Sioux Narrows – Nestor Falls Trail Concept Plan

DRAFT FOR DISCUSSION

SCATLIFF + MILLER + MURRAY

visionary urban design + landscapes

April 6th, 2020

SCATLIFF + MILLER + MURRAY

visionary urban design + landscapes

April 6th, 2020

Heather Gropp
Sioux Narrows – Nestor Falls
5521 Highway 71
Box 417
Sioux Narrows, ON P0X 1N0

RE: Sioux Narrows – Nestor Falls Trail Concept Plan

Dear Heather,

Scatliff + Miller + Murray (SMM) is pleased to submit this trail concept plan to assist with the development of a multi-use trail network in and around Sioux Narrows-Nestor Falls (SNNF). As per our meeting on November 28th, 2019, this will include a number of components that can be phased in at the appropriate times, starting with the development of a stacked loop trail network located just northeast of the school in Nestor Falls.

The following trail concept plan presents a multi-use trail system with options for a variety of users of differing abilities. It generally follows the Parks Canada Agency's (Parks Canada) Trail Concept Planning Process. The process includes six phases as follows:

Phase 1 – Planning Context
Phase 2 – Analysis
Phase 3 – Vision, Goals, and Objectives
Phase 4 – Gap Analysis
Phase 5 – Trail Concept Plan
Phase 6 – Trail Implementation Plan

The first four phases of the planning process can be considered the Trail Concept Plan Foundation, which provides strategic direction for the development of the subsequent phases. The Parks Canada process uses a Trail Concept Plan Engagement Process to gather input for the Foundation. As part of this process SMM helped facilitate a public engagement session with community members and Council.

This document is based on input provided by the Township of Sioux Narrows-Nestor Falls. This initial concept plan can be used as a starting point for future discussions or formal engagement with additional groups and potential trail users, especially as the later expansion stages of the concept

plan are approached. As such, it can be considered a living document that can be revised as appropriate.

1.0 Planning Context

The purpose of this phase is to identify which factors have an influence on the trail concept planning and understand their implications.

1.1 Review Legislation, Policies, and Strategic Directions

The applicable legislation and policies are largely dictated by land ownership. This concept plan considers six primary groups with a vested interest in the area including:

- The Township of Sioux Narrows-Nestor Falls;
- Onigaming First Nation;
- Naotkamegwanning First Nation (formerly Whitefish Bay First Nation);
- Sabaskong First Nation;
- The Province of Ontario; and,
- Private landowners.

The first phase of the trail network planned for the area east of the school in Nestor Falls does not conflict with any known property ownership issues, making it an ideal place for phase one.

Given that there are a number of private landowners adjacent to the total area being considered, it is recommended that applicable legislation and policies be confirmed with the Township. Where private landowners are interested in allowing access, land use agreements should be established.

The strategic direction indicated by the Township is to create a destination with trails as a primary attraction that brings people to the area. Lake of the Woods, including the Sioux Narrows-Nestor Falls area, offers some of the best terrain for mountain bike trail development in northwestern Ontario, as well as Manitoba. We envision the development of several world-class, purpose-built mountain bike multi-use trail networks. This will create a destination area, with each of the individual trail facilities complementing each other.

1.2 Review Trail Standards, Best Practices, and Guidelines

Parks Canada has published state-of-the-art Trail Principles (November 2017), Trail Planning Process (July 2017) and a Trail Classification System complete with design specifications (attached). It is recommended that these standards and specifications are followed. In addition, it is recommended that Type 2 and 3 trails be designed and constructed according to International Mountain Bicycling Association (IMBA) guidelines, especially for purpose-build mountain bike trails (Trail Solutions, IMBA's Guide to Building Sweet Singletrack, 2004). The IMBA guidelines, and trail difficulty rating system (Managing Mountain Biking, IMBA's Guide to Providing Great Riding, 2007) are compatible with Parks Canada standards and are referenced by Parks Canada in their trail planning process.

1.3 Identify and Review Relevant Plans and Studies

SMM is not aware of any additional plans or studies that are relevant to this project. Ontario Parks, Destination Northern Ontario, and other local trail advocacy groups should be consulted for any relevant documents.

1.4 Scan the Market

The trails being considered will appeal to a wide variety of users including:

- Mountain biking;
- Hiking;
- Trail running;
- Bird watching;
- Dog walking;
- Snow shoeing;
- Cross-country skiing; and,
- Fatbiking.

Mountain biking has been growing world-wide, largely due to its appeal to a very wide demographic. The sport can be enjoyed by children as young as three years old, up to senior citizens. Within that age range, there is a wide range of riding abilities spanning from beginner to professional level racer. It is therefore a sport that can be enjoyed for an entire lifetime with the promise of constant progression, new experiences, and overall health and wellness.

In the past, mountain biking has primarily flourished in mountainous regions. However, this is changing since a large portion of the mountain biking demographic does not want or need large amounts of elevation change. For example, the Cuyuna Lakes area in Minnesota has achieved IMBA Epic status. The mountain bike trails in Cuyuna have revived a decommissioned mining community into a mountain bike tourism destination without any mountains. Further, high level competition courses are being built in areas with very little elevation change but with features that challenge professional level riders (e.g. the 2015 Pan Am Games Course at Hardwood Hills, Ontario and the 2020 Canada Summer Games Course in Dauphin, Manitoba).

1.5 Identify Target Markets (Demand)

A detailed evaluation of current and potential markets has not been conducted as part of this project. Ontario Parks and Destination Northern Ontario should be consulted to determine if any current studies are available.

The target trail users would include those listed in Section 1.4. Broadly, it is envisioned that the trail network would appeal to and develop three primary markets:

1) Local residences (all seasons) – Provide a trail network and facility for local residences to foster a healthy community with a stronger connection to the outdoors and various provincial parks along the route;
2) Families on weekend trips to the area – Having a unique attraction/trail experience linking tourism spots, such as Provincial Parks, would pull current visitors to the area;

3) Serious outdoor enthusiasts – This includes people looking for challenge and diversity in their trail experience. This market could be developed through the hosting of events such as adventure races, mountain bike races, fatbike races, and ultra-marathons.

2.0 Analysis

The purpose of this phase is to assess the current existing state of the trail system including identification of current trail users, issues, constraints, and opportunities.

2.1 Current Trail Inventory and Classification Assessment

There are currently several trail networks sprinkled throughout this region. These include the Boreal Trail, as well as the trails in and around Rushing River Provincial Park and Sioux Narrows Provincial Park. Most of these trails are double track width with a grass/organic surface and are well-used by residents and visitors alike. These trails could be classified as Type 1 (without hardened surfaces) or Type 2 trails with easy to moderate difficulty. There is some signage for these trails, including trailhead maps and directional signs. However, some of the trailhead maps are not up-to-date with new paths that have been added to the trail network over time. Trail maintenance appears to be minimal, with some mowing in summer and grooming for cross-country skiing in winter.

