedersen Drive	PS	Long	0.29	$ 215,000	$ 61,760	$ 6,176	$ 9,264	$ 77,200
503	SHEPHERDSON ROAD	Broadwood Avenue	Bolger Avenue	PS	Long	0.24	$ 215,000	$ 51,615	$ 5,161	$ 7,742	$ 64,519
504	PETERS ROAD	Highway 65	Red Fox Avenue	PS	Long	0.61	$ 215,000	$ 130,785	$ 13,078	$ 19,618	$ 163,481
549	SILVER CENTRE ROAD	South of Groom Drive	Groom Drive	PS	Long	0.61	$ 215,000	$ 131,185	$ 13,118	$ 19,678	$ 163,981
555	SHEPHERDSON ROAD	North of Radley Hill Road	Radley Hill Road	PS	Long	0.10	$ 215,000	$ 20,531	$ 2,053	$ 3,080	$ 25,664
558	LAKEVIEW DRIVE	Proctors Road	East of Maple Street South	PS	Long	0.35	$ 215,000	$ 74,675	$ 7,467	$ 11,201	$ 93,344
568	SHEPHERDSON ROAD	Barr Avenue	North of Radley Hill Road	PS	Long	0.13	$ 215,000	$ 28,535	$ 2,853	$ 4,280	$ 35,669
574	SHEPHERDSON ROAD	Broadwood Avenue	Douglas Street	PS	Long	0.28	$ 215,000	$ 61,000	$ 6,100	$ 9,150	$ 76,249
589	SILVER CENTRE ROAD	Groom Drive	Proctors Road	PS	Long	0.40	$ 215,000	$ 86,109	$ 8,611	$ 12,916	$ 107,636
739	LAKEVIEW DRIVE	Maple Street South	Birch Street	PS	Long	0.10	$ 215,000	$ 21,725	$ 2,172	$ 3,259	$ 27,156
766	RADLEY HILL ROAD	West of Roseneath Avenue	Shepherdson Road	PS	Long	1.04	$ 215,000	$ 223,060	$ 22,306	$ 33,459	$ 278,825
767	LAKEVIEW DRIVE	Lakevilew Drive	King Street	PS	Long	0.10	$ 215,000	$ 21,934	$ 2,193	$ 3,290	$ 27,418
794	BUCKE PARK ROAD	STATO Trail	Silver Centre Road	PS	Long	1.06	$ 215,000	$ 227,274	$ 22,727	$ 34,091	$ 284,092
799	LAKEVIEW DRIVE	Station Street	Crosslake Road	PS	Long	0.09	$ 215,000	$ 18,932	$ 1,893	$ 2,840	$ 23,665
846	RORKE STREET	North of Carter Boulevard	Carter Boulevard	PS	Short	0.20					
897	DAWSON POINT ROAD	Peters Road	STATO Trail	PS	Long	0.41	$ 215,000	$ 88,004	$ 8,800	$ 13,201	$ 110,006
946	RADLEY HILL ROAD	West of Roseneath Avenue	Roseneath Avenue	PS	Long	0.04	$ 215,000	$ 8,095	$ 809	$ 1,214	$ 10,119
1429	Drive In Theatre Road	Peters Road	St Joseph's Court	PS	Short	0.89	$ 215,000	$ 192,260	$ 19,226	$ 28,839	$ 240,325
1432	Drive In Theatre Road	St Joseph's Court	Highway 11	PS	Short	0.65	$ 215,000	$ 140,784	$ 14,078	$ 21,118	$ 175,980
277	DYMOND AVENUE	Dymond Avenue	Mary Street	SH	Short	0.16	$ 11,600	$ 1,812	$ 181	$ 272	$ 2,264
724	CHURCH STREET	Wellington Street	Paget Street	SH	Short	0.14	$ 11,600	$ 1,568	$ 157	$ 235	$ 1,961
830	PAGET STREET	Spruce Street	Church Street	SH	Short	0.12	$ 11,600	$ 1,380	$ 138	$ 207	$ 1,726
865	WELLINGTON STREET	Armstrong Street	Church Street	SH	Short	0.17	$ 11,600	$ 1,995	$ 199	$ 299	$ 2,494
