EAST FERRIS
Active Transportation Master Plan

East Ferris
MUNICIPALITY · MUNICIPALITÉ

Table of Contents

Introduction

The Active Transportation Master Plan (ATP) is a long-term policy document that boldly leads East Ferris into a new era of active transportation. The ATP refers to active transportation as involving “pedestrians and cyclists” and activities defined as “walking and cycling.” In doing so, it does not preclude active transportation by assisted devices such as motorized scooters and wheelchairs or by other forms such as running, in-line skating and e-bikes.

The ATP sets out goals and objectives, proposes the development of active transportation facilities over 20 years, and recommends changes to related municipal plans and policies. It proposes an increase in the annual AT reserve from $25,000 to $100,000. This is the first ATP prepared by the municipality to advance its vision of a vibrant and healthy rural community. The ATP does not bind the municipality to specific investments, it is simply a roadmap to a future where every AT activity in East Ferris is increased and feels enjoyable, safe and convenient.

Task Force

The ATP was prepared by a municipal Task Force that was co-chaired by Rod Bilz and Pauline Rochefort. It consisted of expert walkers, joggers and cyclists from East Ferris: Denise Beaupré, Mike Burke, Shona Camirand, Tim Foster, Greg Kirton and Donna Maitland. It was reviewed by the Municipality's Parks, Recreation and Culture Committee and approved by Council in January 2022. To define the scope of planning, the Task Force started at the beginning with questions such as:

- Is this the first ATP for East Ferris?
- What data exists on walking and cycling rates in East Ferris?
- Does East Ferris have an existing network of pedestrian and bike routes?
- Do East Ferris policies take into account the needs of non-motorized road users?
- Is there political support for walking and cycling in the community? If so, to what extent?
- Should there be a specific plan for pedestrians and a plan for cyclists or a mixed-use plan.

The Task Force then developed the ATP over ten months.

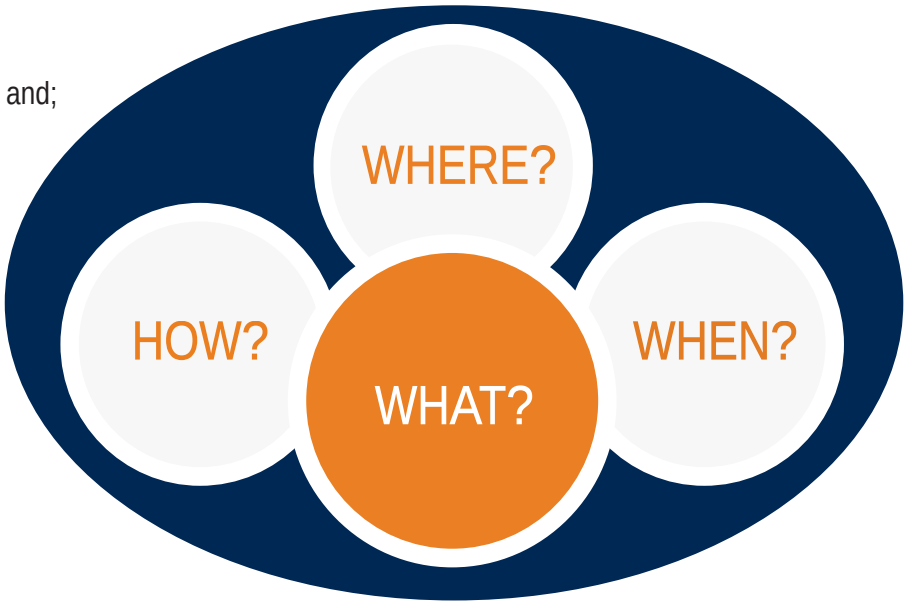
January-April 2021
The current active transportation environment was examined to understand WHERE the Municipality is in terms of active transportation. Comparable communities and best practices were researched.

May-September 2021
Active transportation issues, opportunities and constraints in East Ferris were explored to identify WHAT is important and a vision statement, goals and objectives were established.

October-December 2021
Consultations were held to corroborate the recommendations in the draft plan. The ATP was then refined to include an implementation plan with timelines as to WHEN and HOW actions are completed to achieve the vision and goals.

Overall, it was felt that the ATP should be modest and reasonable, based on the resources of the municipality, so it should be a mixed-use active transportation network that serves both pedestrians and cyclists and implemented over an extended period of time:

- short- term actions by 2023;
- near-term actions by 2026;
- medium-term actions by 2031 and;
- longer-term actions by 2041



Trends

The work of the Task Force was influenced by the continued emergence of active transportation in many communities and the broad trends that are impacting Canada as well as other jurisdictions around the world. Understanding these trends informs the decisions made here in East Ferris.

Automotive Use

The climate is changing and impacting Canada, and one of the biggest contributors is transportation. Globally, transportation accounts for a quarter of CO2 emissions. And most of the world's transportation networks are still vehicle- centric – cars, trucks, buses and motorcycles. Since 2000, Canada has seen a 50% increase in motor vehicle registrations, and this growth is accelerating. In 2019, Canada had the highest number of vehicle registrations ever recorded bringing the total to 35,742,412 registrations. According to the Canadian Automobile Association, there are now more vehicles on the road in virtually every community in Canada, and that includes East Ferris.

Demographics

Over the past few decades, Canada has experienced demographic changes that have impacted transportation patterns: urban intensification, changing lifestyles and consumer preferences for public and active transportation options. There has been the emergence of all kinds of cyclists – commuters, hobbyists, utility cyclists and all-season cyclists – as well as all kinds of walkers and joggers – strollers, power walkers and joggers, hikers and long-distance runners, long-distance walkers and marathoners. Then there is the aging of the population, with the number of people aged 65 and over expected to almost double in Ontario, from about 2.6 million, or 17.6% of the population in 2020, to almost 4.5 million, or 22.2%, by 2046. As they retire, they will increase in size and reshape the demographic character of rural areas like East Ferris.

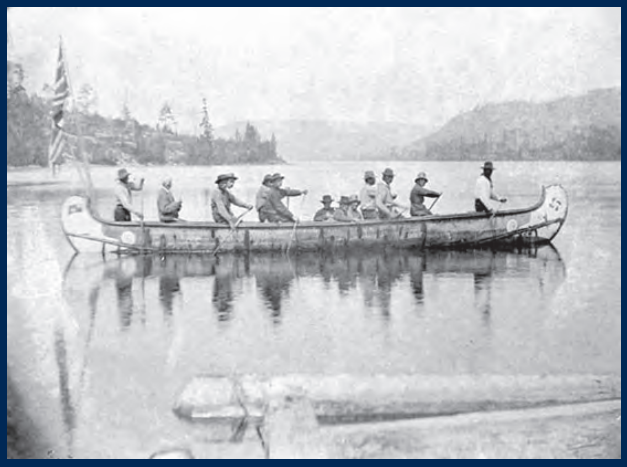
Health

Today, communities are facing rising health care costs, many of which are associated with preventable chronic diseases. Health Canada recommends at least 60 minutes of moderate to vigorous physical activity per day for children and youth and 150 minutes of moderate to vigorous physical activity per week for adults and seniors. According to ParticipACTION Canada's 2020 Report Card, few adults living in Canada meet the national guidelines; in fact, only 16% of adults are active enough to reap the health benefits associated with regular physical activity. For youth, the report found that only 39% of children and youth are meeting the physical activity recommendation in the Canadian 24-hour movement guidelines. Walking and cycling are among the most basic forms of physical activity and help people reach recommended levels of physical activity, thereby reducing chronic disease and associated health care costs. Studies show that communities with high rates of walking and bicycling realize that conditions must be safe, enjoyable and convenient for people of all ages and physical abilities to participate.

Planning

The emphasis on walking and cycling has increased dramatically in Canada with projects such as the Trans Canada Trail, the Share the Road program, community master plans and certification programs to promote pedestrian and cycling friendly communities, and major improvements to equipment and clothing. In 2021, the federal government released a National Active Transportation Policy: Canada's First Strategy to Promote the Construction and Use of Trails, Pathways and Bikeways. This policy follows on the heels of the Ontario Cycling Strategy #CycleON: a 20-year vision to promote cycling and cycling safety in Ontario. Provincial governments have established design guidelines and application information for active transportation infrastructure for jurisdictions of all sizes. Excellent examples include the recently released British Columbia Active Transportation Guide, MTO's Complete Street Planning and Ontario's Traffic Manual Book 18 on Cycling Facilities. Concepts such as "Vision Zero", "Complete Streets", "Traffic Calming" and "Universal Design" have emerged to refer to roadways that balance safety, access and comfort for users of all modes.

EXISTING CONDITIONS: WHERE IS ACTIVE TRANSPORTATION AT IN EAST FERRIS



Community Profile

East Ferris residents have been walking and biking for decades. The following provides a snapshot of the status of active transportation in East Ferris.

In East Ferris the impetus for an ATP comes from the community as walking and biking are among the primary recreational activities. Historically, residents turned to road shoulders for walking and biking, as well as trails on large agricultural properties and walkways connected to lake properties. In recent years AT amenities and programming have developed.

1970 – Snowmobiling became a popular activity in East Ferris and a network of trails developed on community lakes, public lands and private property. Walking became popular when major marathons were held to raise funds for the arena and churches.

1980s – The Corbeil Conservation Area received provincial and municipal funding to develop what became the North Bay-Mattawa Conservation Authority Trail near the Corbeil Park Hall. Residents also developed a network of cross- country ski trails, which celebrated its grand opening in 1989 as the East Ferris X-Country Ski Club.

1990s – Residents of MacPherson Drive began working to link pre-existing portage trails, old logging trails and random hunting trails located in Mattawa River Provincial Park to create a hiking trail that is now known as the Stepping Stones.

2000s – Corbeil Road was upgraded and the Municipality ensured that a wider shoulder was paved. The Ministry of Transportation (MTO) paved the shoulder of Highway 17 east from Centennial Crescent to Twin Lakes Road, allowing East Ferris residents to cycle to work in North Bay. The East Ferris roads have become a popular destination for area cyclists because, along with Callander, they offer convenient bike loops that take 2-3 hours to complete from North Bay. For a few years, the Northlander train promoted cycling tours from Toronto that included East Ferris loops.

2010s – The East Ferris Voyer Trail Steering Committee was formed and, with the participation of the East Ferris Knights of Columbus and Discovery Routes, cleared and widened an existing trail connecting in part to the Pinewood Park and Birch's Road area of North Bay. East Ferris residents advocated for the Voyageur Bike Route in the community, which resulted in the installation of wayfinding signs and a bicycle support kiosk at Big Moose Beach Park, with support from the Municipality. When Highway 94 was repaved, the Municipality was successful in obtaining wider paved shoulders. OPP programs encouraged safe cycling at École Saint-Thomas d'Aquin and Ferris Glen School.

East Ferris is best described as a rural, residential community with easy access to urban amenities. The municipality has grown steadily and is currently home to almost 5,000 residents. Its population has evolved in tandem with national trends and attracts the millennial generation starting families and retiring baby boomers. In 2021, East Ferris' waterfront properties on Trout Lake and Nosbonsing Lake are in high demand, with many examples of buyers purchasing without viewing properties, as buyers migrating north from southern Ontario seek more space and affordability with the pandemic of COVID. Growth has brought new homeowners from the cities who are accustomed to sidewalks and bike paths. At the same time, growth has led to the division of large properties limiting access to private trails and driveways.