2.2 Identify Current Trail Users

The current trail users are as follows:

- Local trail runners – generally consisting of adults;
- Cyclists;
- Dog walkers – including families;
- Private/local residents (all seasons).

Target groups for growth include local families, and families that travel to the area to visit the provincial parks. Inclusion of purpose built mountain bike trails will also attract intermediate level recreational riders up to advanced/expert riders. There is a shortage of such trails in northwestern Ontario and Manitoba, and this demographic will travel long distances for high quality trail experiences. Having a trail-based attraction near Sioux Narrows-Nestor Falls will pull these markets to the area and increase tourist spending in the area.

2.3 Identify Issues and Constraints

Potential issues and constraints to further trail development include, but may not be limited to, the following:

- Funding sources;
- Establishing land use agreements with private landowners to develop trails on their property;
- Local residents and private landowners concerned about an increase in unauthorized use by motorized vehicles; and,
- Existing entertainment facilities and associated infrastructure which will allow for hosting large events and races that take advantage of the trail network.

2.4 Identify Site Opportunities

There are many characteristics of the general area that make it attractive to further trail development and, if developed, will increase tourism to Sioux Narrows-Nestor Falls. Below are some of the opportunities associated with further trail development in this area:

- Canadian Shield terrain with interesting topography and beautiful scenery;
- Existing camping facilities, resorts, and outfitters;
- Several First Nations in the area with opportunities to support First Nations tourism and businesses;
- Three Provincial Parks in the area;
- An existing outdoor tourism industry (i.e. mainly fishing and hunting) with opportunities to cross-sell different outdoor experiences;
- Close proximity to some remote wilderness, yet with long accessible baselines (e.g. north-south running access ways such as Highway 71 and the Ontario snowmobile trail network) that assist with construction and rescue planning;
- Close proximity to Sioux Narrows-Nestor Falls as a source of supplies/groceries, gas stations, restaurants, hotels, bed and breakfasts; and
- Close proximity to the TransCanada Highway (i.e. very good access) with opportunities to connect with Kenora.

3.0 Vision, Goals and Objectives

The purpose of this section is to identify the long-term desired state of the trail network, as well as the goals and objectives to achieve the vision.

3.1 Develop Trail System Vision Statement

Sioux Narrows-Nestor Falls, situated in the heart of Lake of the Woods, offers stunning views and dynamic topography that is ideally suited for the development of world-class mountain bike and multi-use trails. The overall objective is to create a tourism destination based on trails. Further, we envision creating an experience that caters to families wanting to experience some remote wilderness (without being too remote), with multiple options for choosing the appropriate distance of a given excursion. That is, there will be multiple exit and entrance points. Added together, a longer wilderness experience can be created for more experienced users.

The vision statement for the trail system should be established through a strategic planning session conducted with the Township of Sioux Narrows-Nestor Falls, Destination Northern Ontario, and local outdoor enthusiasts (e.g. current trail users).

As a starting point, the following points can be considered in the formulation of a vision statement:

- Complement and be mutually beneficial to Sioux Narrows-Nestor Falls, Ontario Parks, the Province of Ontario, and neighbouring First Nations;
- Attract families and youth;
- Promote healthy, active outdoor living;
- Be respectful of and celebrate First Nations culture in the area;

- Provide for trail user progression up to a high level of endurance competitions such as ultra marathons or sanctioned mountain bike races;
- Create a unique trail experience that attracts people to the area and boosts the local economy through tourism.

3.2 Identify Big Moves

Based on discussions to date, and SMM's observation of the potential of the area, the following two big moves are suggested.

1) Establish a stacked loop trail system that provides a high-level cross-country experience for hiking/running/birdwatching, mountain biking, cross-country skiing, snowshoeing, fatbiking. The key to the stacked loop system is all ages and all abilities will have something for them. The focus of the stacked loop will be the Nestor Falls area with connections to Caliper Lake.
2) Create a long north-south (Trans-Canada Trail style) connection between the three Provincial Parks (Rushing River to Sioux Narrows to Caliper Lake). This would create a broader network of trails on the available land owned or managed by Sioux Narrows-Nestor Falls or the Province of Ontario. This would further highlight the diverse topography and create a more remote wilderness experience.
3) Within the Nestor Falls-Caliper Lake stacked loop system, there is an opportunity for installing a long suspension bridge that, in itself, would be a tourist attraction.

Each of these big moves will have sub-components as discussed later in this document.

3.3 Develop Goals and Objectives

The following goals are consistent with the big moves presented above. Each goal achieves a number of objectives.

Goal 1 – The first goal is to develop a high-quality, multi-use stacked loop trail system at the Nestor Falls school site. The primary objective is to create a trail system for kids and adults to build their skills and experience in riding trails. The objective of the stacked loop system will be to attract new trail users to "friendly" trails initially and offer further progression and challenge for the growing user. This has the further objective of bringing families looking for an entry level trail experience to the area. Opportunities to progress to more advanced wilderness trails will prevent boredom and appeal to experienced users.

Goal 2 – The second goal is to create a north-south connection between the three Provincial Parks, utilizing the diverse topography and highlighting the natural beauty of the area. This is a long term goal that obviously will require significant involvement and support by Sioux Narrows-Nestor Falls Council, Ontario Parks, the Province of Ontario, and neighbouring First Nations. The main objective of this goal is to provide a true wilderness experience that can be accessed through the stacked loop system. This will attract the experienced outdoorsperson. It will also allow beginner and intermediate level trail users the opportunity to increase their wilderness experience by taking small ventures into the remote wilderness that are accessed from the stacked loop system.

Overall, the primary objective is to increase tourism and associated economic benefits to the Sioux Narrows-Nestor Falls area. Achieving these goals will result in the creation of a tourism destination

based on trails. It will encourage visitation and usage by novice to advanced trail users, and will expand the types of trail users.

4.0 Gap Analysis

The purpose of this phase is to identify components that need to change or be added, to align with strategic direction, achieve the vision, address the issues and constraints, realize the opportunities, and connect with target markets.

4.1 Identify Gaps

The following gaps in the current trail offering have been identified:

- Lack of a purpose built mountain bike trails (note: purpose built mountain bike trails can be used by all other trail users, but the other way around is not always the case);
- Limited trailhead facilities such as kiosks with maps and wayfinding information, parking, washrooms, and picnic areas;
- Limited on-trail signage for wayfinding and difficulty rating classification to assist new trail users;
- Limited number of organized loops with various user abilities in mind; and
- No formal connection between destinations in the area.

The following presents a proposed trail concept plan that is aimed at filling the above gaps such that the goals and objectives can be realized.

5.0 Trail Concept Plan

This section presents a proposed trail concept plan that can be considered a draft at this time. It will be revised as this document is refined through further input from various stakeholders (e.g. private landowners, Ontario Parks, and neighbouring First Nations). It is fully anticipated that it will evolve over time as stakeholder input is gathered.

The attached Trail Concept Plan Maps includes the following sections.