881	CHURCH STREET	Armstrong Street	Wellington Street	SH	Short	0.13	$ 11,600	$ 1,451	$ 145	$ 218	$ 1,814
920	SPRUCE STREET	Wellington Street	Paget Street	SH	Short	0.11	$ 11,600	$ 1,253	$ 125	$ 188	$ 1,566
949	WELLINGTON STREET	Church Street	Spruce Street	SH	Short	0.04	$ 11,600	$ 452	$ 45	$ 68	$ 566
952	DYMOND AVENUE	Mary Street	John Street	SH	Short	0.12	$ 11,600	$ 1,381	$ 138	$ 207	$ 1,726
1017	DYMOND AVENUE	John Street	Niven Street North	SH	Short	0.12	$ 11,600	$ 1,357	$ 136	$ 204	$ 1,697
1352	Farr Drive	Main Street	Farr Drive	Sidewalk	Long	0.07	$ 300,000	$ 19,985	$ 1,998	$ 2,998	$ 24,981
1353	Meridian Avenue	Main Street	South of Amwell Street	Sidewalk	Long	0.10	$ 300,000	$ 28,681	$ 2,868	$ 4,302	$ 35,852
1354	Ferguson Avenue	South of Amwell Street	Marcella Street	Sidewalk	Long	0.06	$ 300,000	$ 16,830	$ 1,683	$ 2,525	$ 21,038
1355	Browning Street	Lakeshore Road South	West of Lakeshore Road South	Sidewalk	Long	0.02	$ 300,000	$ 6,809	$ 681	$ 1,021	$ 8,512
1356	Browning Street	Ferguson Avenue	Georgina Avenue	Sidewalk	Long	0.15	$ 300,000	$ 45,762	$ 4,576	$ 6,864	$ 57,203
1357	Broadway Street	Broadway Street	Browning Street	Sidewalk	Long	0.13	$ 300,000	$ 38,726	$ 3,873	$ 5,809	$ 48,408
1358	Probyn Street	Latchford Street	Browning Street	Sidewalk	Long	0.15	$ 300,000	$ 45,663	$ 4,566	$ 6,849	$ 57,079
1359	Amwell Street	Ferguson Avenue	Georgina Avenue	Sidewalk	Long	0.16	$ 300,000	$ 47,530	$ 4,753	$ 7,129	$ 59,412
1360	Marcella Street	Georgina Avenue	Rorke Avenue	Sidewalk	Long	0.15	$ 300,000	$ 44,664	$ 4,466	$ 6,700	$ 55,830
1361	Rorke Avenue	South of Main Street	Amwell Street	Sidewalk	Long	0.04	$ 300,000	$ 12,455	$ 1,245	$ 1,868	$ 15,569
1362	Rorke Avenue	Marcella Street	Blackwall Street	Sidewalk	Long	0.08	$ 300,000	$ 23,003	$ 2,300	$ 3,450	$ 28,754
1363	Sutherland Way	Russel Street	Blackwall Street	Sidewalk	Long	0.07	$ 300,000	$ 21,872	$ 2,187	$ 3,281	$ 27,340
1364	Russel Street	Georgina Avenue	Rorke Avenue	Sidewalk	Long	0.15	$ 300,000	$ 46,454	$ 4,645	$ 6,968	$ 58,068
1365	Cecil Street	Rorke Avenue	Georgina Avenue	Sidewalk	Long	0.16	$ 300,000	$ 46,589	$ 4,659	$ 6,988	$ 58,237
1366	Rorke Avenue	Blackwall Street	Russel Street	Sidewalk	Long	0.09	$ 300,000	$ 28,331	$ 2,833	$ 4,250	$ 35,414
1367	Sutherland Way	Cecil Street	Russel Street	Sidewalk	Long	0.07	$ 300,000	$ 22,434	$ 2,243	$ 3,365	$ 28,043
1368	Blackwall Street	Meridian Avenue	Sutherland Way	Sidewalk	Long	0.07	$ 300,000	$ 21,431	$ 2,143	$ 3,215	$ 26,789