In East Ferris the road network is extensive, as the community has evolved as a decentralized community with residents spread throughout the villages of Astorville and Corbeil and along the shores of Trout and Nosbonsing Lakes. Ensuring the safety of its road network is a priority for the Municipality. Road maintenance is a significant part of East Ferris' operational budget as 99.9% of residents commute to work or school by vehicle, with 86% of them requiring trips of 15 minutes or more. Annual traffic incidents, as reported by the East Ferris Police Services Board, indicate an overall safe roadway system. At the same time, growth has resulted in more vehicles on East Ferris roads and more reports of irresponsible driving. Unfortunately, most of East Ferris' roads date back to settlement and were not built with the vision of one day being shared by vehicles, pedestrians, and cyclists. Development patterns have supported an automobile-centric road model that has seen limited investment in plans and policies that support the evolution of active transportation. East Ferris residents are concerned for their safety when using East Ferris road shoulders for AT activities.

Citizen's Input

Table 1: Citizen's Input from Various Sources

Active Transportation Infrastructure	Road Safety Issues	Programming
Widen roadside shoulders	Enforce speed limits	Walking club
Increase the amount of paved shoulders	Reduce speed limits	Organized hikes
Add off-road trails	Dangerous curves for walking or cycling	Dog walking club
Add trails between the Villas and village amenities	Too much increase in traffic	Nature walks
Increase trail connections, e.g. Kate Pace Way	Add traffic calming measures e.g. Village, Astorville, Big Moose, MacPherson and Centennial	Outdoor fitness
Expand Wasi's year-round ski trails		
Protect the Stepping Stones		
Upgrade pathway between Edmond and Catherine Drive		

2020 and 2021 Strategic Plan Report Surveys , 2021 Community Safety and Well-Being Survey and various registered Service Requests/Formal Delegations to Council.

Table 2: Park, Recreation & Culture Survey Results

32 sports identified. Of responses, 9 related to active transportation	East Ferris sports that are not currently available: Responses related to Active Transportation
o #1 Walking (91 respondents)	o Safe on road walking
o Hiking (53)	o Safe on road cycling circuit
o Snowshoeing (42)	o Mountain bike trails
o Hunting (39)	o Hiking trails
o Cycling (33)	o A dog park or off-leash area
o Cross-country skiing (31)	o Horseback riding & trails
o Jogging / running (19)	o Running group
o Horseback riding (6)	o More programming at Wasi Ski Trails
o Rollerblading (2)	o Geocaching, nature walks

2019 Survey for the proposed Parks, Recreation & Culture Master Plan

Stakeholders

East Ferris Police Services Board

Quarterly reports from the Ontario Provincial Police show that incidents and vehicle collisions remain low in East Ferris. At the same time, there are many recorded complaints from East Ferris citizens about speeding on municipal roads. In 2022, the PSB is planning an education campaign to target irresponsible driving.

Stakeholders

Discovery Routes

The Discovery Routes trail organization has identified Lake Nosbonsing Road as a high-risk section of the Voyageur Cycling Route requiring paved shoulders. Municipally owned, Lake Nosbonsing Road carries more traffic than nearby provincial highways 94 and 654. In recent years, both provincial highways have been paved and provided with wider paved shoulders to encourage cycling:

- Highway 654 Nipissing/Callander segment: 1,100 AADT
- Provincial Highway 94 Callander / Corbeil segment: 3,750 AADT
- Nosbonsing Lake Municipal Road / 654 extension to Astorville: 4,950 AADT

Discovery Routes is moving forward with plans to acquire a portion of the abandoned Beachburg rail line to Algonquin Park. It would be nice if the East Ferris system could connect to this future trail system. Discovery Routes has also retained marketing and tourism consultants who, during a tour of East Ferris by bike, highlighted the potential for further development of the Big Moose bike stand.

Discovery Routes encourages East Ferris to look at the growing tourism opportunities that come with active transportation, such as eco-tourism.

Knights of Columbus / Discovery Routes

A portion of the Voyer Trail is on East Ferris municipal land while the remainder is on Crown land. No organization actively maintains the trail, although Discovery Routes does feature it in their marketing materials. The trail does not connect to Pinewood Park Drive and the Birches Road area as was planned and following is a summary of the challenges involved with trying to complete the connection.

- In 1957, ETI Explosives Technologies purchased a large tract of land in the western section of the proposed trail to manufacture, store and distribute explosives. In the late 1990s, ETI gave Discovery Routes permission to construct the Voyer Trail over their property on the condition that the trail maintain an allowable distance around the storage facilities. Circumstances at the time prevented the trail from being built. Since then, the company has changed ownership several times. The current owner, Dyno Nobel, is licensed to manufacture and store commercial explosives. The Explosives Regulatory Division of Natural Resources Canada controls the minimum allowable distances from which a public trail can exist from a site containing explosives. However, explosives are no longer stored on the site.

- Another major challenge is an active aggregate extraction company at the west end of the road. The owner has granted permission to the Friends of La Vase and the North Bay Snowmobile Club to cross sections of the pit. In discussing this possibility with the pit owner, the idea that access can be obtained using the unopened allocation of Birch's Road influences the location of the trail through the pit. The pit owner is willing to work with Discovery Route, but he recently passed away and the pit is now up for sale.

Wasi Ski Trails

Wasi Ski operates 43 kilometers of cross-country ski trails, 7.5 kilometers of which are wide enough for double track skiing. The club also has 8 kilometers of snowshoe trails. All trails are protected by a land use permit issued by the Ministry of Northern Development, Mines, Natural Resources and Forestry from November 1 to April 15, at which time the land becomes private property accessible only to Club members. An additional year round permit is granted to the Club for the land used for parking, signage and the clubhouse. The Club maintains year-round insurance on this portion of the land and allows walkers and bikers to access the trails for off-season use. While the Club is happy to work together to allow for more active transportation on the site, it is looking to another entity, such as the Municipality or the North Bay Mountain Bike Association, to take over the hiking and mountain biking operations. The club is currently seeking funds to upgrade come its facilities, which would benefit year-round use.

Algonquin Land Claim

The task force consulted the status of the ALC negotiations to understand the implications for active transportation. A suggestion was made to pave the shoulders of MacPherson Drive and develop new trails on municipally owned land near One Mile Road.

Municipal Infrastructure

ROADS

East Ferris has 123 km of roads, 20% of which have acceptable shoulders for active transportation.
These figures do not include private roads and driveways.

Characteristics	Length km	Paved km	Surface Treated km	Gravel km	Acceptable Shoulder km	Narrow Shoulder km
Traffic movement is primary Road traffic at 80 – 90 km/h Subject to property access control	**18**	**18**			**16**	**2.0**
Traffic movement is primary Road traffic at 60 – 80 km/h Special cycling facilities preferred	**3.9**	**3.9**				**3.9**
Traffic movement is primary Road traffic at 60 – 80 km/h Special cycling facilities preferred	**52.8**	**20.5**	**26.2**	**6.1**	**8.3**	**44.5**
Access to properties & traffic movement Road traffic at 40 – 60 km/h Stop sign at arterial roads	**23.9**	**.5**	**8.7**	**14.7**		**23.9**
Provide access to properties Road traffic at 30 – 50 km/h	**24.5**	**4**	**6**	**14.5**		**24.5**
TOTAL	**123.1**	**46.9**	**40.9**	**35.3**	**24.3 (20%)**	**98.8 (80%)**

Municipal Infrastructure

TRAILS

East Ferris also has over 78 km of trails that are used by walkers, hikers, dog walkers, joggers and mountain bikers. The trails are owned and managed by community organizations, with the exception of a portion of the Voyer Trail which is on municipal land.

Table 4 – East Ferris Trail Network

East Ferris Trail	Trail Length (km)	Ownership/Management
Wasi Ski Trail	51	Wasi Ski Trail, Crown Land, MNRF
NBMCA Corbeil Trail	3.4	NBMCA, Crown Land
Voyer Trail	6	Municipality, Discovery Routes, Crown, Private
Stepping Stones	18	Crown Land
TOTAL	**78.4**	

The Voyageur Cycling Route / Véloroute is the backbone of East Ferris' existing active transportation network. The route spans over 645 km and connects 29 rural and northern communities from Ottawa to Sudbury. The bikeway is part of the core provincial cycling network, with direct connections to the Great Lakes Waterfront Trail, the National Capital Region and La Route Verte du Quebec, while also being aligned with over 200 km of the Grand Trails. Locally, the trail connects Bonfield to East Ferris via Quae Quae Road, south to Corbeil Road, west to Astorville Road, west to Lake Nosbonsing Road and from there either west to Highway 654 or north to Callander and then to Kate Pace Way in North Bay. In addition to the main route, the Voyageur Cycling Route identifies 2 alternative routes to East Ferris: Alternative A Corbeil Road north to Highway #94 north to Centennial Crescent and Alternative B Corbeil Road to Highway #94 west to Callander and then to Kate Pace Way.

Figure 1: Voyageur Cycling Route/ Véloroute

East Ferris municipal facilities are equipped with benches, garbage and recycling garbage cans, and public washrooms, including MacPherson Park, Vrebosch Park, Big Moose Park and the East Ferris Community Centre. Bicycle racks are located at both elementary schools: École Saint- Thomas d'Aquin and Ferris Glen. There is a trailhead kiosk at Big Moose Park.

FACILITIES

Figure 2: Big Moose Trailhead Kiosk

Through the use of Strava heat mapping and public consultations, the roads and trails in East Ferris most used by pedestrians were identified. Pedestrian activity tends to be more geographically confined to roads along the shores of Nosbonsing Lake and Trout Lake, the heart of Astorville and Corbeil, and subdivisions as follows: Village Road, Southshore Road west, Astorville Road, Big Moose Road, Guillemette Road, Nosbonsing Park Road, Hwy. 94, Taillefer Road, Voyer Road, MacPherson Drive, and streets in the Catherine Drive, Hillside (+40 youth), and Treadlightly developments. In general, pedestrians make short trips on foot, ranging from 2 to 6 kilometers. They are looking for the most convenient route from their front door to what will give them an hour or less of exercise and fresh air. Dog walkers are numerous. Pedestrians are more sensitive to the environment in which they walk, as they appreciate aesthetics as well as the opportunity to communicate with others. They are more likely to be disturbed by noise levels or fear for their personal safety. Many pedestrians would rather be seen by other residents than not be seen walking on a bush trail. The most used trails are the NBMCA Trail, Edmond to Catherine Drive Trail and Stepping Stones.