5.1 Develop Draft Concept Options

The draft concept is based on a stacked loop system with access to an Epic North-South Connection Trail. Stacked loops are based on easier entry level trails being situated near a parking and trailhead facility area, and more challenging trails that are located further away and looping off of the easier trails. The following presents the stacked loop system by general trail type and difficulty, with the components required to fill the above gaps integrated where appropriate.

Trailheads, Easier Trails, and Kids Skills Loop

The first consideration in a stacked loop system is convenient access to entry level trails that cater to young families and inexperienced trail users. The trailhead areas should act as hubs that attract new trail users to the area by removing common intimidation factors that tend to deter people that are new to outdoor activities. For example, maps and signage will be appropriate for a stacked loop system with simple wayfinding along entry level trails. Trailhead infrastructure should include

parking, maps, washrooms, picnic areas, bike repair/wash stations, and immediate access to the entry level trails.


Example of a Type 1 - Easier trail (green on Trail Concept Plan Map)




Examples of low consequence kids skills features and nature playground features that could be incorporated along a Kids Loop

Several options exist for the location of the trailhead area and supporting facilities. They include:

- Bass Lake (existing facilities near the airport and the Red Pine Trails) would be the main trailhead for the stacked loop system discussed further below;
- Caliper Lake Provincial Park;
- Sioux Narrows Provincial Park (and the Aspen Trails);
- Bunny Lake; and
- Rushing River Provincial Park.

All these locations are integral in the big picture vision discussed further below. They could be phased in or, in the case of existing parks, upgraded as the nearby trails are developed.

Examples of trailhead facilities including a picnic shelter (with composting toilet in the background), trailhead signage/message board, and bike tool/wash station

A Kids Skills Loop could be constructed immediately adjacent to the Bass Lake trailhead facilities. It would consist of about 500 m of 1.5 m wide single track trails to 3 m wide “ride arounds”. Low consequence obstacles constructed of wood and rock would be placed along various loops to allow skill development. Ride arounds would be provided so that the rider would have the option to skip a given obstacle. This area would be designed with stations that could accommodate a coaching of with up to 80 kids (i.e. approximately 8 stations that groups of 10 could rotate through).

A key feature for this area would be a pump track. A pump track is a series of rollers and berms that teach riders to use their momentum without pedalling (think pumping on a swing set). They are enjoyable for all ages of riders and are inherently safe since speed can’t be generated without first developing the bike handling skills required to handle the speed.

The Kids Skills Loop is located close to the local school and could be integrated with the existing Red Pine Trails (which have a direct connection to the school yard). This would allow for school programming either during gym class or after school programs. Activities such as cross-country running, outdoor classes, mountain biking, snowshoeing, cross-country skiing and orienteering are examples.

Examples of kids skills area features and pump track

Intermediate and Advanced Trails

The proximity of the entry level trails to remote wilderness in the area provides the opportunity to build in progression from the easier trails to that remote wilderness. This will be achieved through the next, intermediate layer of the stacked loop system. These trails are shown in blue on the attached Trail Concept Plan Maps.

The purpose of this layer of the stacked loop is to allow more experienced users to venture away from the easier green trails, increase the distance traveled, and provide a deeper wilderness experience. It also provides a connection to the more advanced mountain bike trails and may eventually provide a connection to more remote wilderness trails in the area.

The moderate and advanced trails would be Type 2 and Type 3 trails according to the Parks Canada Classification System. These trails are typically naturally surfaced trails with a tread width ranging from 1 m to 1.5 m for Type 2 (wider singletrack) and from 02.5 m to 1 m for Type 3 (narrower singletrack). These trails would be suitable for hiking, trail running, bird watching, snow-shoeing, and winter fat biking. The moderate trails would be bidirectional with signage at intersections and periodically along segments.


Examples of Type 2 to Type 3 – intermediate trails (blue on Trail Concept Plan Map)



Examples of more advanced backcountry wilderness trails

More advanced or technical trails can be incorporated with a variety of technical trail features that will prepare the user for trail conditions that may be encountered along remote wilderness trails in other areas or in the mountains. It is important that the technical trail features themselves are designed with progression in mind such that users can select an ability appropriate option for each feature. In the Canadian Shield, these technical trail features are often natural rock formations that lend themselves to hiking or mountain biking. Designing easier lines, or ride-arounds, will be important to allow the trails to be enjoyed by intermediate users that are progressing their skills.

In the Red Pine Trail area, there is a side slope suitable for developing three flow trails. A flow trail is a one-way downhill trail with bermed corners, rollers and jumps. Important are the design grades, which are selected to minimize both pedaling and braking. This creates one of the most sought after user experiences in mountain biking. The three trails would consist of a beginner trail, intermediate trail, and an advanced trail.

Examples of flow trails

Similar trails at Bison Butte in Winnipeg and Cuyuna in Minnesota are highly enjoyed by children (as young as 7 years old), right up to professional mountain bike racers. Well-designed and built flow trails appeal to all levels of riders. Mountain bikers travel long distances to ride good flow trails, and as observed in the above two examples, they will ride those trails repeatedly. For these reasons, it is recommended that this trail be built by an experienced mountain bike trail building contractor. It will be an important attraction to the area that if built quickly and properly, will help launch the area as a mountain biking destination in the short term.

Epic North-South Connection Trail

A key attraction to the Sioux Narrows-Nestor Falls area could be a long north-south-running connection trail. This type of trail offering is absent in northwestern Ontario (and the Prairies), therefore it would attract people to the area from a wide range. The vision behind this trail would be to create a true Canadian Shield wilderness experience for beginner to expert, multi-sport trail users. This kind of experience is what the Great Trail (formerly known as the Trans Canada Trail) should be and the proposed trail would likely qualify as a segment.

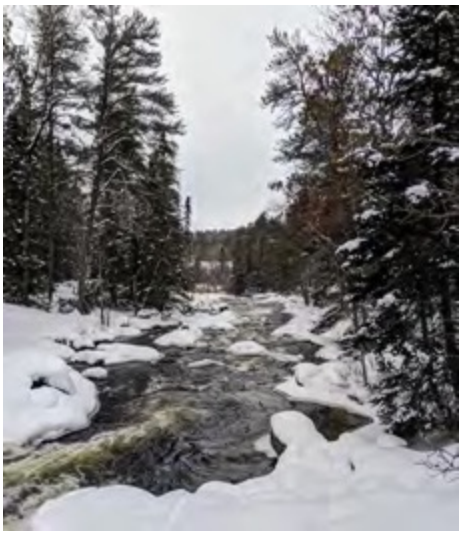
The Type 1 to Type 2 trail would have a difficulty rating of easy. Multiple exit/entry points would allow users of different abilities to choose a suitable distance. The challenge for advanced users would be in selecting longer distances (i.e. in the order of 50 km to 100 km excursions). Bikepacking would be a key target demographic. User experience would focus on lots of sweeping turns on the undulating Canadian Shield terrain, and stringing together key viewpoints and destinations. The viewpoints in themselves will make the trail enjoyable for all levels of ability. The scenery of the area is stunning and simply cannot be described in words. It deserves to be visited, and this proposed trail would provide this untapped experience.