1369	Marcella Street	Ferguson Avenue	Meridian Avenue	Sidewalk	Long	0.05	$ 300,000	$ 15,206	$ 1,521	$ 2,281	$ 19,008
1370	Ferguson Avenue	Marcella Street	Blackwall Street	Sidewalk	Long	0.08	$ 300,000	$ 22,865	$ 2,287	$ 3,430	$ 28,582
1371	Farr Drive	Farr Drive	Marcella Street	Sidewalk	Long	0.30	$ 300,000	$ 88,932	$ 8,893	$ 13,340	$ 111,165
1372	Farr Drive	Farr Drive	Marcella Street	Sidewalk	Long	0.29	$ 300,000	$ 86,690	$ 8,669	$ 13,004	$ 108,363
1373	Marcella Street	Farr Drive	Meridian Avenue	Sidewalk	Long	0.11	$ 300,000	$ 33,678	$ 3,368	$ 5,052	$ 42,098
1374	Blackwall Street	Farr Drive	Meridian Avenue	Sidewalk	Long	0.11	$ 300,000	$ 31,736	$ 3,174	$ 4,760	$ 39,669
1375	Blackwall Street	Farr Drive	Meridian Avenue	Sidewalk	Long	0.10	$ 300,000	$ 31,401	$ 3,140	$ 4,710	$ 39,252
1376	Leslie Mcfarlane Way	Marcella Street	Main Street	Sidewalk	Long	0.17	$ 300,000	$ 50,314	$ 5,031	$ 7,547	$ 62,892
1377	Little Street	Georgina Avenue	Rorke Avenue	Sidewalk	Long	0.14	$ 300,000	$ 41,190	$ 4,119	$ 6,179	$ 51,488
1378	Rorke Avenue	Little Street	View Street	Sidewalk	Long	0.20	$ 300,000	$ 60,217	$ 6,022	$ 9,032	$ 75,271
1379	Rorke Avenue	South of Little Street	North of Albert Street	Sidewalk	Long	0.05	$ 300,000	$ 14,175	$ 1,418	$ 2,126	$ 17,719

ID	Street	From	To	Facility	Phase	Length KM	Unit Cost	Segment Cost	Design Cost (10%)	Contingency Cost (15%)	Total Cost
1380	Albert Street	Bruce Street	Rorke Avenue	Sidewalk	Long	0.56	$ 300,000	$ 168,143	$ 16,814	$ 25,221	$ 210,178
1381	Little Street	West of Meridian Avenue	Georgina Avenue	Sidewalk	Long	0.16	$ 300,000	$ 48,137	$ 4,814	$ 7,220	$ 60,171
1382	Meridian Avenue	Cecil Street	Elliot Street	Sidewalk	Long	0.18	$ 300,000	$ 54,590	$ 5,459	$ 8,189	$ 68,238
1383	Meridian Avenue	Albert Street	Elliot Street	Sidewalk	Long	0.17	$ 300,000	$ 51,907	$ 5,191	$ 7,786	$ 64,883
1384	Meridian Avenue	Little Street	Albert Street	Sidewalk	Long	0.08	$ 300,000	$ 22,889	$ 2,289	$ 3,433	$ 28,611
1385	Georgina Avenue	Little Street	Morissette Drive	Sidewalk	Long	0.71	$ 300,000	$ 213,809	$ 21,381	$ 32,071	$ 267,261
1386	Cecil Street	Meridian Avenue	Georgina Avenue	Sidewalk	Long	0.22	$ 300,000	$ 65,965	$ 6,596	$ 9,895	$ 82,456
1387	Lakeshore Road South	North of Browning Street	Browning Street	Sidewalk	Long	0.04	$ 300,000	$ 11,957	$ 1,196	$ 1,794	$ 14,947
1388	Georgina Avenue	West of Lakeshore Road South	West of Lakeshore Road South	Sidewalk	Long	0.03	$ 300,000	$ 8,107	$ 811	$ 1,216	$ 10,133