The most used roads by cyclists are Lake Nosbonsing Road, Astorville Road, Corbeil Road, Quae Quae Road, Derland Road, Highway 94 and Centennial Crescent. In general, cyclists in East Ferris are described as "avid cyclists" and are strong and experienced or overall confident in their ability to cycle. Many bike for health and fitness reasons. There are citizens cycling to work in the North Bay. The defining characteristic of their routes is that they can do it safely, with defined and paved portions of the road, or via the Kate Pace Way. There are the recreational riders and many casual cyclists on a day trip looking to connect to the Voyageur Cycling Route or the Kate Pace Way. Then there are the interested but more concerned cyclists, including elementary school students who bike to school in Astorville and Corbeil in the early fall and late spring. They enjoy biking, but are nervous when there are cars next to them on the road. For example, parents in Hillside Subdivision point out that there are 40 young people, many of whom attend École Saint-Thomas d'Aquin, who want to bike to school.

Municipal Policies

The policies that have the highest degree of relevance to the ATP are listed in the following table. It is recognized that to be successful, the Active Transportation Plan must be aligned and linked to other plans and policies that guide the growth and development of East Ferris.

Table 5: Municipal Policies

POLICY DOCUMENT	CURRENT POLICY	POLICY CONSIDERATIONS
Provincial Policies	Ontario has a strong set of policies that support active transportation and accessible and universal design. These policies provide guidance to municipalities that can range from suggested actions to legislative requirements. In general, provincial guidance on active transportation tends to be in the form of suggestions and support rather than legislative requirements for municipalities.	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 (2018) Provincial Policy Statement (2020) Ontario Traffic Manual Book 18: Cycling Facilities (2021 update)
Official Plan (OP)	4.14 Within a predominantly rural Municipality, it is not deemed necessary to establish by Official Plan policy, the kinds of standards for Parks and Open Space that are deemed desirable for an urban Municipality. The Municipality of East Ferris has a significant amount of Crown land and rural land with many recreational sites and opportunities, including private and public walking trails, cross country ski and snowmobile trails, playgrounds and beaches throughout the Municipality. 8.2.3 Municipal Roads 1. The primary function of Municipal roads will be to provide access to abutting properties primarily for local traffic. 8.2.7 Council recognizes the importance of recreational trails to the economic base of the community as well as to recreation. Council's intent is to maintain the integrity of through trail systems and in particular, work with organizations involved in the development of the TransCanada Trail and other single or multi use trails that serve the residents of East Ferris.	The Northern Ontario Growth Plan encourages alignment between the OP and other long-term community strategies, such as a new ATP. At a minimum, Section 8.2.3 of the East Ferris OP should be amended to specify "transportation and infrastructure to include active transportation corridors identified in the East Ferris Active Transportation Plan." The municipality may also consider other modifications consistent with other community's OP, such as "a community where residents and visitors can move freely through the community on foot and bicycle, both on streets and trails." It should be noted that East Ferris has a mandatory OP review process scheduled for 2026, during which the ATP recommends that modifications be made in accordance with the above. If necessary, a site-specific amendment is still possible.
Zoning By-Law	In 2021, the Municipality is updating its Zoning Bylaw. There currently are no references to active transportation plans in the existing Zoning By-law.	The Zoning Bylaw is still in draft and these requirements should be amended to include bicycle parking specifications in schools and other major community locations. Also consider adding reference to opportunities for active transportation in new residential or commercial developments.

POLICY DOCUMENT	CURRENT POLICY	POLICY CONSIDERATIONS
Asset Management Plan	In 2021, the Municipality is updating its Asset Management. There currently are no references to active transportation plans in the existing Asset Management Plan.	Assess road speeds as part of the Plan's update.
Strategic Plan	The Active Transportation Plan aligns with Council's 4 year term and includes the development of an Active Transportation Plan, a Community Safety and Well Being Plan, a Parks and Recreation Plan, an updated Asset Management Plan and an updated Zoning Bylaw.	The 2021 Strategic Plan Report reveals that most of these actions are still in development. The timing is therefore ideal to align municipal planning and policies in support of active transportation.
Economic Development Strategic and Facilities Management Plan	The Plan approved in 2013 includes a section pertaining to recreation. There are no references or plans related to active transportation. As part of its 2019-2021 Strategic Plan, the Municipality has specified the need to update a plan for recreation that includes a focus on recreational amenities and programming and it specified incorporating the Active Transportation Plan into the Recreation Master Plan.	Incorporate the Active Transportation Plan as part of the planned Recreation Master Plan.
Community Improvement Plan (CIP)	Specific wording in the CIP that relates to ATP: Reconstruct/repair components of the Municipal road system; Improve traffic circulation and parking; Add or improve municipal facilities and properties such as parks, libraries and other recreational or cultural amenities; Encourage the expansion of existing and new economic activity in the municipality.	Amend the CIP to include more specific wording in support of active transportation. For example in other community CIPs we find wording such as e.g. "Improve traffic circulation as well as pedestrian and cyclist lanes or pathways."
Community Safety and Well Being Plan (CSWBP)	Approved by the Municipality and Ontario's Solicitor General in 2021, the Plan specifies that East Ferris aims to ensure that all residents can go about their daily activities without risk or fear of harm and that by 2023, the Municipality will see citizens' feeling of personal safety increase from 68% to 75%. It includes the following strategies: In collaboration with the Municipality's Public Works, implement traffic calming measures e.g. speed limits. Implement an education campaign on dangers of speeding. Support the development and implementation of an Active Transportation Plan.	Connect the CSWBP annual survey to the Active Transportation's performance management strategy.
Municipal Insurance Policies	Review the Municipality's insurance policy to see what modifications are required in support of the ATP.	The Municipality needs to ensure that its insurance policies have been assessed from an AT perspective and that they provide sufficient coverage.
Municipal Legal Requirements	Beyond insurance, the Municipality needs to ensure that it is well protected in the event of injury or death on its active transportation facilities.	Have the Municipality's solicitor review and amend as advised municipal standards, policies, bylaws and record keeping procedures to ensure East Ferris is in conformity with best practices for AT. Once the ATP is approved, have the confirmed priority road and trail facilities reviewed from a legal and risk management perspective.

Key Themes

From the input received and collected, the Plan identifies the following top themes to be addressed by the ATP.

Table 6: Key Themes (in order of importance)

1.	Walking and cycling in East Ferris must be developed to be easy, healthy and environmentally friendly activities.
2.	Studies show that communities with high rates of walking and bicycling know that conditions must be safe, pleasant, and convenient.
3.	The culture of East Ferris prioritizes vehicles as workers and school children seek to get to their destinations quickly.
4.	Many enthusiastic walkers and cyclists advocate for increased active transportation in East Ferris.
5.	There is a lack of appropriate shoulders or trails for safe walking, jogging,
6.	Active transportation deserves as much municipal attention as residential and commercial development ties.
7.	The municipality has begun to engage in traffic calming measures, such as speed camera signs.
8.	Neighboring communities are receptive to network connections.
9.	Existing facilities, such as the Voyer Trail and Wasi Ski Club, are available for off-road trail expansion.
10.	Municipal plans and policies need to be harmonized with AT.

FUTURE CONDITIONS: WHAT DO WE WANT TO ACCOMPLISH?

Goals and Visions

VISION, GOALS, STRATEGIES AND OBJECTIVES

The over arching theme is that active transportation is important to East Ferris and to address this, we need additional walking and biking facilities and we need to ensure conditions that provide a safe, enjoyable and convenient active transportation experience.

Vision **Walking and cycling in East Ferris are enjoyable, safe and convenient as fitness and recreational activities.**		
Goal #1 Establish a convenient and connected pedestrian and bicycle network in **East Ferris.**	Goal #2 Ensure a safe AT network for **pedestrians and cyclists.**	Goal #3 Increase participants who enjoy AT in **East Ferris.**
Strategies • Establish a comprehensive AT network through a phased implementation approach with traffic calming measures. • Increase the annual AT reserve by $75,000. • Align municipal policies and plans. • Position the AT Advisory Committee as part of Parks, Recreation and Culture. • Work with MTO to provide AT infrastructure on roads under their jurisdiction. • Work with regional partners to provide integrated AT connections. It is anticipated that with time, the network will support travel to work, to school and to social activities and thereby reduce greenhouse gas emissions. • Continue to provide more public washrooms near pedestrian and bicycle facilities.	Strategies • Educate pedestrians, bicyclists and motorists about sharing the road. • Identify and implement safety mitigation program to include traffic calming measures. • Review AT safety incidents and concerns as reported to the Municipality, PSB and OPP. • Improve lighting along the AT network, where appropriate. • Ensure that accessibility best practices are part of all AT investments.	Strategies • Update the Municipality's website and social media to promote the health benefits of AT. • Work with partners to provide AT education and training to elementary school students. • Develop a strategy and program to recruit and encourage volunteers to support AT-related programs and initiatives. • Support the development of regional AT tourism initiatives. Review the Northeastern Ontario Tourism Plan to include a strategy to promote East Ferris AT.
Objective #1 By June 2023, the Strategic Plan Report confirms the addition of 5 km to the AT network, 12 km by 2026, 12 km by 2031 and 25 km by 2041.	Objective #2 By June 2023, 75% of residents will report in the CSWB Survey that they feel safe walking or cycling in East Ferris, 80% by 2026, 90% by 2031 and beyond.	Objective #3 By June 2023 and beyond, 85% of residents will report in the CSWB survey to be in very good or excellent health.

Network Planning

To deliver on the Vision and Goals, the Task Force is recommending that the Municipality follow the following principles for the development of its AT network: safety, convenience, affordability and comfort.

Safety

All roads in East Ferris are evaluated from a safety perspective and are colour coded: red for the roads where safety could be improved, to orange or yellow for those with less and at the end the roads in green requiring no safety improvements. Please refer to Appendix 'A' for the complete road analysis. Safety evaluation criteria include speed limits, shoulder width, traffic levels, surface treatment, signage and AT activity.

Convenience

The AT network should be located where East Ferris users choose to be active and incorporate pedestrian and bicycle loops. For pedestrians, this means in the heart of Astorville and Corbeil, on roads along the shores of Lake Nosbonsing and Trout Lake, and in community developments. For cyclists, it means longer road segments along the Voyageur Route. For hikers and mountain bikers, this involves bush trails.

Affordability

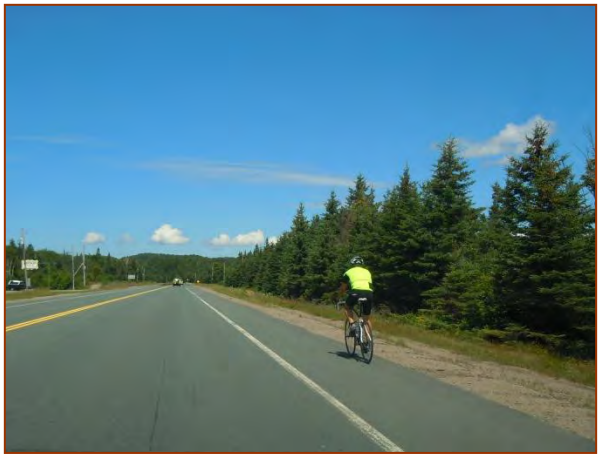
There is a continuum of facilities that can be designed for AT infrastructure and MTO in its 2014 Bikeway Design Manual identifies 17 different design options for on-road and off-road facilities. However constraints such as topography, existing development, lack of right-of-way, environmental issues and municipal budgets can preclude many options. One of the most important considerations is whether the existing roadways that have been identified as part of the cycling network, require roadway lane widening, or if the redistribution of existing space may accommodate a cycling facility.