Examples of key destinations (from north to south, and discussed further below) include:

- Rushing River Provincial Park;
- Bunny Lake;
- Sioux Narrows Provincial Park and the existing Aspen Trails;
- Sioux Narrows Business District;
- Whitefish Bay First Nation (who are currently building a skateboard park and are considering a bike park);

- Sabaskong Bay First Nation;
- Bass Lake Stacked Loop (presented above);
- Nestor Falls Business Area; and
- Caliper Lake Provincial Park (with a connection to the existing Boreal Trails).

Rushing River Provincial Park is technically out of the study area, however, we see this park as an important destination along the route. The park is already one of the more popular destinations and camping areas in the region, notably for families. As such, it would make sense to use the trail to show visitors that there is more to the south. The proximity of the park to Highway 17 also positions it as a point along the way of a possible connection to Kenora.



Bunny Lake has existing parking and washrooms at a beautiful spot along Highway 71. Currently there is nowhere to walk from this node. The terrain around Bunny Lake lends itself well to some green trail loops that also use the main trail. This loop would be a short offering that would introduce new trail users to the experience they could expect at other segments of the trail.

Sioux Narrows Provincial Park is an obvious node along the trail, given its central location and existing camping facilities. The existing Aspen Trails are located to the east of the park and are a suitable distance and difficulty for young families. There are several steep sections of the trail that could easily be rerouted to make them safer for young and novice users. Nature play features would be a welcome addition to these trails, providing destinations along the way and breaking up the journey for younger visitors.

The trail would coincide with the highway through the Sioux Narrows Business District. This routing is out of necessity due to restricted amounts of land without private

ownership as well as to bring the trail users to the local businesses. It is envisioned that where the trail shares the same route as the highway that it is delineated from vehicular traffic following current active transportation best practices. The design of those segments is beyond the scope of this report.

Of significant importance is the connection with two First Nations including Whitefish Bay First Nation and Sabaskong Bay First Nation. Whitefish Bay is currently in the process of building a skateboard park, and is considering a bike park that would be a welcome node along the route. Additionally, there are two borrow pits adjacent to Whitefish Bay and along the proposed route that would also lend themselves to potential bike park development. Sabaskong Bay is located at a key location with access to Lake of the Woods to the south and Kakagi Lake to the north. The potential for further trail development south of Kakagi Lake is enormous.

There are more First Nation communities in the surrounding area that could benefit from further trail linkages. Indigenous tourism is currently being supported by various grants and could offer business opportunities to the various communities. Guiding and outfitting services are an example of existing services in the area that could branch into using non-motorized modes of transportation. This could be the way to cross-sell between outdoor tourism sectors such as hunting and fishing with the identified trail user demographics. This would be a unique combination of experiences.

We also envision the trail being used along with the teaching and celebration of First Nations culture. Outdoor classroom offerings based on First nations culture and understanding of the land would benefit both Indigenous and non-Indigenous children.

The local First Nation communities should all be engaged in the vision for the area and the overall process of trail development. This may also include naming of the trail, segments of the trail, and/or various nodes of interest along the trail. First Nations in the area that should be engaged include:

- Yellow Girl First Nation;
- Whitefish Bay First Nation;
- Sabaskong Bay First Nation;
- Rainy River First Nation;
- Big Grassy River First Nation;
- Rainy Lake First Nation;
- Manitou Rapids First Nation (who have already started a fatbike program for youth, and need more trail offerings)

The Bass Lake Stacked Loop was discussed in detail above. The epic north-south trail passes through the stacked loop.

For similar reasons as the Sioux Narrows Business District, the trail would again share the same route as the highway through the Nestor Falls Business District. Again, the routing is largely out of necessity, but it is important to bring the trail users to the local businesses for refreshments, supplies, and lodging.

Caliper Lake Provincial Park is at the southernmost end of the proposed route. Existing amenities include camping, washrooms, playground, and public beach area, making it an ideal trailhead location. There is an existing (1.7 mile) nature hiking trail in the park that goes through a beautiful mature forest with little understory. The existing Boreal Trails network is located about 2 km to the north. Several loops are proposed that extend from the park to the Boreal Trails, as well as connecting to the main epic trail to the east. The sideslope grades in the park are well suited to the development of easy to intermediate mountain biking and hiking trails that would be popular with families and casual trail users. The park is a hidden gem that could be developed with trails to pull visitors through the business districts and to the south end of the study area. The park hosts a music festival in the summer, which would complement cross-selling opportunities to tourists.

5.2 Establish Desired Trail Types and Rating

Based on the above general trail descriptions and the Trail Concept Plan Maps, the following table presents a summary of the proposed network on land currently available for further trail development. The trail type follows Parks Canada's Trail Classification System which is attached for reference. The Trail Difficulty Rating, indicated by the map symbol, also follows the Parks Canada system as well as the IMBA system.

Map Symbol	Trail Type	Description and Comments	Distance
Green (Easier)			
	1 and 2	Multi-sport stacked loop trails and epic north-south connection trail	170 km
Blue (Moderate Difficulty)			
	3	Stacked loop mountain bike trails	7 km
Black (Difficult)			
	3 and 4	Stacked loop mountain bike trails	19 km
		Total Distance:	196 km

5.3 Identify Improvements to Existing Trails

The existing trails in the area are included in the trail concept plan maps. In most cases, the existing trails are wide double track routes with a natural surface soil or grassed tread. None of the existing trails provide a modern user experience for mountain bikers. However, many of these trails could be connected into the wider trail network to create a continuous trail system.

Following consultation with the nearby residents, it may be desirable to restrict the access points of the private trails with choke features (e.g. boulders, bollards or staggered fences) in order to discourage the use of the network by unauthorized motorized vehicles.

5.4 Identify Other Recommendations

Several recommendations have been embedded in the above discussion, and along with others, are listed below for consideration:

- First Nations Engagement – It is recommended further engagement with neighbouring First Nations be pursued. The purpose would be to present the concept plan and listen to any

concerns. Engagement with Naotkamegwanning First is especially important as a small portion of the proposed trail runs over their land.

- Marketing/Promotions – The development of a marketing plan can help ensure that visitors are aware of the trail network and the different opportunities therein. It should include methods for engaging with a variety of user groups, such as mountain bikers, runners, families, and cross-country skiers.
- Construction of the first stacked loop trail by an experienced mountain bike trail building contractor – The first stacked loop trail will be a hallmark feature of the trail network that will bring people to SNNF. It is important that this segment is a world-class trail in order to put the area on the map. The faster it is constructed, the sooner SNNF will begin to realize returns on the overall project. An experienced contractor will have specialized equipment and be able to build the trail in a very short period of time.
- Training of a local crew – Bringing an experienced trail building contractor to build the first stacked loop trail provides an opportunity to train a local crew in the state-of-the-art methods for construction machine-built trail. It is recommended that the selected contractor be a member of the Professional Trail Builders Association (PTBA).
- Risk management plan and expert review – A risk management plan should be developed for the trail network (discussed further below in Section 6.4). Consideration should be given to having a trail litigation expert review the site and risk management plan. In the event of any future litigation, that expert would be available to support the team.
- Environmental Considerations – At a minimum, a review of potential endangered species should be conducted to determine the need for an EA, if any.