1389	Georgina Avenue	Lakeshore Road South	West of Lakeshore Road South	Sidewalk	Long	0.07	$ 300,000	$ 22,055	$ 2,206	$ 3,308	$ 27,569
1390	Florence Street	Latchford Street	Rorke Avenue	Sidewalk	Long	0.08	$ 300,000	$ 22,627	$ 2,263	$ 3,394	$ 28,284
1391	Foster Street	East of Lathford Street	Latchford Street	Sidewalk	Long	0.08	$ 300,000	$ 22,502	$ 2,250	$ 3,375	$ 28,128
1392	Lakeshore Road South	North of Brewster Street	Brewster Street	Sidewalk	Long	0.02	$ 300,000	$ 7,321	$ 732	$ 1,098	$ 9,151
1393	Rorke Avenue	Probyn Street	Florence Street	Sidewalk	Long	0.20	$ 300,000	$ 61,332	$ 6,133	$ 9,200	$ 76,665
1394	Latchford Street	South of Lakeshore Road South	Lakeshore Road South	Sidewalk	Long	0.10	$ 300,000	$ 29,929	$ 2,993	$ 4,489	$ 37,411
1395	Lakeshore Road North	Beach Boulevard	South of Market Street	Sidewalk	Long	0.81	$ 300,000	$ 242,953	$ 24,295	$ 36,443	$ 303,692
1396	Market Street	East of Lakeshore Road North	Lakeshore Road North	Sidewalk	Long	0.04	$ 300,000	$ 10,720	$ 1,072	$ 1,608	$ 13,400
1397	Whitewood Avenue	Farah Avenue	Rockeby Street	Sidewalk	Long	0.09	$ 300,000	$ 27,312	$ 2,731	$ 4,097	$ 34,140
1398	Maple Street North	Farah Avenue	McCamus Avenue	Sidewalk	Long	0.09	$ 300,000	$ 28,318	$ 2,832	$ 4,248	$ 35,398
1399	John Street	Whitewood Avenue	Farah Avenue	Sidewalk	Long	0.09	$ 300,000	$ 28,491	$ 2,849	$ 4,274	$ 35,614
1400	Maple Street North	Whitewood Avenue	Farah Avenue	Sidewalk	Long	0.11	$ 300,000	$ 34,249	$ 3,425	$ 5,137	$ 42,811
1401	Rockeby Street	West of Edith Street	Farah Avenue	Sidewalk	Long	0.14	$ 300,000	$ 41,750	$ 4,175	$ 6,262	$ 52,187
1402	Rockeby Street	West of Edith Street	Jaffray Street	Sidewalk	Long	0.26	$ 300,000	$ 77,458	$ 7,746	$ 11,619	$ 96,822
1403	Edith Street	Farah Avenue	McCamus Avenue	Sidewalk	Long	0.10	$ 300,000	$ 29,806	$ 2,981	$ 4,471	$ 37,257
1404	Edith Street	Broadwood Avenue	McCamus Avenue	Sidewalk	Long	0.11	$ 300,000	$ 33,593	$ 3,359	$ 5,039	$ 41,991
1405	Broadwood Avenue	Lakeshore Road North	Davidson Street	Sidewalk	Long	0.21	$ 300,000	$ 63,713	$ 6,371	$ 9,557	$ 79,642
1406	Maple Street North	South of McCamus Avenue	North of Broadwood Avenue	Sidewalk	Long	0.05	$ 300,000	$ 13,518	$ 1,352	$ 2,028	$ 16,898
1407	McCamus Avenue	Dymond Crescent	East of Maple Street North	Sidewalk	Long	0.08	$ 300,000	$ 22,566	$ 2,257	$ 3,385	$ 28,208
1408	Dymond Crescent	South of McCamus Avenue	Farah Avenue	Sidewalk	Long	0.23	$ 300,000	$ 69,150	$ 6,915	$ 10,372	$ 86,437