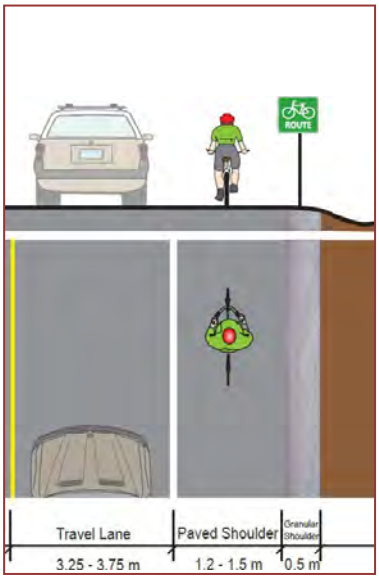
Where sufficient right-of-way is available, roadway widening provides a significant opportunity to improve provisions for cyclists through increased roadway lane width. It allows for the provision of facilities with a greater separation between motorists and cyclists. Significant budgetary efficiencies may be available when roadway lane widening projects for the implementation of cycling facilities are completed in conjunction with repaving or reconstruction projects that are also planned along the roadway corridor. This also reduces the potential for uneven joints in the pavement and may reduce overall construction costs.

In many cases, such as East Ferris roadways identified as potential cycling routes may not be candidates for widening and/ or reconstruction due to budgetary constraints. However, redistributing existing roadway space may prove to be an appropriate and affordable solution for the implementation of cycling facilities. In East Ferris, the Task Force is recommending two options that involve retrofitting: one that is on-road and the second that involves part of the road right-of-way but is off-road.

Signed Bike Route With A Paved Shoulder

This is a road with a rural road cross section that is signed as a cycling route which also includes a paved shoulder. A paved shoulder is a portion of a roadway which is contiguous with the travelled way and accommodates stopped and emergency vehicles, pedestrians and cyclists. It also provides lateral support for the pavement structure. A paved shoulder on a designated cycling route may include a buffer zone to provide greater separation between motorists and cyclists.

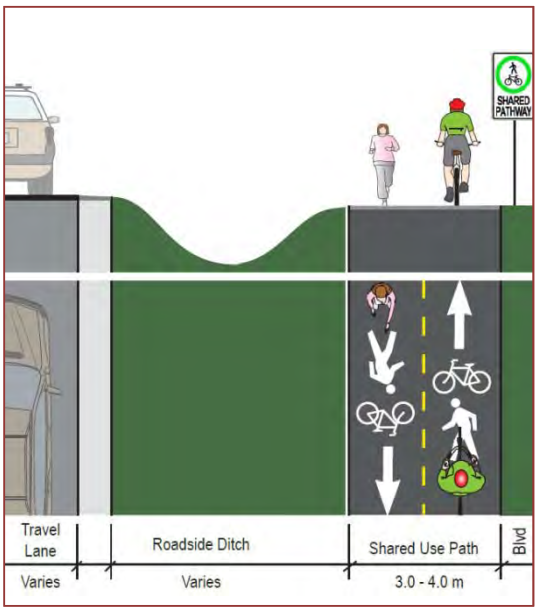


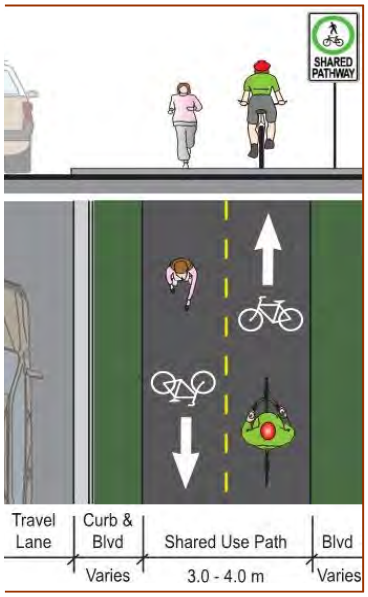


Figures 3- 5: Signed Bike Route

Two-Way In Boulevard Multi-Use Trails

Off-road multi-use trails may operate in the highway right-of-way or within its own independent right-of-way. Cyclists, pedestrians, and other active transportation users may be permitted on multi-use trails depending on the surface type and local municipal by-laws. Recreational motorized vehicles such as snowmobiles and all-terrain vehicles (ATVs) may be permitted on the trail. Suggested when on road improvements are not possible but there is right-of-way options next to the road that are available. Angel dust is often the recommended material for this option as it is low cost and easy to maintain and overall provides a fair experience for both pedestrians and cyclists.





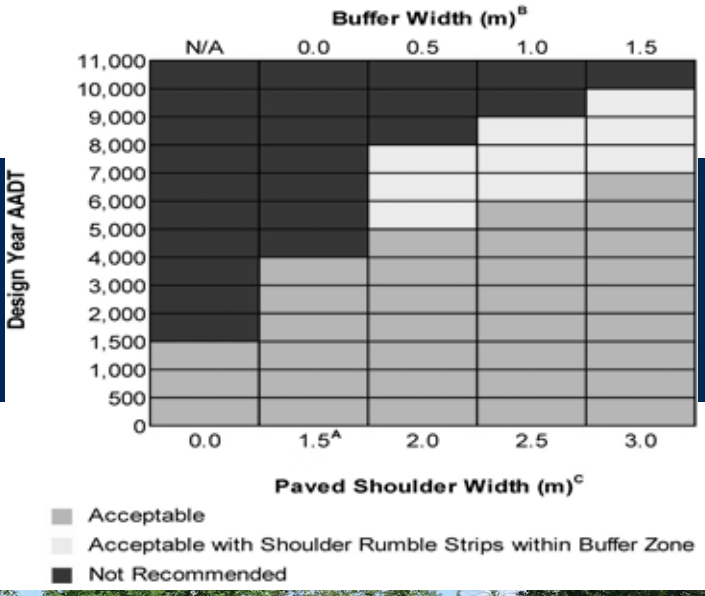
Figures 6-8: Two-Way Boulevard Multi-Use Trails

Comfort

The width of a mixed- use paved shoulder is very dependent on the traffic count. The following figure provides guidance for the selection of paved shoulder widths and buffer zones for rural two lane highways. On roads with low motor vehicle volumes, paved shoulders with a minimum width of 1.2 metres on either side of the road allow all road users to comfortably negotiate the space without the need for a robust separation.

On roads with higher vehicle volumes, a width of 1.5 metres is recommended, as well as some form of motor vehicle lane delineation by longitudinal markings on the roadway, such as a painted buffer zone or rumble strips. With the exception of Lake Hwy. 94 / Corbeil Road and Nosbonsing Road / Village Road, roads in East Ferris fall below the 4,000 average annual daily traffic count

Figure 9: MTO Paved Shoulder Widths



Priorities

By applying the criteria to the various road and trail connections within the municipality, it becomes clear what roads should be prioritized for implementation to develop a connected network of active transportation infrastructure around East Ferris. The 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 municipal staff and community consultation. Attempts are being made to encourage a network of pedestrian and bicycle loops within East Ferris as well as with neighbouring communities.

Table 7: Route Selection Criteria

Route Selection Criteria	**Criteria Definition**
Usage (Low use 3, Medium use 6, High use 9)	On road active transportation facilities are prioritized based on demand or number of users. It is given a higher weight given its importance.
Safety (Most safe 3, Medium safe 6, Least safe 9)	Active transportation routes are prioritized based on their need for improved safety. It is given a higher weight given its importance.
Feasibility (Least feasible 1, Medium feasible 2, Most feasible 3)	Given the constraint of a limited financial budget, projects are prioritized based on affordability, including those that align with other existing capital works projects or can be implemented more quickly or at lowest cost.
Community Connection Opportunity (Least opportunity 1, Medium opportunity 2, Most opportunity 3)	East Ferris is a community of villages and neighborhoods, so the proposed active transportation network should serve to connect citizens and improve community cohesion.
Voyageur Cycling Route Connection Opportunity (Least opportunity 1, Medium opportunity 2, Most opportunity 3)	As a cornerstone of the municipality's existing active transportation network, it is essential that the recommended expansions strive to connect to or extend the existing Voyageur Cycling Route system.
Scenic (Least scenic 1, Medium scenic 2, Most scenic 3)	Active transportation facilities should provide new ways to reach and cross scenic areas. For example, a loop around Lake Nosbonsing to include the south shore.
Funding Potential (Least potential 1, Medium potential 2, Most potential 3)	Projects that have a good chance of being funded or have staff resources to complete the work.

Table 8: Trail Selection Criteria

Trail Selection Criteria	**Criteria Definition**
Usage (Low use 1, Medium use 2, High Use 3)	Trail facilities are prioritized according to demand or number of users.
Usage Potential (Low potential 1, Medium potential 2, High potential 3)	To enhance use, trail facilities are prioritized based on their potential for expansion and increased usage.
Feasibility (Least feasible 1, Medium feasible 2, Most feasible 3)	Given the constraint of a limited financial budget, projects are prioritized by their cost effectiveness. This included those which either align themselves with existing capital works can be implemented more quickly or inexpensively or has good funding potential.
Scenic (Least scenic 1, Medium scenic 2, Most scenic 3)	Active transportation facilities should offer new ways to both reach and travel through scenic natural areas. Key examples include a loop around Lake Nosbonsing to include the south shore.

Table 9: Roads Listed by Priority	
LAKE NOSBONSING ROAD	Voyageur Cycling Route improved safety
#94- 2 km CORBEIL	Seniors and youth pedestrians improved safety / Village link
VILLAGE ROAD to CEMETERY	Seniors and youth pedestrians improved safety / Village link
ASTORVILLE ROAD	Pedestrians and cyclists improved safety / Village link
CENTENNIAL CRESCENT	Pedestrians and cyclists improved safety / Village link
CORBEIL ROAD	Voyageur Cycling Route / Villages link
MACPHERSON DRIVE	Trout Lake pedestrian health and fitness loop
TAILLEFER - CHAMPAGNE ROAD	Corbeil pedestrian health and fitness loop
VOYER ROAD	Corbeil pedestrian health and fitness loop
DENISE DRIVE	Astorville pedestrian health and fitness loop
EDMOND ROAD	Astorville pedestrian health and fitness loop
BOOTH ROAD	Astorville pedestrian health and fitness loop
DERLAND - EGLINTON SOUTH ROAD	Cycling connection to Callander / Voyageur Cycle Route
GROULX ROAD	Cycling connection to Chisholm / Country Road loop
VILLAGE ROAD CEMETERY TO BOUNDARY	Cycling connection to Chisholm / Country Road loop
QUAE QUAE ROAD	Cycling connection to Bonfield / Voyageur Cycling Route
SOUTH SHORE ROAD	Cycling connection to Bonfield / Lake Nosbonsing loop
BIG MOOSE ROAD	Lake Nosbonsing pedestrian health and fitness
NOSBONSING PARK ROAD	Lake Nosbonsing pedestrian health and fitness
GUILLEMETTE ROAD	Lake Nosbonsing pedestrian health and fitness
#94 – 10 km	Voyageur Cycling Route connection to Callander
#17 – PROGRESS COURT	Voyageur Cycling Route connection to North Bay
LAVIGNE ROAD – TO OUELLETTE	Lake Nosbonsing pedestrian health and fitness
OUELLETTE	Lake Nosbonsing pedestrian health and fitness

Table 10: Trails Listed by Priority	
WASI SKI TRAIL SEASONAL	Capacity for increased usage of hikers
TRAIL ASTORVILLE SENIORS VILLA	Seniors and youth pedestrians / Village loop
NEW TRAIL CORBEIL SENIORS VILLA	Seniors and youth pedestrians / Village loop
NBMCA CORBEIL TRAILS EXPANSION	Capacity for increased usage of hikers
VOYER TRAILS	Capacity for increased usage of hikers and mountain bikers
NEW TRAIL ONE MILE ROAD	Trout Lake health and fitness trail to connect to or to alleviate loss of Stepping Stones

IMPLEMENTATION STRATEGY

East Ferris
MUNICIPALITY · MUNICIPALITÉ

Implementation Strategy: HOW

Two strategic actions are recommended to enable the implementation of the ATP:
1. Traffic Calming: traffic control measures with a toolkit to guide the Municipality
2. Timeframe: the addition of amenities and programming over a detailed twenty-year schedule.