5.5 Revise Draft Concept and Develop Final Concept

The concept trail plan presented in this document is considered a draft for SNNF to use and build upon. The final concept will be developed following discussion and documented feedback from key stakeholders which may include, but not be limited to:

- Destination Northern Ontario;
- The Township of Sioux Narrows-Nestor Falls;
- Private landowners;
- Ontario Parks representatives; and
- Neighbouring First Nations representatives.

5.6 Cost Estimates

The following costs should be considered rough order of magnitude (ROM) costs. They are largely based on unit rates from similar recent projects. Some costs have been based on IMBA estimates that have been converted to Canadian dollars (Bike Parks, IMBA`s Guide to New School Trails, 2014). The phases correspond to the proposed schedule in Section 6. Detailed design and contract administration fees are estimated at approximately 10% of the cost of construction, which is consistent with current landscape architecture and engineering guidelines.

Phase	Component	ROM Cost	
1	Bass Lake Inner Stacked Loop System	Low Estimate	High Estimate

	Green kids trails (1.8 km)	$57,600	$75,600
	Green loop from Bass to Red Pine (4.5 km)	$99,000	$144,000
	Green, blue and black flow trails (600 m)	$21,000	$27,000
	Kids skills features on skills loop	$13,000	$33,000
	Risk management plan	$3,000	$4,000
	Wayfinding signage design, supply, and installation	$3,000	$6,000
	Trailhead signage	$15,000	$30,000
	Training of local trail building crew by PTBA member	No charge	No charge
	Detailed design, drawings and contract administration	$21,400	$32,400
	Subtotal:	$233,000	$352,000
2	Caliper Lake Trails		
	Green trails (13 km)	$416,000	$546,000
	Risk management plan update	$2,000	$3,000
	Wayfinding signage design, supply, and installation	$3,000	$6,000
	Trailhead signage	$15,000	$30,000
	Detailed design, drawings and contract administration	$44,000	$59,000
	Subtotal:	$480,000	$644,000
3	Bass Lake Stacked Outer Loop System		
	Green trails (16 km)	$512,000	$672,000
	Blue trails (7 km)	$154,000	$224,000
	Black trails (19 km)	$418,000	$608,000
	Risk management plan update	$2,000	$3,000
	Wayfinding signage design, supply, and installation	$3,000	$6,000
	Trailhead signage	$15,000	$30,000
	Detailed design, drawings and contract administration	$111,000	$155,000
	Subtotal:	$1,215,000	$1,698,000
4	Caliper Lake to Bass Lake Stacked Loop System		
	Green trails (15 km)	$480,000	$630,000
	Risk management plan update	$2,000	$3,000
	Wayfinding signage design, supply, and installation	$3,000	$6,000
	Detailed design, drawings and contract administration	$49,000	$64,000
	Subtotal:	$534,000	$703,000
5	Bunny Lake Loops		
	Green trails (15 km)	$65,000	$120,000
	Risk management plan update	$2,000	$3,000

	Wayfinding signage design, supply, and installation	$3,000	$6,000
	Trailhead signage	$15,000	$30,000
	Detailed design, drawings and contract administration	$50,000	$67,000
	Subtotal:	$550,000	$736,000
6	Bunny Lake to Sioux Narrows Provincial Park		
	Green trails (11 km)	$352,000	$462,000
	Risk management plan update	$2,000	$3,000
	Wayfinding signage design, supply, and installation	$3,000	$6,000
	Detailed design, drawings and contract administration	$36,000	$48,000
	Subtotal:	$393,000	$519,000
7	Bunny Lake to Rushing River Provincial Park		
	Green trails (42 km)	$1,344,000	$1,764,000
	Risk management plan update and expert review	$2,000	$3,000
	Wayfinding signage design, supply, and installation	$6,000	$12,000
	Detailed design, drawings and contract administration	$136,000	$178,000
	Subtotal:	$1,488,000	$1,957,000
8	Bass Lake Stacked Loop System to Highway Crossing		
	Green trails (13 km)	$416,000	$546,000
	Risk management plan update	$2,000	$3,000
	Wayfinding signage design, supply, and installation	$3,000	$6,000
	Detailed design, drawings and contract administration	$43,000	$56,000
	Subtotal:	$464,000	$611,000
9	Highway Crossing to Sioux Narrows		
	Green trails (41 km)	$1,312,000	$1,722,000
	Risk management plan update	$2,000	$3,000
	Wayfinding signage design, supply, and installation	$6,000	$12,000
	Detailed design, drawings and contract administration	$132,000	$174,000
	Subtotal:	$1,452,000	$1,911,000
	Total:	$6,809,000	$9,131,000

ROM = Rough Order of Magnitude
TTF = Technical Trail Feature
PTBA = Professional Trail Builders Association

Phase 6 – Trail Implementation Plan

The purpose of this section is to identify implementation strategies to facilitate implementation of the Trail Concept Plan.

6.1 Establish Priorities and Phases

The following table presents a proposed phased approach to the project, including possible start and completion dates. The phases are presented in order of priority and completion dates. However, initial components of later phases may overlap with earlier phases, especially in terms of stakeholder consultation, planning and design. If timing priorities change, the schedule can be accelerated by hiring trail building contractors.

Phase	Component	Proposed Timing	
1	Bass Lake Inner Stacked Loop System	Start	Completion
	Green kids trails (1.8 km)	Summer 2020	Fall 2020
	Green loop from Bass to Red Pine (4.5 km)	Summer 2020	Fall 2020
	Green, blue and black flow trails (600 m)	Summer 2020	Fall 2020
	Kids skills features on skills loop	Fall 2020	Fall 2020
	Risk management plan	Summer 2020	Summer 220
	Wayfinding signage design, supply, and installation	Fall 2020	Fall 2020
	Trailhead signage	Fall 2020	Fall 2020
	Training of local trail building crew by PTBA member	Summer 2020	Summer 220
	Detailed design, drawings and contract administration	Spring 2020	Summer 2020
2	Caliper Lake Trails		
	Green trails (13 km)	Spring 2021	Summer 2021
	Risk management plan update	Summer 2021	Summer 2021
	Wayfinding signage design, supply, and installation	Summer 2021	Summer 2021
	Trailhead signage	Fall 2021	Fall 2021
	Detailed design, drawings and contract administration	Winter 2020	Spring 2021
3	Bass Lake Stacked Outer Loop System		