1409	Market Street	Cedar Avenue	Wedgewood Avenue	Sidewalk	Long	0.15	$ 300,000	$ 46,395	$ 4,640	$ 6,959	$ 57,994
1410	Cedar Avenue	West of Wellington Street	East of Paget Street	Sidewalk	Long	0.08	$ 300,000	$ 23,263	$ 2,326	$ 3,489	$ 29,079
1411	Cedar Avenue	Armstrong Street South	Wellington Street	Sidewalk	Long	0.09	$ 300,000	$ 27,269	$ 2,727	$ 4,090	$ 34,087
1412	Wellington Street	STATO Trail	Cedar Avenue	Sidewalk	Long	0.19	$ 300,000	$ 55,643	$ 5,564	$ 8,346	$ 69,554
1413	Whitewood Avenue	Golding Street	Glen Road	Sidewalk	Long	0.27	$ 300,000	$ 79,633	$ 7,963	$ 11,945	$ 99,541
1414	Mary Street	Whitewood Avenue	Farah Avenue	Sidewalk	Long	0.09	$ 300,000	$ 26,988	$ 2,699	$ 4,048	$ 33,735
1415	Riverside Drive	East of Sharpe Street	West of Sharpe Street	Sidewalk	Long	0.08	$ 300,000	$ 24,029	$ 2,403	$ 3,604	$ 30,037
1416	Oak Avenue	Oak Ave Park	Katherine Street	Sidewalk	Long	0.13	$ 300,000	$ 39,515	$ 3,951	$ 5,927	$ 49,393
1417	Elm Avenue	West of Katherine Street	Katherine Street	Sidewalk	Long	0.05	$ 300,000	$ 15,876	$ 1,588	$ 2,381	$ 19,845
1418	Elm Avenue	East of May Street	May Street	Sidewalk	Long	0.06	$ 300,000	$ 16,619	$ 1,662	$ 2,493	$ 20,774
1419	May Street	Elm Avenue	Murray Street	Sidewalk	Long	0.13	$ 300,000	$ 40,397	$ 4,040	$ 6,060	$ 50,496
1420	Algonquin Drive	Bruce Street	Rorke Avenue	Sidewalk	Long	0.55	$ 300,000	$ 165,728	$ 16,573	$ 24,859	$ 207,159
1421	Bruce Street	Albert Street	End of Bruce Street	Sidewalk	Long	0.30	$ 300,000	$ 90,538	$ 9,054	$ 13,581	$ 113,172
1422	Rebecca Street	Elm Avenue	Hessle Avenue	Sidewalk	Long	0.41	$ 300,000	$ 123,593	$ 12,359	$ 18,539	$ 154,491
1423	Scott Street	Birch Drive	Whitewood Avenue	Sidewalk	Long	0.49	$ 300,000	$ 146,845	$ 14,684	$ 22,027	$ 183,556
1424	Birch Drive	Niven Street North	Scott Street	Sidewalk	Long	0.39	$ 300,000	$ 117,833	$ 11,783	$ 17,675	$ 147,291
1425	Brewster Street	Ethel Street	Lakeshore Road South	Sidewalk	Long	0.10	$ 300,000	$ 29,668	$ 2,967	$ 4,450	$ 37,085
1426	Brewster Street	Probyn Street	Rorke Avenue	Sidewalk	Long	0.11	$ 300,000	$ 32,277	$ 3,228	$ 4,842	$ 40,346
1427	Florence Street	Brewster Street	Rorke Avenue	Sidewalk	Long	0.08	$ 300,000	$ 22,582	$ 2,258	$ 3,387	$ 28,228
1428	Crystal Crescent	Drive In Theatre Road	Raymond Street	Sidewalk	Long	0.88	$ 300,000	$ 264,693	$ 26,469	$ 39,704	$ 330,867
1431	Raymond Street	Crystal Crescent	Drive In Theatre Road	Sidewalk	Long	0.57	$ 300,000	$ 171,794	$ 17,179	$ 25,769	$ 214,742