The growth of the Municipality of East Ferris means more vehicles on municipal roads. It also means recognition of the negative effects of motor vehicle use, including speeding. Although pedestrians and cyclists are legal road users in the same way as motorists, they are still vulnerable road users because they do not have the same protection in the event of a collision. The first part of the East Ferris ATP involves improving safety for all road users.

Extensive research, completed by the U.S. Department of Transportation Federal Highway Administration (FHWA), regarding speeding on main roads through rural communities such as East Ferris identified that this type of road presents both an enforcement challenge for the community and a perceived safety issue for the general public. Trying to solve an identified speeding problem along this type of rural corridor through law enforcement alone generally leads to an increase in compliance with the posted speed followed by a quick return to the speeding behaviour after enforcement is terminated. Acknowledging that this type of roadway not only serves local traffic, but also provides connectivity to the rest of the community at a relatively higher speed, the use of traffic control devices to reduce speed were identified as part of the FHWA – Speed Management: A Manual for Local Rural Road Owners:

- Advisory speed signs including pavement marking and speed activated signs;
- Changes on road design: lane narrowing, road diet;
- Road rehabilitation or reconstruction: horizontal deflections, vertical deflections, gateways;
- Enforcement: traditional and automated enforcement; and
- Education: public information and educational campaigns.

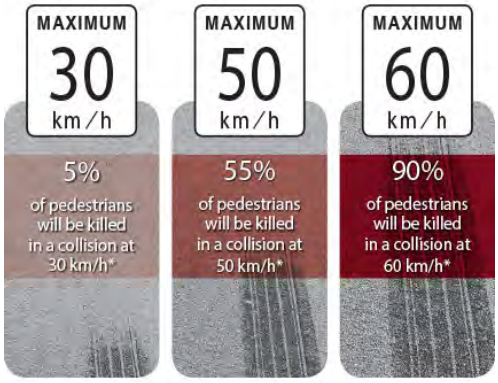
The Manual recommends measures that can be implemented quickly such as colored pavement and/or physical lane narrowing and signing, rather than deflection measures that may require road reconstruction. The Manual states that 'changing the look and feel of the road, the installation of this type of traffic calming measures transmits a message to the drivers that the function of the road is changing and may reinforce the need to reduce speed'.

As the number of concerns related to speeding has increased in East Ferris in recent years, the Municipality has begun to explore the expanded use of traffic calming measures with the use of radar speed signs. The Task Force is recommending that the Municipality pursue this direction to include added signage and the application of further traffic calming measures with the use of a standardized approach to examine when to apply such measures.

- Signage

In Ontario, unless otherwise posted, the maximum speed is 50 km/h in cities, towns and villages and 80 km /h elsewhere. At a municipal level, speed limits are set by Council as recommended by the Municipal Engineer after consideration of a variety of factors, including legislated speed, collision history and type, the speed at which the majority of drivers are currently using the road, design, classification and function of the road, on-street parking, type of road users, and traffic volumes. A number of East Ferris roads do not have an assigned speed limit and are therefore subject to the directive "50 km / h unless otherwise posted." As a first step, it is recommended that all roads be assigned a speed to avoid roads being incorrectly posted a 50 km / h speed limit.

Secondly, Install “Share the Road” signage on all AT network routes. Provide education on sharing the road to include specific information on speed kills. Give priority to working with the Police Services Board and Ontario’s Ministry of Transportation to obtain the Designation Community Safety Zone for Corbeil. Focus the 2022 Police Services Board Educational Campaign on the “Speeding Costs You” slogan and include in the 2022 budget funds for signage to be installed at every major entry point into East Ferris. Engage citizens in the encouraging road safety with a lawn sign campaign.



- Measures

In order to ensure consistency in the response to traffic concerns, the Task Force is recommending that the Municipality look for a standardized approach to analyze and prioritize requests. The following is a suggested standardized approach that stems from the Transportation Association of Canada (TAC)’s Canadian Guide to Traffic Calming on neighbourhood, local, collectors, and urban and rural arterial roads.

Confirm if the location is suitable for traffic calming. Elements considered as part of the scoring and ranking process are;

-School zones, parks, or designated pedestrian crossings;
-Road classification;
-Intensity of speeding;
-Traffic volumes;
-Number of collisions; and
-Percentage of cut-through traffic.

Complete a traffic operations review:

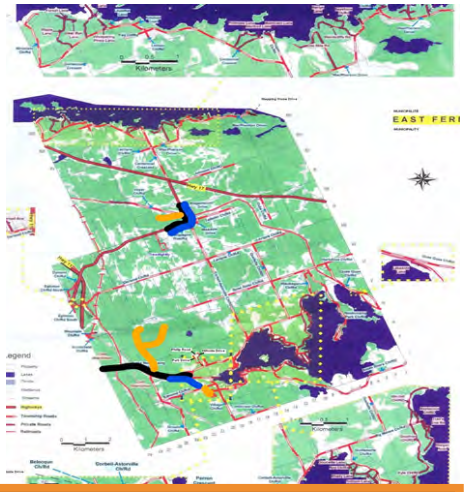
-Ensure that technical and safety warrants are met;
-Identify the most suitable type of traffic calming measure (Please refer to Appendix ‘B’ “Traffic Calming Toolkit” for the list of applicable traffic calming measures for East Ferris.)
-Approval; and implementation and evaluation of measure(s).

Implementation Strategy: WHEN

AT network segments are identified by priority. As noted earlier, the priority level may change over time based on other factors.

Table 11: AT Network of Roads & Trails				
Network - Roads	2023	2026	2031	2041
LAKE NOSBONSING ROAD	✓			
#94- 2 km CORBEIL	✓			
VILLAGE ROAD to CEMETERY		✓		
ASTORVILLE ROAD		✓		
CENTENNIAL CRESCENT		✓		
CORBEIL ROAD		✓		
MACPHERSON DRIVE			✓	
TAILLEFER - CHAMPAGNE ROAD			✓	
VOYER ROAD			✓	
DENISE DRIVE			✓	
EDMOND ROAD			✓	
BOOTH ROAD			✓	
DERLAND - EGLINTON SOUTH ROAD				✓
GROULX ROAD				✓
VILLAGE ROAD CEMETERY TO BOUNDARY				✓
QUAE QUAE ROAD				✓
SOUTH SHORE ROAD				✓
BIG MOOSE ROAD				✓
NOSBONSING PARK ROAD				✓
GUILLEMETTE ROAD				✓
#94 – 10 km				✓
#17 – PROGRESS COURT				✓
LAVIGNE ROAD – TO OUELLETTE				✓
OUELLETTE				✓
Network - Trails	2023	2026	2031	2041
WASI SKI TRAIL SEASONAL	✓			
TRAIL ASTORVILLE SENIORS VILLA	✓			
NEW CORBEIL SENIORS VILLA	✓			
NBMCA CORBEIL EXPANSION		✓		
VOYER TRAILS		✓	✓	
NEW TRAIL ONE MILE ROAD			✓	

2023 2026 2031 2041



East Ferris
2023
Active Transportation
Network Map

Primary Cycling & Long Distance Walking On-Road Trail :
Lake Nosbonsing Rd., Hwy. # 94 Corbeil

Primary Walking & Jogging On-Road Trail:
Village Road, Hwy 94 Corbeil

Primary Hiking & Mountain Biking Off-Road Trail:
Wasi Ski, Astorville Seniors Villas, Corbeil Seniors Villas

East Ferris
2026
Active Transportation
Network Map

Primary Cycling & Long Distance Walking On-Road Trail :
Lake Nosbonsing Rd., Astorville Rd., Corbeil Rd., Centennial Crescent

Primary Walking & Jogging On-Road Trail:
Village Road, Astorville Rd., Hwy # 94 Corbeil, Centennial Cres.

Primary Hiking & Mountain Biking Off-Road Trail:
Wasi Ski, Seniors Villas Astorville, Seniors Villas Corbeil, NBMCA

East Ferris
2031
Active Transportation
Network Map

Primary Cycling & Long Distance Walking On-Road Trail :
Lake Nosbonsing Rd., Astorville Rd., Corbeil Rd., Hwy. # 94, Centennial Crescent

Primary Walking & Jogging On-Road Trail:
Edmond Rd., Village Rd., Denise Drive, Booth Rd., Astorville Rd., Taillefer Rd., Champagne Rd., Hwy # 94, Voyer Rd., MacPherson Dr., Centennial Crescent

Primary Hiking & Mountain Biking Off-Road Trail:
Wasi Ski, Seniors Villas Astorville, Seniors Villas Corbeil, NBMCA, Voyer

2023 2026 2031 2041

East Ferris
2041
Active Transportation
Network Map

Primary Cycling On-Road Trail:

Lake Nosbonsing Rd., Groulx Rd., Village Rd. Hillcrest, Southshore Rd., Astorville Rd., Corbeil Rd. Quae Quae Rd. Ouellette Rd. Lavigne Rd. Derland Rd., Hwy. 94, Centennial Crescent

Primary Pedestrian On-Road Trail:

Edmond Rd., Village Rd., Denise Dr. Booth Rd., Astorville Rd., Big Moose Rd., Guillemette Rd., Nosbonsing Park Rd., Taillefer Rd. Champagne Rd., Hwy 94 Corbeil, Voyer Rd., MacPherson Dr., Centennial Crescent

Primary Hiking & Mountain Biking Off-Road Trail:

Wasi Ski, Seniors Villas Astorville, Seniors Villas Corbeil, NBMCA, Voyer, One Mile Rd.

IMPLEMENTATION PLAN

Costing

The following table was prepared to provide an overview of the estimated unit costs for active transportation facilities, road calming measures to include signage to implement the AT network.