	Green trails (16 km)	Spring 2022	Summer 2022
	Blue trails (7 km)	Spring 2022	Summer 2022
	Black trails (19 km)	Spring 2022	Summer 2022
	Risk management plan update	Summer 2022	Summer 2022
	Wayfinding signage design, supply, and installation	Summer 2022	Summer 2022
	Trailhead signage	Fall 2022	Fall 2022
	Detailed design, drawings and contract administration	Winter 2021	Spring 2022
4	Caliper Lake to Bass Lake Stacked Loop System		
	Green trails (15 km)	Spring 2023	Summer 2023
	Risk management plan update	Summer 2023	Summer 2023
	Wayfinding signage design, supply, and installation	Summer 2023	Summer 2023
	Detailed design, drawings and contract administration	Winter 2022	Spring 2023
5	Bunny Lake Loops		
	Green trails (15 km)	Spring 2024	Summer 2024
	Risk management plan update	Summer 2024	Summer 2024
	Wayfinding signage design, supply, and installation	Summer 2024	Summer 2024
	Trailhead signage	Fall 2024	Fall 2024
	Detailed design, drawings and contract administration	Winter 2023	Spring 2024
6	Bunny Lake to Sioux Narrows Provincial Park		
	Green trails (11 km)	Spring 2025	Summer 2025
	Risk management plan update	Summer 2025	Summer 2025

	Wayfinding signage design, supply, and installation	Summer 2025	Summer 2025
	Detailed design, drawings and contract administration	Winter 2024	Spring 2025
7	Bunny Lake to Rushing River Provincial Park		
	Green trails (42 km)	Spring 2026	Summer 2026
	Risk management plan update and expert review	Summer 2026	Summer 2026
	Wayfinding signage design, supply, and installation	Summer 2026	Summer 2026
	Detailed design, drawings and contract administration	Winter 2025	Spring 2026
8	Bass Lake Stacked Loop System to Highway Crossing		
	Green trails (13 km)	Spring 2027	Summer 2027
	Risk management plan update	Summer 2027	Summer 2027
	Wayfinding signage design, supply, and installation	Summer 2027	Summer 2027
	Detailed design, drawings and contract administration	Winter 2026	Spring 2027
9	Highway Crossing to Sioux Narrows		
	Green trails (41 km)	Spring 2028	Summer 2028
	Risk management plan update	Summer 2028	Summer 2028
	Wayfinding signage design, supply, and installation	Summer 2028	Summer 2028
	Detailed design, drawings and contract administration	Winter 2027	Spring 2028

6.2 Identify Potential Funding Sources

It is understood that SNNF is actively pursuing grant opportunities. As the project progresses, SMM is able to provide relevant information or maps for grant applications.

6.3 Review Approval Process Requirements

At this stage, it is understood that as landowners, SNNF, the Province of Ontario, and Naotkamegwanning First Nation dictate the approval process requirements. First Nations engagement requirements should be confirmed, as should the need for any environmental surveys for trails in more remote locations.

6.4 Develop Risk Management Strategies

A risk management plan should be developed for the trail network. It will be a living document that gets updated as new trails and technical trail features are added. The first iteration should be complete as soon as the first trails are useable. The following are considerations that should be included in the risk management plan:

- Maintain and sign trails as multi-purpose, free for public use such that they are covered under the Occupiers Liability Act;
- Identify and document hazards (e.g. technical trail features);
- Emergency response plan and communication with local EMS;
- Trail signage (wayfinding and difficulty rating) in accordance with Parks Canada and IMBA guidelines;
- Documented trail inspection records;
- Trail maintenance plan based on inspections;

6.5 Next Steps List

The next steps are essentially presented in Section 6.1, and for the most part can be considered flexible. Availability of funding will drive progress.

Thank you for the opportunity to assist with this exciting project. We look forward to refining the Trail Concept Plan in collaboration with SNNF and advancing the project. Should you have any questions or comments please do not hesitate to contact me directly at (204) 794-6931 or aman@scatliff.ca.

Sincerely,
Scatliff + Miller + Murray

Alex Man, Geological Engineer / Trail Designer

Attachments:

Trail Concept Plan Map
Parks Canada Trail Classification System

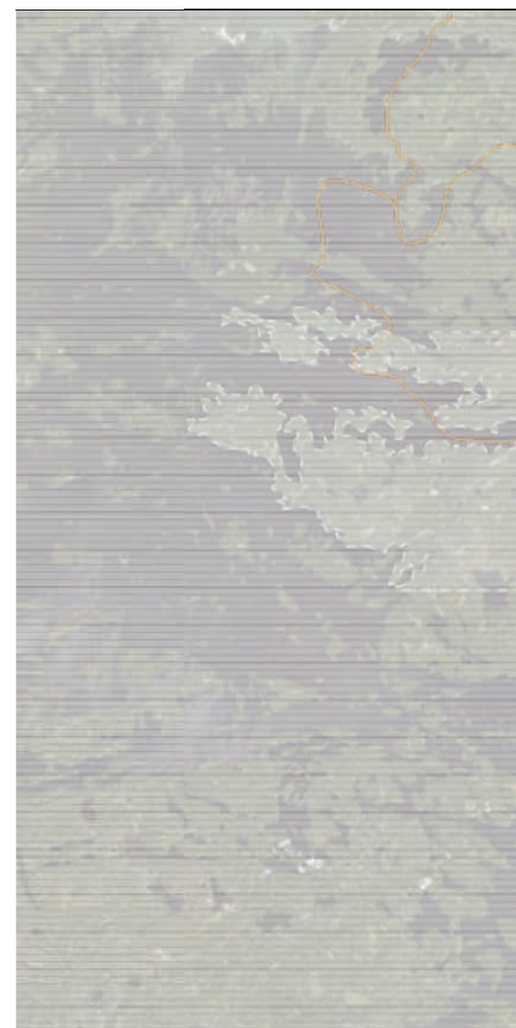
SIOUX NARROWS + NESTOR FALLS
MULTI-USE TRAILS

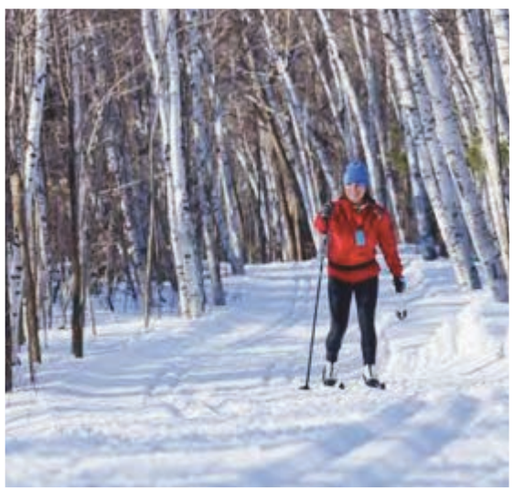
This multi-use trail connecting Sioux Narrows and Nestor Falls will serve as a destination for the community and surrounding region.