1433	Crystal Crescent	Drive In Theatre Road	Raymond Street	Sidewalk	Long	0.18	$ 300,000	$ 53,114	$ 5,311	$ 7,967	$ 66,393
1434	Georgina Avenue	South of Amwell Street	Marcella Street	Sidewalk	Long	0.05	$ 300,000	$ 14,717	$ 1,472	$ 2,208	$ 18,396
1435	Marcella Street	Ferguson Avenue	Meridian Avenue	Sidewalk	Long	0.05	$ 300,000	$ 15,940	$ 1,594	$ 2,391	$ 19,925
1436	Blackwall Street	Meridian Avenue	Ferguson Avenue	Sidewalk	Long	0.05	$ 300,000	$ 15,835	$ 1,583	$ 2,375	$ 19,793
1437	Probyn Street	Rorke Avenue	Latchford Street	Sidewalk	Long	0.07	$ 300,000	$ 22,012	$ 2,201	$ 3,302	$ 27,515
1438	Elm Avenue	West of May Street	May Street	Sidewalk	Long	0.05	$ 300,000	$ 14,134	$ 1,413	$ 2,120	$ 17,668
1439	Cedar Avenue	Lakeshore Road North	Market Street	Sidewalk	Long	0.08	$ 300,000	$ 25,334	$ 2,533	$ 3,800	$ 31,667
1440	Wedgewood Avenue	Market Street	Lakeshorre Road North	Sidewalk	Long	0.09	$ 300,000	$ 27,088	$ 2,709	$ 4,063	$ 33,860
1441	Farah Avenue	Lakeshore Road North	Dymond Crescent	Sidewalk	Long	0.11	$ 300,000	$ 33,461	$ 3,346	$ 5,019	$ 41,826
38	LATCHFORD STREET	Foster Street	Temiskaming Street	SR	Short	0.17	$ 1,200	$ 200	$ 20	$ 30	$ 251
63	CEDAR AVENUE	Paget Street	Paget Street	SR	Short	0.03	$ 1,200	$ 30	$ 3	$ 5	$ 38
69	PROBYN STREET	Rorke Avenue	Latchford Street	SR	Short	0.09	$ 1,200	$ 103	$ 10	$ 15	$ 128
190	CEDAR AVENUE	Paget Street	Lakeshore Road North	SR	Short	0.07	$ 1,200	$ 86	$ 9	$ 13	$ 107
202	FARAH AVENUE	Paget Street	Mary Street	SR	Short	0.06	$ 1,200	$ 77	$ 8	$ 12	$ 96
240	NIVEN STREET NORTH	Dymond Avenue	Birch Drive	SR	Short	0.18	$ 1,200	$ 212	$ 21	$ 32	$ 266
351	LATCHFORD STREET	Lakeshore Road South	Temiskaming Street	SR	Short	0.15	$ 1,200	$ 178	$ 18	$ 27	$ 222
371	PETERS ROAD	Toblers Road	Dive In Theatre Road	SR	Long	1.61	$ 1,200	$ 1,930	$ 193	$ 289	$ 2,412
399	ROCKEBY STREET	Farah Avenue	Whitewood Avenue	SR	Short	0.10	$ 1,200	$ 125	$ 12	$ 19	$ 156
421	LATCHFORD STREET	Probyn Street	Florence Street	SR	Short	0.22	$ 1,200	$ 263	$ 26	$ 39	$ 329
449	PETERS ROAD	Toblers Road	Dales Road	SR	Long	1.63	$ 1,200	$ 1,951	$ 195	$ 293	$ 2,439
512	LATCHFORD STREET	Florence Street	Ethels Street	SR	Short	0.12	$ 1,200	$ 149	$ 15	$ 22	$ 186
522	PETERS ROAD	Dales Road	Uno Park Road	SR	Long	1.58	$ 1,200	$ 1,897	$ 190	$ 284	$ 2,371
651	RORKE AVENUE	Browning Street	Brewster Street	SR	Short	0.05	$ 1,200	$ 65	$ 6	$ 10	$ 81
697	FARAH AVENUE	Maple Street North	Edith Street	SR	Short	0.18	$ 1,200	$ 212	$ 21	$ 32	$ 266