Table 12: AT Network Estimated Unit Costs

Description	Unit	Value	Comments/Assumptions
Addition of a 1.5 m paved shoulder in conjunction with a road widening project	linear km	$300,000 to $350,000	Price for both sides of the road, assumes 1.5m AT lanes on both sides of the roadway (1.5m x 2 sides = 3.0m). Includes adjustments to culverts, catch basins driveway entrances, asphalt and sub-base, signs & pavement markings. Road project funds all other improvement.
Addition of a 1.5 m paved shoulder in conjunction with existing road reconstruction / resurfacing	linear km	$125,000 to $150,000	Price for both sides of the road, 1.5m paved shoulder. Assumes AT project pays for additional granular base, asphalt and edge line.
Widening of paved shoulders on existing roadway to 1.5 m for AT lanes	linear km	$40,000 to $60,000	Price for both sides. Includes grinding of existing pavement, markings, signs and line painting.
New granular surfaced off-road multi-use trail within road right-of-way (or encroaching on Crown land or other publicly available land)	linear km	$75,000 to $100,000	Price for 3m wide, compacted stone dust surface in complex site conditions (includes cost of clearing). Price depends of scale / complexity of project.
Addition of rumble strip to paved shoulder	linear km	$3,000	Price for both sides.
Granular shoulder sealing	linear km	$3,000	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.
Removable bollard	each	$750	Basic style (e.g. 75mm diameter galvanized), with footing.
Flexible bollards	each	$400	Should be placed at 10m intervals where required. Cost depends on product type used.
Planters for chicanes	each	$400	
Temporary speed bumps	set of 2	$1000	
Large sign for “speed fines & demerit points”	each	$1000	
Signs	each	$200	Price for one side of road.
Bike / Pedestrian road marking	each	$200	

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 recent municipal and Discovery Routes projects.

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.

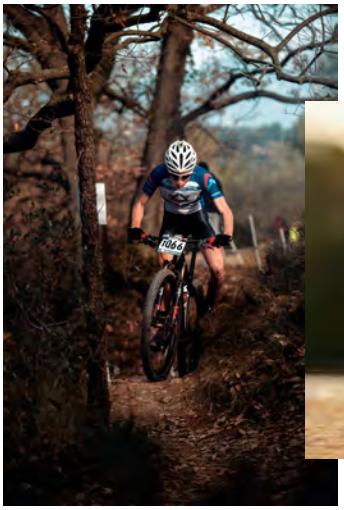
4. Applicable taxes and permit fees are additional.

Table 13: Implementation Plan Budget					
Road Network	Active Transportation Solutions and Actions	By 2023	By 2026	By 2031	By 2041
LAKE NOSBONSING ROAD	Price for 3.9 km of paved shoulders on both sides of the road to 1.5m. To examine 3.9 km of rumble strip on both sides between vehicular lanes and paved shoulders. Large sign “speed fines / demerit points” at boundary. Price for 4 “share the road” and “speed limit” signage.	$488,000 $1,000 $800			
#94 - Corbeil	Cost to be assumed by MTO for confirmation and signage for Community Safety Zone designation and for widening 2 km of paved shoulders through the village of Corbeil .				
VILLAGE ROAD	Price for 2.1 km of 1.5 m paved shoulders on both sides of the road. To examine.4 km of rumble strip and if applicable to price for installation between vehicular lanes and paved shoulder on curb at Edmond Road curb. To examine removable bollards and if applicable to price for installation from top of hill at Booth Road to Edmond Road corner Price for 4 “share the road” and “speed limit” signage and 2 “School Zone” or 2 pavement markings		$210,000 $1,200		
ASTORVILLE ROAD	Price for 3.38 km of 1.5 m paved shoulders on both sides of the road to be resurfaced. To examine removable bollards or speed cushion or speed bump and if applicable to price for installation near Blanche Road to corner with Corbeil and Big Moose Roads. Price for 4 “share the road” and “speed limit” signs.		$507,000 $800		
CENTENNIAL CRESCENT	Price for 7.2 km of 1.5 m paved shoulders on both sides of the road. Examine how to add shoulders on treated road to provide a harder packed treatment. Large sign “speed fines / demerit points” at boundary. Price for 8 “share the road” and “speed limit” signs.		$887,500 $1,000 $1,600		
CORBEIL ROAD	Price for 6.7 km of 1.5 m paved shoulders on both sides of the road. Examine how to limit to widening the road shoulders and not having to resurface the whole road. Consider rumble strips between the vehicular lanes and the paved shoulders, especially on corners once lanes widened. Price for 8 “share the road” and “speed limit” signs.		$670,000 $1,600		
MACPHERSON DRIVE	Price for 5.3 km of 1.5 m paved shoulders on both sides of the road in conjunction with some road widening near bridges and corners. Price for 8 “share the road” and “speed limit” signs. Awaiting road redevelopment, consider traffic calming measures e.g. speed adjustments on segment, speed cushion.			$1,855,000 $1,600	

Table 13: Implementation Plan Budget					
Road Network	Active Transportation Solutions and Actions	By 2023	By 2026	By 2031	By 2041
TAILLEFER & CHAMPAGNE ROADS	Price for 2.2 km of 1.5 m wide compacted stone dust surface on one side. Price for 4 “share the road” and “speed limit” signs.			$82,500 $800	
VOYER ROAD	Price for 2.7 km of 1.5 m wide compacted stone dust surface on one side. Price for 4 “share the road” and “speed limit” signs.			$101,250 $800	
CATHERINE DRIVE	Price for 0.58 km of 1.5 paved shoulders on both sides of the road to be resurfaced. Assign a speed limit. Price for 4 “share the road” and “speed limit” signs.			$64,000 $800	
EDMOND ROAD	Price for 1.9 km of 1.5 m wide compacted stone dust surface on one side. Assign a speed limit. Price for 4 “share the road” and “speed limit” signs.			$71,000 $800	
BOOTH ROAD	Widen blind entrance at top of “côte croche” for pedestrian traffic			$3000	
DERLAND ROAD	Price for 6.7 km of 1.5 m paved shoulders on both sides of the road. Examine how to limit to widening the road shoulders and not having to resurface the whole road. Consider rumble strips between the vehicular lanes and the paved shoulders, especially on corners once lanes widened. Price for 8 “share the road” and “speed limit” signs.				$945,000 $1,200
EGLINGTON ROAD SOUTH	Price for .59 km of paved 1.5 m wide added to both sides. Price for one “speed fines and demerit points “sign at boundary.				$73,750 $1,000
GROULX ROAD	Price for 3.7 km of 1.5 m compacted stone dust surface on both sides of the road. Price for one “speed fines and demerit points“ sign at boundary. Price for 6 “share the road” and “speed limit” signs.				$370,000 $1,000 $1,200
VILLAGE ROAD SOUTH TO BOUNDARY	Price for 1.2 km of 1.5 m compacted stone dust surface on both sides of the road. Price for one “speed fines and demerit points“ sign at boundary. Price for 2 “share the road” and “speed limit” signs.				$120,000 $1,000 $400
QUAE QUAE ROAD	Price for 7.4 km of 1.5 m compacted stone dust surface on both sides of the road. Price for one “speed fines and demerit points “ sign at boundary. Price for 6 “share the road” and “speed limit” signs. Awaiting road redevelopment, consider traffic calming measures.				$740,000 $1,000 $1,200

Table 13: Implementation Plan Budget					
Road Network	Active Transportation Solutions and Actions	By 2023	By 2026	By 2031	By 2041
SOUTH SHORE ROAD	Price for 5.8 km of 1.5 m compacted stone dust surface on both sides of the road. Price for one “speed fines and demerit points “ sign at boundary. Price for 4 “share the road” and “speed limit” signs. Awaiting road redevelopment, consider traffic calming measures.				$580,000 $1,000 $800
BIG MOOSE ROAD	Price for 2.9 km of paved 1.5 m wide paved shoulders on both sides of the road. Price for 2 “share the road” and “speed limit” signs. Awaiting road development explore use of flexible bollards, temporary chicanes or temporary speed bumps from corner with Astorville and Corbeil Roads to Big Moose Boat launch.				$362,000 $400
NOSBONSING PARK ROAD	Price for 2 “share the road” and “speed limit” signs. Awaiting road redevelopment, consider traffic calming measures.				$400
GUILLEMETTE ROAD	Price for 2 “share the road” and “speed limit” signs. Awaiting road redevelopment, consider traffic calming measures.				$400
#94 – 10 KM	Cost to be assumed by MTO. Seek wider buffered shoulders with rumble strips on both sides of the road. Seek addition of more “share the road” signage as well as “speed fines and demerit point” sign at boundary.				
#17 PROGRESS COURT	Cost estimated at $160,000 to be assumed by MTO and City of North Bay. Advocate in support this link using the 150 m road allowance between Progress Court and Twin Lakes Road to create a bike route.				
LAVIGNE ROAD CORBEIL TO OUELLETTE	Price for .59 km of paved 1.5 m wide added to both sides. Price for one “speed fines and demerit points “sign at boundary.				 $400
OUELLETTE ROAD	Price for 4 “share the road” and “speed limit” signs.				$800
	SUBTOTAL ROAD NETWORK	$489,800	$2,280,700	$2,181,550	$3,202,950

Table 13: Implementation Plan Budget					
Trail Network	Active Transportation Solutions and Actions	By 2023	By 2026	By 2031	By 2041
WASI SKI TRAIL	Collaborate with Wasi Ski Club to expand the 51 km use of the trails from May to October that includes resolving matters of risk management for the use of the parking lot, naming the non-winter activity under a name different then Wasi Ski and add appropriate signage that clarifies the different leadership. Price includes insurance, signage and promotion.	$50,000			
ASTORVILLE SENIORS VILLA	Price includes funds to convert the .5 km road allowance to a 3m wide chip covered pedestrian pathway.	$60,000			
CORBEIL SENIORS VILLA	Collaborate with Seniors Villa to add 1 km of trails to Villa property in the heart of Corbeil. East Ferris to connect municipal properties in the heart of Corbeil e.g. existing and future sites of the Municipal Office and Memorial Park to the Seniors Villa trail.	$10,000			
NBMCA CORBEIL	Collaborate with NBMCA to expand the trails in Corbeil.				
VOYER TRAILS	Collaborate with Discovery Route to complete the Voyer Trails. East Ferris to place a barrier at the Voyer Road trail entrance to prevent vehicle traffic. East Ferris to examine with FedNor reinstating the trail sign that was damaged by vandalism. Collaborate with the Voyer family to develop the AT facility e.g. Voyer Foundation and related program(s). Engage citizens residing along Voyer Road who share in the trail vision that was put forward by founder Michel Voyer.		$50,000		
SNOW MOBILE TRAILS	Examine logistics and the opportunity (Belecque Road, Village Road to Chisholm)				
OLD ASTORVILLE SCHOOL PROPERTY	Keep top of mind when meeting with the existing or future property owner to encompass as part of discussions and imposed conditions				
	SUBTOTAL TRAILS NETWORK	$120,000	$100,000		
Education & Promotion	Active Transportation Solutions and Action	By 2023	By 2026	By 2031	By 2041
SIGNAGE - LAWNS		$2000	$4000		
TOTAL		$611,800	$2,384,700	$2,181,550	$3,202,950



Funding

The total estimated cost to implement all recommended AT facilities and programming as identified in Table 13 is $8,381,000.00.