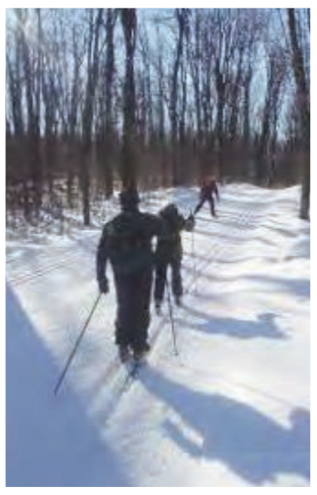
Designed as a year round facility, the trail will appeal to people of all athletic abilities and all ages. While the mountain biking community is a key demographic focus, the trail will serve as a conduit for fitness, families, outdoor education, community celebrations, and gatherings.

The trail will appeal to the following uses:

- Walking/Hiking/Trail running;
- Mountain biking;
- Tobogganing;
- Bird watching;
- Snow shoeing;
- Fatbiking;
- Cross-country skiing; and
- Outdoor classrooms and Nature-based play.

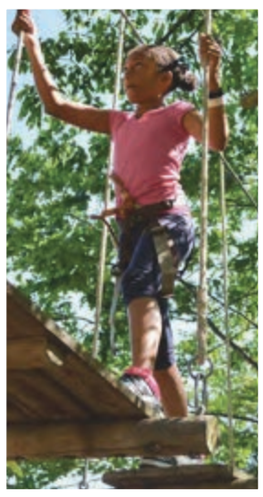






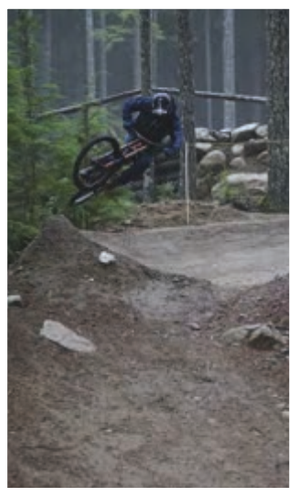
WINTER SPORTS

HIKING TRAILS