711	NIVEN STREET NORTH	Dymond Avenue	Spruce Street	SR	Short	0.16	$ 1,200	$ 188	$ 19	$ 28	$ 236

ID	Street	From	To	Facility	Phase	Length KM	Unit Cost	Segment Cost	Design Cost (10%)	Contingency Cost (15%)	Total Cost
720	FARAH AVENUE	Edith Street	Rockeby Street	SR	Short	0.17	$ 1,200	$ 204	$ 20	$ 31	$ 255
728	FARAH AVENUE	John Street	Maple Street North	SR	Short	0.16	$ 1,200	$ 192	$ 19	$ 29	$ 240
808	RORKE AVENUE	Main Street	Broadway Street	SR	Short	0.09	$ 1,200	$ 109	$ 11	$ 16	$ 137
836	CEDAR AVENUE	Armstrong Street South	Wellington Street	SR	Short	0.11	$ 1,200	$ 131	$ 13	$ 20	$ 163
876	CEDAR AVENUE	Wellington Street	Paget Street	SR	Short	0.10	$ 1,200	$ 119	$ 12	$ 18	$ 149
886	LATCHFORD STREET	Ethel Street	Foster Street	SR	Short	0.18	$ 1,200	$ 210	$ 21	$ 32	$ 263
892	RORKE AVENUE	Browning Street	Broadway Street	SR	Short	0.08	$ 1,200	$ 98	$ 10	$ 15	$ 123
901	RORKE AVENUE	Brewster Street	Probyn Street	SR	Short	0.03	$ 1,200	$ 38	$ 4	$ 6	$ 48
972	NIVEN STREET NORTH	Whitewood Avenue	Spruce Street	SR	Short	0.17	$ 1,200	$ 199	$ 20	$ 30	$ 249
1004	FARAH AVENUE	Mary Street	Dymond Crescent	SR	Short	0.06	$ 1,200	$ 77	$ 8	$ 12	$ 96
1009	FARAH AVENUE	Dymond Crescent	John Street	SR	Short	0.08	$ 1,200	$ 92	$ 9	$ 14	$ 116
1046	CEDAR AVENUE	Riverside Drive	Armstrong Street South	SR	Short	0.16	$ 1,200	$ 187	$ 19	$ 28	$ 234
1349	WELLINGTON STREET	Wellington Street	Cedar Avenue	SR	Short	0.19	$ 1,200	$ 223	$ 22	$ 33	$ 278
864	MURRAY STREET	Rebecca Street	May Street	STATO	Long	0.14	$ 194,620	$ 26,975	$ 2,697	$ 4,046	$ 33,718
1350	MURRAY STREET	Katherine Street	Rebecca Street	STATO	Long	0.11	$ 194,620	$ 21,498	$ 2,150	$ 3,225	$ 26,872
S0	STATO Trail	Albert Street	Bucke Park Road	STATO	Long	3.22	$ 375,000	$ 1,208,421	$ 120,842	$ 181,263	$ 1,510,527
S3	STATO Trail	South of Cedar Avenue	South of Wellington Street	STATO	Long	0.30	$ 375,000	$ 112,136	$ 11,214	$ 16,820	$ 140,170
S4	STATO Trail	South of Cedar Avenue	Riverside Place Park	STATO	Long	0.69	$ 375,000	$ 259,602	$ 25,960	$ 38,940	$ 324,502
S5	STATO Trail	New Liskeard Spur Line	New Liskeard Spur Line	STATO	Long	0.01	$ 375,000	$ 4,221	$ 422	$ 633	$ 5,276
S6	STATO Trail	Katherine Street	Dawson Point Road	STATO	Long	0.99	$ 375,000	$ 371,550	$ 37,155	$ 55,733	$ 464,438
159	MAIN STREET	Meridian Avenue	Ferguson Avenue	Traffic calming	Short	0.07	$ 11,600	$ 812	$ 81	$ 122	$ 1,015
196	DRIVE IN THEATRE ROAD	Crystal Crescent	Grant Drive	Traffic calming	Short	0.20	$ 11,600	$ 2,263	$ 226	$ 339	$ 2,829