It is expected that some of the capital costs related to the construction network facilities will be included within planned annual local roadway construction or resurfacing projects, or other municipal projects.
Wherever possible, the Municipality will work with other agencies and levels of government to establish cost sharing agreements or seek grant opportunities to off-set the total project costs. Potential organizations and agencies include FCM's Green Municipal Fund, Infrastructure Canada's National Cycling Strategy, FedNor, NOHFC, Trillium Ontario, Corporate Funds e.g. MEC, private investors, business community etc.

Following are the projects for which it is the pursuit of grant funding is anticipated:

Table 14: AT Network Funding

Lake Nosbonsing Road and a portion of Village Road	$450,000	FedNor
MacPherson Drive	$1,600,000	National Cycling Strategy
Groulx Road & Village to Boundary / The Country Loop	$185,000	With Chisholm & grant funding
Quae Quae Road & South Shore Road / The Lake Nosbonsing Loop	$300,000	With Bonfield & Chisholm & grant funding
Wasi Ski Trail	$25,000	Tourism
Voyer Trail	$50,000	FedNor & Tourism
Signage, One Mile Road etc...	$250,000	Parkland Dedication
Other (other funding opportunities are anticipated over 20 years)	$2,140,000	Roadwork e.g. Astorville, Centennial, Corbeil
Total	$5,000,000	
Total estimated network development cost $8,381,000 less potential for funding of $5,000,000 leaves an estimated $3,381,000 to be funded by the Municipality over 20 years. This amount = $169,050 per annum for the development of a safe and convenient AT network. As the estimated funding excludes opportunities for the annual roadwork program to impact the development of these facilities, or furthermore for some of the roadwork to be completed directly by the staff of the Municipality's Public Works Department, an annual AT Reserve contribution of $100,000 is deemed appropriate. The Municipality has already established a Reserve and an annual contribution of $25,000. It is recommended to increase this amount by $75,000 starting 2023.		

CONCLUSIONS

CONCLUSIONS & NEXT STEPS

The ATP provides a comprehensive approach to guide East Ferris' progress and investments in walking and cycling over the next 20 years. It provides a course of action that reflects the community's priorities and available resources. It has been developed based on expertise and engagement with the East Ferris community over a 10-month period. Through this public engagement process, many community members provided input into the development plan at various phases.

The Task Force would like to thank all of those who were involved in the development of the ATP which will lay the groundwork for future collaboration, coordination and communication related to the planning, design and implementation of AT initiatives within the Municipality.

Once approved, the responsibility for delivering on the objectives of the Active Transportation Plan will be the that of the Parks, Recreation and Culture Committee.

Objective #1

By June 2023, the Strategic Plan Report confirms the addition of 5 km to the AT network, 12 km by 2026, 12 km by 2031 and 25 km by 2041.

Objective #2

By June 2023, 75% of residents will report in the CSWB Survey that they feel safe walking or cycling in East Ferris, 80% by 2026, 90% by 2031 and beyond.

Objective #3

By June 2023 and beyond, 85% of residents will report in the CSWB survey to be in very good or excellent health.

REFERENCES

REFERENCES

Ontario Traffic Manual Book 15: Pedestrian Crossings (2016)

Ontario Traffic Manual Book 18: Cycling Facilities (2021 update)

MTO's Complete Street Planning Tour By Bike: Ontario's Cycling Tourism Plan (2017)

Minimum Maintenance Standards for Municipal Highways (2018)

Provincial Policy Statement (2020)

#CycleON Strategy (2013) and Action Plan 2.0 (2018)

National Active Transportation Policy: Canada's First Strategy to Promote the Construction and Use of Trails, Pathways and Bikeways (2021)

Transportation Association of Canada (TAC)'s Canadian Guide to Traffic Calming (the TAC Guide)

British Columbia Active Transportation Guide

Alberta Active Transportation

U.S. Department of Transportation Federal Highway Administration (FHWA) Speed Management: A Manual for Local Rural Road Owners (2012)

Multiple Active Transportation Plans: North Bay, Temiskaming Shores, Sudbury, Barrie, Smiths Falls, Ottawa, Toronto, London, Kingston, Merritt, Pelham, Minto, Leamington, King

Multiple Traffic Studies and Plans: Caledon, Ottawa, Toronto

Share the Road Program

Canada Walks: Showcase of Walk Friendly Communities

APPENDICES

Appendix 'A'

Complete Road Analysis

Table 8: Road Network Issues & Opportunities

Highways Colour coded by AT safety priority Most Lesser Least None	Current Speed	Length in km	With Shoulder	Road Network Issues & Opportunities
Hwy #94	80 km	12 km	10 km	For AT planning, Hwy. 94 is divided into 2 parts: 2 km in the heart of Corbeil village and the remaining 10 km east and west of Corbeil village. There is concern for school children and other pedestrians walking along Hwy. 94 in the village.
Hwy #17	90 km	6 km	6 km	Centennial Cres. and Hwy. 17 is a popular route connecting North Bay for East Ferris cyclists. There is a wide shoulder on Hwy. 17 that is perfect for biking, but there is no safe or legal way to enter to North Bay through the interchange.

Roads Colour coded by AT safety priority Most Lesser Least None	Road Class	Current Speed	Length in km	With Shoulder	With Min. Shoulder	Road Network Issues & Opportunities
Astorville Rd.	Minor Arterial	50 km	3.4 km		3.4	A main AT route that is part of the Voyageur Cycling Route, heavily used by cyclists and pedestrians. Safety could be improved due to hills and curves, narrow shoulders and high traffic levels with speeding issues. The presence of many private driveways makes it more difficult to establish a paved mixed-use lane
Centennial Crescent	Minor Arterial	60 km	7.2 km		7.2	A main AT route that is a well used surface treated road with high pedestrian and bicycle traffic. Safety could be improved as speeding is an issue. MTO expected Centennial Crescent to be a bicycle route, which is why the wide paved shoulder begins on Highway 17 at the western junction of Centennial Crescent leading to North Bay. Local residents have consistently called for improved shoulders for AT use.

(Alphabetical) Roads Colour coded by AT safety priority Most Lesser Least None	Road Class	Current Speed	Length in km	With Shoulder	With Min. Shoulder	Road Network Issues & Opportunities
Corbeil Rd.	Minor Arterial	70 km	6.7 km	6.7 km		A major AT route that is part of the Voyageur Cycling Route with high usage by cyclists and medium pedestrian traffic. Safety could be improved with the high level of traffic and speeding as issues. The paved shoulders are less than the preferred width for the speed limit. However, the road platform itself does not require widening to allow for a wider paved shoulder, thereby being less expensive to remediate.
Lake Nosbonsing Rd.	Major Arterial	80 km	3.9 km		3.9 km	A main AT route that is part of the Voyageur Cycling Route, heavily used by cyclists and sparsely used by long-distance walkers & joggers. Safety could be improved, as highlighted in an expert study by Discovery Routes. There are many opportunities to increase AT use, given its connection to Wasi Ski centre for off-season trail use and the loop with Groulx, Edmond and Village roads. The municipality recently completed the paving of the road and prepared the shoulders for eventual paving. Funding programs are currently being considered.
Macpherson Dr.	Collector	60 km	5.3 km		.8 km	Very busy road with pedestrians, joggers and cyclists. Safety could be improved as speed is an issue and there are some dangerous turns. It connects to Stepping Stone trails, which are used in all seasons, as well as Centennial Cres, where many long-distance walkers go.
Village Rd. (to cemetery)	Minor Arterial	50 km	2.9 km		2.9 km	Well-used main AT route with high foot traffic and moderate bike traffic. Heavy vehicle traffic and speeding is a concern as this is a school safety zone. Safety could be improved at the corner with Edmond Road, where westbound traffic crosses over into the paved shoulder used by pedestrians. Important opportunity for AT pedestrians, as Village Road loops with a) Groulx, Edmond and Lake Nosbonsing Roads, b) with Booth Road and c) with Senior Villas' Trail to Catherine Drive. Loop c) is important for pedestrians who cannot handle the hills in the village leading to the Astorville Freshmart. Increased interest from cyclists given recently renovated roads in Chisholm, e.g. Village Rd. south and Alderdale Rd.

(Alphabetical) Roads Colour coded by AT safety priority Most Lesser Least None	Road Class	Current Speed	Length in km	With Shoulder	With Min. Shoulder	Road Network Issues & Opportunities
Big Moose Rd.	Minor Arterial	50 km	2.9 km		2.9 km	It is heavily used by pedestrians and joggers, but not much used by cyclists. The road is narrow, winding and has many private driveways. In summer, large trucks and boats travel to the Big Moose boat launch, adding to safety issues, as does traffic to tourist camps and seasonal properties.
Catherine Dr.	Collector	50 km*	.58 km			High pedestrian use and important role in village loop opportunities. In particular there is an opportunity to connect Catherine Drive to Edmond Road via the unopened road allowance at the end of Catherine Drive.
Champagne Rd.	Collector	50 km*	.20 km			Used by cyclists on the Voyageur Route to connect to Hwy. 94, as well as by pedestrians to cross the village of Corbeil. It is also a popular route when there are events at Memorial Park, and will increase when the new municipal office opens on the former St. Theresa School site.
Derland Rd.	Minor Arterial	60 km	6.3 km		6.3 km	This is a secondary AT road that is also well used by pedestrians and cyclists. The road is narrow and winding, but has less traffic. This road has more potential for cycling as it is scenic and loops with Corbeil Road and roads into Callander and to the Kate Pace Way.
Groulx Rd.	Minor Arterial	60 km	3.7 km		1.4 km	This is a tertiary At road that connects to Chisholm and Powassan. Speed is a concern as the road is narrow and winding in places and requires reconstruction. It has untapped recreational potential as part of a pedestrian loop with Edmond and Lake Nosbonsing Road. It will also be increasingly used by cyclists as Chisholm has just renovated Alderdale. Rd.
Quae Quae Rd.	Minor Arterial	70/60 km	7.4 km		7.4 km	Quae Quae Road is part of the Voyageur Cycle Route that connects Bonfield to East Ferris and it has average pedestrian and bicycle traffic. There are reports of speeding and increased vehicle and truck traffic on a narrow and in places winding road. It is believed that Bonfield will improve its stretch of road in 2022. There are motivated citizens who reside on Quae Quae Road who want to work at improving the roads AT potential.
ShouthShore Rd.	Minor Arterial	50/60 km**	5.8			The western portion of the South Shore Road is moderately used by pedestrians. Speed is an issue as the road is narrow and winding in places and needs to be rebuilt. The road has untapped recreational and tourism potential as a gravel road, as it is scenic and could be part of a Lake Nosbonsing loop, with the possibility of cost sharing with Bonfield and Chisholm Townships.