280	DRIVE IN THEATRE ROAD	St Josephs Court	Crystal Crescent	Traffic calming	Short	0.15	$ 11,600	$ 1,766	$ 177	$ 265	$ 2,208
502	GOLF COURSE ROAD	Highway 11	Mclean Road	Traffic calming	Short	1.54	$ 11,600	$ 17,914	$ 1,791	$ 2,687	$ 22,392
685	MAIN STREET	Leslie McFarlane Way	Meridian Avenue	Traffic calming	Short	0.06	$ 11,600	$ 740	$ 74	$ 111	$ 925
695	FERGUSON AVENUE	Main Street	Amwell Street	Traffic calming	Short	0.08	$ 11,600	$ 975	$ 98	$ 146	$ 1,219
700	DRIVE IN THEATRE ROAD	Laurette Street	Raymond Street	Traffic calming	Short	0.11	$ 11,600	$ 1,265	$ 126	$ 190	$ 1,581
717	MAIN STREET	Farr Drive	Leslie McFarlane Way	Traffic calming	Short	0.04	$ 11,600	$ 504	$ 50	$ 76	$ 630
792	FERGUSON AVENUE	Farr Drive	Browning Street	Traffic calming	Short	0.09	$ 11,600	$ 997	$ 100	$ 150	$ 1,247
860	FERGUSON AVENUE	Main Street	Farr Drive	Traffic calming	Short	0.09	$ 11,600	$ 1,056	$ 106	$ 158	$ 1,320
966	DRIVE IN THEATRE ROAD	Raymond Street	Highway 11	Traffic calming	Short	0.13	$ 11,600	$ 1,544	$ 154	$ 232	$ 1,930
995	DRIVE IN THEATRE ROAD	Peters Road	St Josephs Court	Traffic calming	Short	0.90	$ 11,600	$ 10,395	$ 1,040	$ 1,559	$ 12,994
1346	GOLF COURSE ROAD	Mclean Road	Wabi Creek	Traffic calming	Short	0.10	$ 11,600	$ 1,207	$ 121	$ 181	$ 1,509

Table 4 - Summary of Proposed AT Network

This table provides a summary of the proposed active transportation and crossing enhancements as part of the Temiskaming Shores network.

Facility Type	Short-Term		Long-Term		Total	
	Length (KM)	Estimated Cost	Length (KM)	Estimated Cost	Length (KM)	Estimated Cost
Off-Road Multi-Use Trail	0.1	$23,595	5.5	$2,505,503	5.6	$2,529,098
In-Boulevard Multi-Use Path	0.0	$0	1.6	$739,214	1.6	$739,214
Buffered Bike Lane	3.3	$149,292	0.4	$32,794	3.7	$182,086
Buffered Bike Lane or Two-Way On-Road	1.4	$110,038	0.0	$0	1.4	$110,038
Bike Lane	0.4	$14,574	0.0	$0	0.4	$14,574
Buffered Paved Shoulders	3.9	$227,912	2.7	$995,516	6.6	$1,223,428
Paved Shoulder	2.0	$416,305	10.3	$2,764,183	12.3	$3,180,488
Sharrows Markings	1.1	$15,813	0.0	$0	1.1	$15,813
Signed Route	3.1	$4,711	4.8	$7,222	7.9	$11,933
Candidate Locations for Pilot Projects	0.2	$45,016	0.0	$0	0.2	$45,016
Candidate Locations for Traffic Calming Measures	3.6	$51,796	0.0	$0	3.6	$51,796
Pedestrian Bridge	0.0	$0	0.1	$1,950,000	0.1	$1,950,000
Sidewalks	0.0	$0	14.4	$5,389,125	14.4	$5,389,125
Crossing Enhancement	-	$123,000	-	$230,000	-	$353,000
Total	**19.1**	**$1,182,052**	**39.8**	**$14,613,557**	**58.9**	**$15,795,609**