(Alphabetical) Roads Colour coded by AT safety priority Most Lesser Least None	Road Class	Current Speed	Length in km	With Shoulder	With Min. Shoulder	Road Network Issues & Opportunities
Booth Rd.	Local	50 km*	1.3 km			It is a portion of the Astorville Village Loop, which is heavily used by pedestrians but with little vehicular traffic. It is included in the yellow priority given the pedestrian traffic of the elderly and youth and its connection to "La Côte Croche" which has a blind entrance. On a few occasions, the municipality has attempted to make the road one-way, but citizens have objected.
Edmond Rd.	Collector	50 km*	1.8 km			It forms part of the Astorville Village Loop, which is moderately used by pedestrians and vehicles. This is a yellow priority due to pedestrian traffic from seniors and youth, and speeding is a problem. Potential to expand the village loop with Groulx, Lake Nosbonsing and Village roads.
Eglington Rd. South	Local	50 km	.59 km			Only the short section connecting to Derland Road should be considered.
Guillemette Rd.	Collector	50 km	2.6 km		2.6 km	There is average pedestrian traffic with increased residential development. It is a dead-end road limited seasonal traffic.
Lavigne Rd. (Corbeil to Ouellette)	Minor Arterial	60 km	2.0 km			There is average pedestrian and bicycle traffic as it serves as an alternate route to the Voyageur bike path. Speeding and large trucks are sometimes a problem.
Nosbonsing Park Rd.	Collector	60 km	.16 km		.16 km	There is medium pedestrian use, however increased residential development. It is a dead end road with some limited seasonal traffic.
Ouellette Rd. (Big Moose to Lavigne)	Minor Arterial	60 km	2.0 km			Medium pedestrian & cycling traffic as it serves as an alternate route to the Voyageur Cycle Route. Speeding and large trucks a problem.
Taillefer Rd.	Collector	50 km	2.0 km			Average pedestrian traffic of Corbeil residents. Although it is a dead-end road, it is rated yellow due to elderly pedestrians and the presence of businesses and trucks. In addition, it has the potential for increased pedestrian activity as it loops with Meadow Drive and Corbeil Road.
Village Rd. (Cemetery to Boundary)	Minor Arterial	60 km	1.2 km		1.2 km	Currently, little pedestrian and bicycle traffic, but many vehicles and speeding is a problem. In the longer term, bicycle traffic is expected to increase as Chisholm has renovated Village Road to the south and promotes bicycling.
Voyer Rd.	Collector	50	2.1			Average pedestrian use by Corbeil residents. Yellow due to pedestrian traffic from Ferris Glen students. Paved only to school. Dead end road that connects to Voyer Trail. If the problems with the Voyer Trail can be resolved, signage should be installed on Voyer Road to alert cyclists to this alternate off-road route to North Bay.

Many of the following roads experience high pedestrian use but are maintained in the green category as they are either dead end roads or have limited vehicle traffic.
For the most part they have not been assigned a speed limit and therefore fall in the 50 km category. Many however are better suited to a lower speed that would be in support of the AT Plan e.g. Blanche Road, Perron Crescent are better suited to 40 km.
ASTOR STREET, BAYVIEW ROAD, BELECQUE ROAD, BERTHA ROAD, BLANCHE ROAD, CARRIÈRE ROAD, CEDAR BAY ROAD, DÉGAGNÉ ROAD, DUBÉ ROAD, DUGAS ROAD, DURRELL ROAD, DYMENT ROAD, EDMOND ROAD WEST, EGLINTON ROAD NORTH, FAY ROAD, HILLCREST ROAD, HILLSIDE ROAD, HURTUBISE ROAD, JOHNSON ROAD, KNUTSON COURT, LAUNDON LANE, LEROUX ROAD, MARINA ROAD, MOUNTAIN ROAD, MEADOW DRIVE, MIRIMISHI ROAD, PARGETER DRIVE, PARK ROAD, PHILIPS DRIVE, PERRON CRESCENT, RIDGEMOUNT DRIVE, ROGER ROAD, SCOTTSFIELD ROAD, SOUTH BAY LANE, STEPPING STONE LANE, TRAPPERS COURT, TREADLIGHTLY ROAD, WAUKEEGAN ROAD.

TRAIL NETWORKS

Table 8– East Ferris Trail Network Issues & Opportunities

East Ferris Trail	Trail Length (km)	Trail Network Issues & Opportunities
Wasi Ski Trail	51	The Wasi Ski Club has a lease with the Crown that runs from October to April for its winter activities. They have a full year lease for the use of the parking lot and the chalet. The Club indicated that the property is available for another organization to use during the summer, for example for hiking trails or mountain biking. There would be minimal costs involved as the Wasi Ski Club volunteers do an outstanding job of maintaining the trails.
NBMCA Corbeil Trail	3.4	The trails are owned and managed by the Conservation Authority. East Ferris recently received funding to improve the recreation complex behind the Corbeil municipal office, where the entrance to the trail is located.
Voyer Trail	6	The trails are owned in part by the municipality, Discovery Routes, Crown land and private property. Discovery Routes has been the lead organization, although it has withdrawn from further development until the complex private property issues near Pinewood Park Drive and Birches Road are resolved. Nevertheless, there are untapped hiking and mountain biking opportunities, whether the trail is open to Birch's Road.
Stepping Stones	18	This trail system is located primarily on Crown land and has several loops connecting Long Lake and Pan Lake between MacPherson Drive, Johnson Road and Highway 17.
NEW TRAIL Astorville Seniors Villa	.5	This is an unopened road allowance that has been used for many years as an unofficial trail to connect Catherine Drive to Edmond Road. It is used by students walking to school, residents of Senior Villas who live at the residence at the end of Catherine Drive, as well as those who live in the villas on Edmond Road.
NEW TRAIL Corbeil Seniors Villa	1	Seniors Villas' residents in Corbeil seek a trail systems that would allow them to connect to Bill Vrebosch Park, the Seniors Active Living Centre at Corbeil Park Hall and the NBMCA Corbeil Trail. This trail would also serve the residents of the village and would be the beginning of a pedestrian loop that would connect Voyer Road, Champagne Road, Memorial Park and Taillefer Road.
NEW TRAIL One Mile Road	2	The municipality owns land at the end of One Mile Road. As part of a residential development project on One Mile Road, there is an opportunity to use the land that has been dedicated to the municipality as "parkland" to create a small, organized trail with outdoor fitness equipment to create a circuit.
Snowmobile Trails		There is an extensive network of snowmobile trails that run through the municipality, such as Belecque Road. Some of these trails cross public land and could be converted to all-season hiking and mountain biking trails.
Astorville Old School Site		While we have not received a proposal and are not 100% certain of what the site will become, it is possible that with a complete redevelopment of the property, we could build a trail link through the site. This would increase the walkability in the Village of Astorville between places like the arena, the Senior Villas, the Astorville Freshmart, with the goal of increasing the number of people walking to run errands, to the park or to the arena, tennis court, etc.

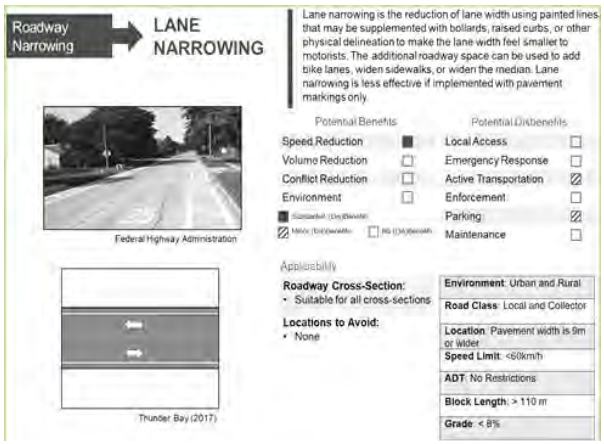
Appendix ‘B’
Traffic Calming Toolkit

Rumble Strips
Rumble strips are simply cuts in the pavement where the edge line is placed. After the rumble strips are ground in, the white line is marked right over the rumble strips, making it more visible in the rain and the rumble strip provides warning to a motorist who strays from the driving lane.

Additional Options – Signage and Surface Treatment

Additional Options – Enforcement and Education

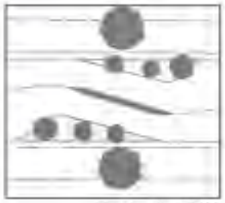
Additional Options – Roadway Narrowing



Additional Options – Horizontal and Vertical Deflections

Horizontal Deflection → **CHICANE, TWO-LANE**

Spacing Toronto (2011)



Thunder Bay (2017)

Chicanes are curb extensions that alternate from one side of the road to the other. In general, a series of three or more curb extensions are used to force vehicles to slow down and travel in an S-shaped path through the chicane. Two-lane chicanes allow vehicles to remain in their travel lane. They are not as effective at reducing vehicle speeds as one-lane chicanes and may not reduce vehicle volumes. The safety benefits of reduced vehicle speeds may be offset by an increased potential for conflict as motorists have been found to cross the road centerline to maintain a straight trajectory.

Potential Benefits		Potential Disbenefits	
Speed Reduction	▨	Local Access	☐
Volume Reduction	☐	Emergency Response	☐
Conflict Reduction	▨	Active Transportation	☐
Environment	▨	Enforcement	☐
		Parking	■
		Maintenance	▨

Applicability

Roadway Cross-Section:
- Only 2 lane roadway (one each direction)
- Min. roadway width of 12 m

Environment: Urban

Road Class: Local (one-way, two-way), Collector (two-way)

Location: Midblock

Speed Limit: ≤ 50 km/h

ADT: Min. 750 vpd or 100 vph during peak hour
For roads with bike routes < 1000 vpd

Block Length: ≥ 110 m

Grade: ≤ 8%

Cost

High

Vertical Deflection → **SPEED CUSHION**

City of Ottawa

NACTO (2013)

Speed cushions are a narrower version of a speed hump and are installed in the middle of each travel lane. They are generally six feet wide and designed to slow passenger vehicles while allowing vehicles with larger wheel bases (emergency vehicles and buses) to pass unimpeded. Speed cushions should be considered rather than speed humps on emergency response and transit routes. Speed cushions are preferable on collector roads.

Speed Reduction	■	Local Access	☐
Volume Reduction	▨	Emergency Response	▨
Conflict Reduction	■	Active Transportation	▨
Environment	▨	Enforcement	☐
		Parking	▨
		Maintenance	▨

Roadway Cross-Section:
- 2 lanes (one each direction)

Environment: Urban and Rural

Road Class: Local

Location: Mid-blocks

Speed Limit: <50km/h

ADT: between 1000 to 4000

Block Length: > 110 m

Grade: < 8%

Cost

Moderate

Vertical Deflection → **SPEED HUMP**

NACTO (2013)

NACTO (2013)

Speed humps are a vertical structure spanning across the width of a roadway (excluding gutters) designed to slow vehicle speeds. Motorist discomfort is related to the size of the speed hump and the speed they are travelling. Speed humps are typically installed in series.

Speed Reduction	■	Local Access	☐
Volume Reduction	▨	Emergency Response	■
Conflict Reduction	■	Active Transportation	▨
Environment	▨	Enforcement	☐
		Parking	▨
		Maintenance	▨

Roadway Cross-Section:
- 2 lanes (one each direction)

Environment: Urban and Rural

Road Class: Local

Location: Mid-blocks

Speed Limit: <50km/h

ADT: between 1000 to 4000

Block Length: > 110 m

Grade: < 8%

Cost

Moderate