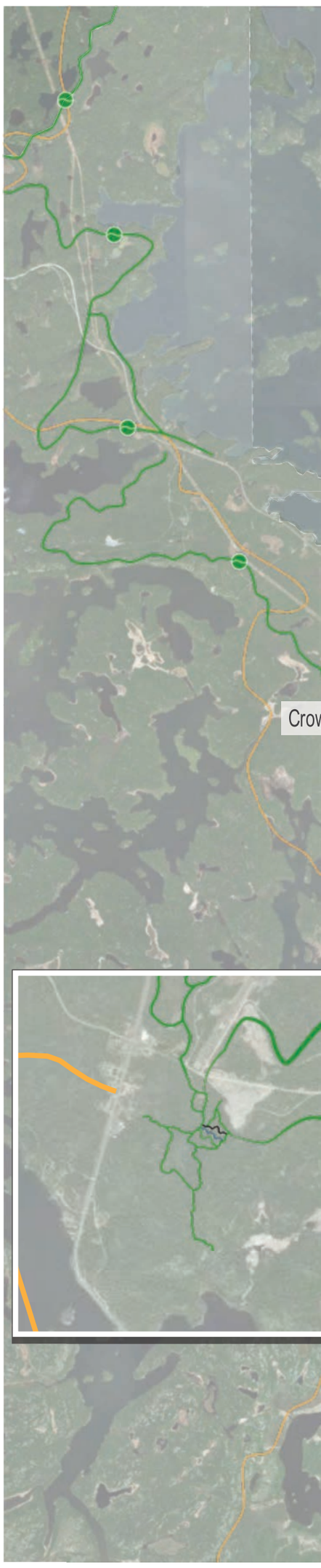


PLAY STRUCTURES

BIKE SKILLS



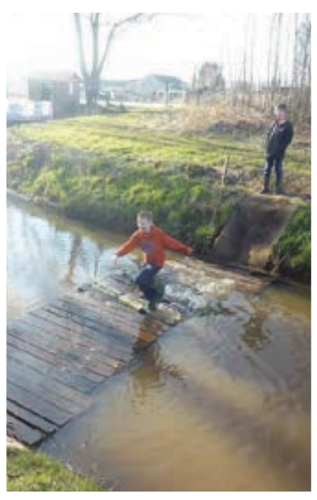
RAMPS + WALL RIDES



SIOUX NARROWS + NESTOR FALLS
MULTI-USE TRAILS

SCATLIFF + MILLER + MURRAY

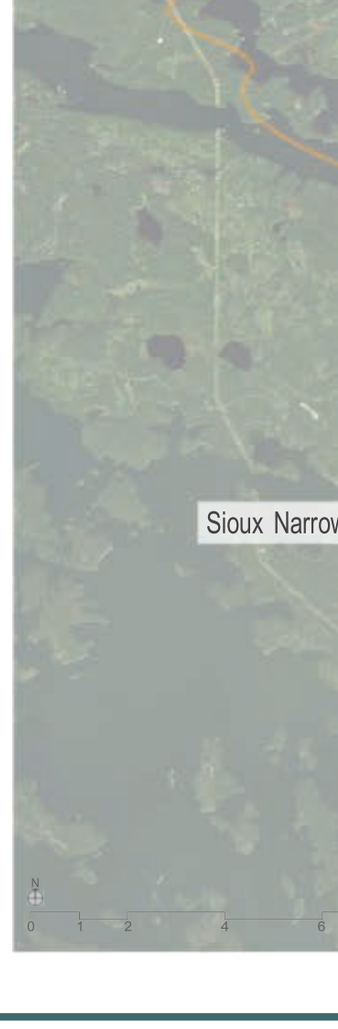
REST AREAS



NATURE PLAY

LEARNING + SHARING

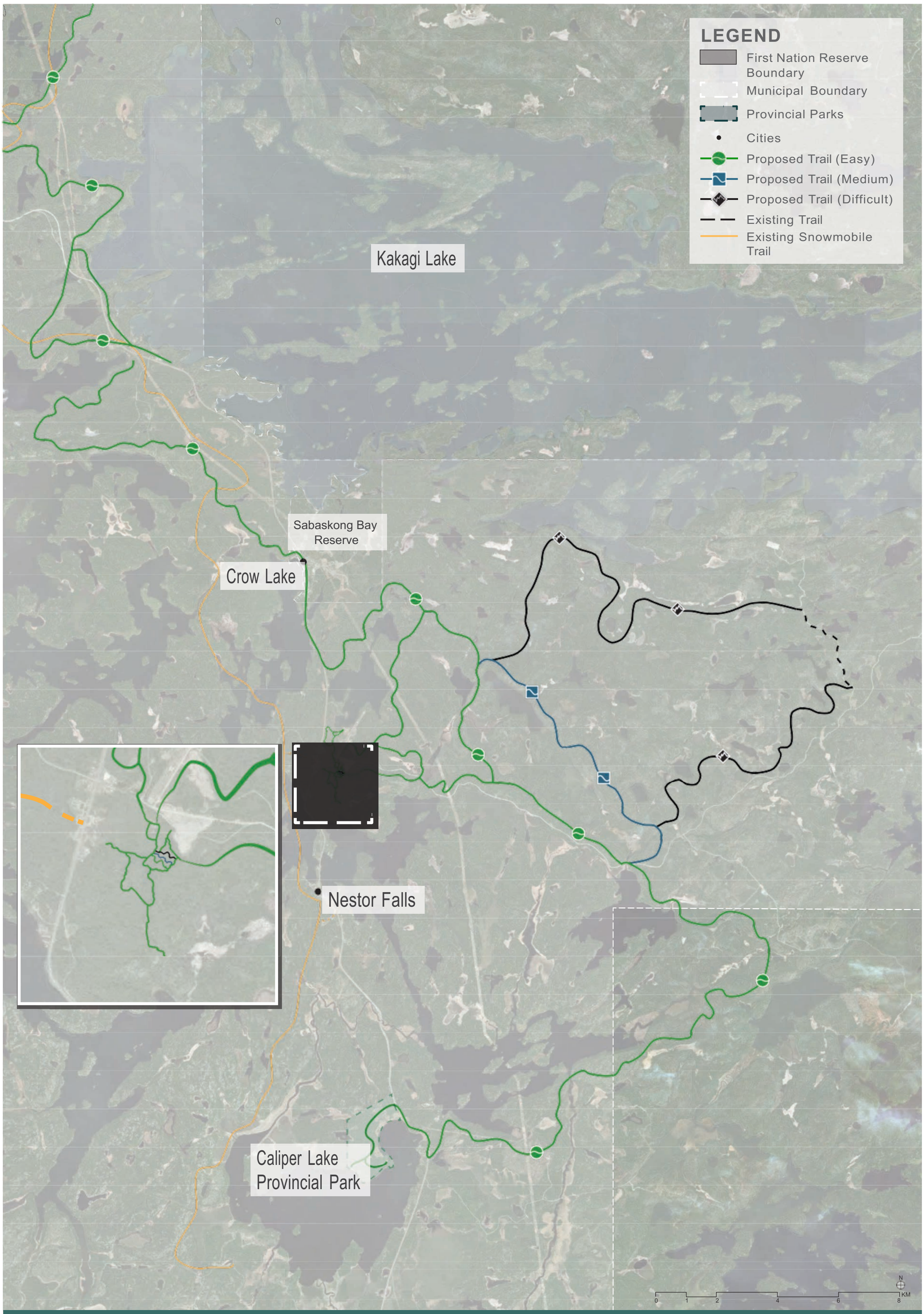
MOUNTAIN BIKING



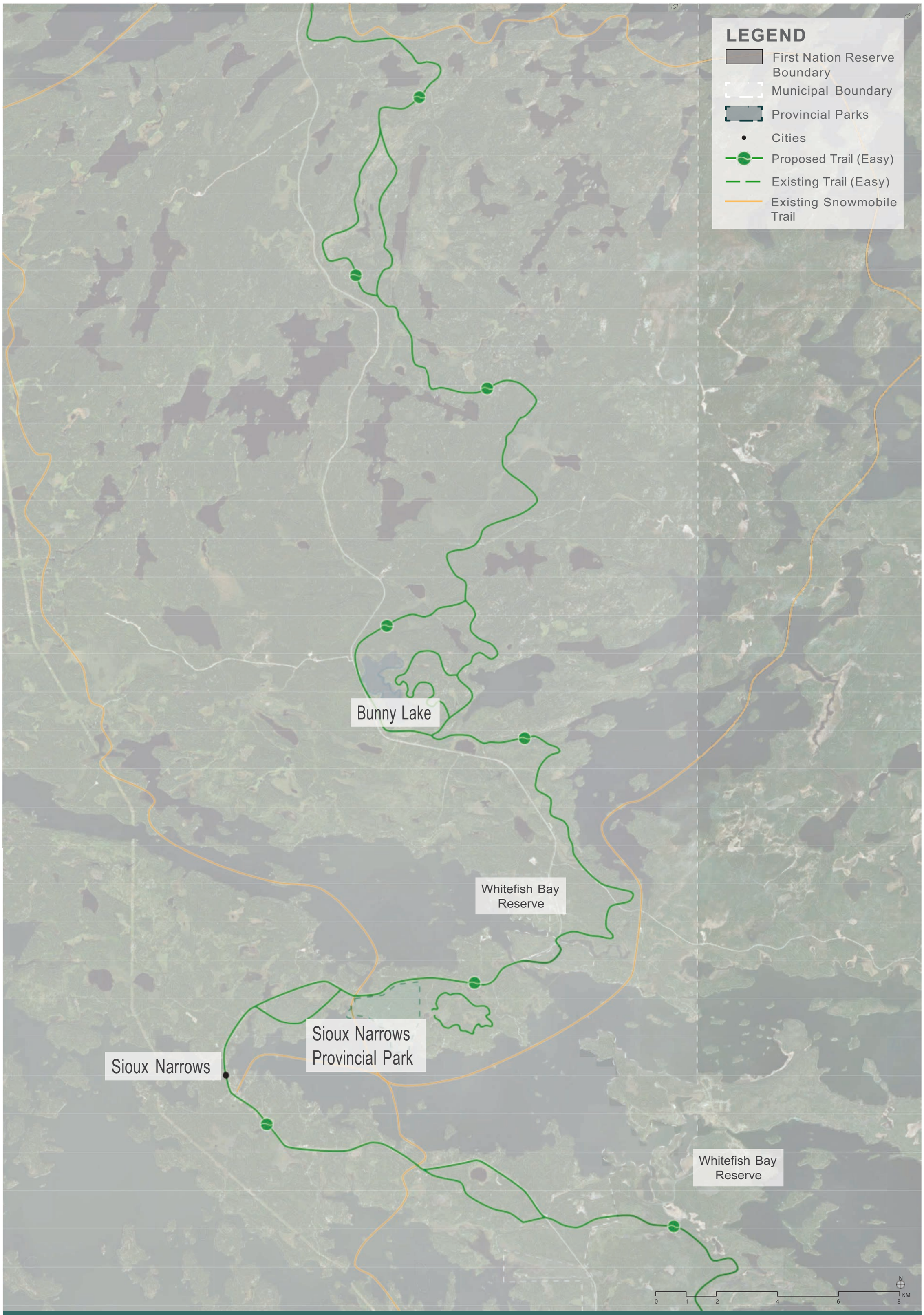
SIOUX NARROWS + NESTOR FALLS

MULTI-USE TRAILS

SCATLIFF + MILLER + MURRAY



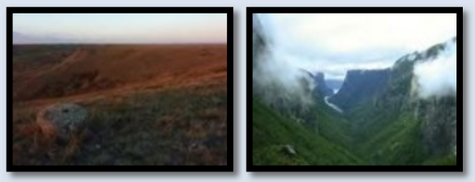
SIOUX NARROWS + NESTOR FALLS
MULTI-USE TRAILS



SIOUX NARROWS + NESTOR FALLS
MULTI-USE TRAILS

Trail Type Classification *(for Asset, Resource Conservation, and Visitor Experience Management)*

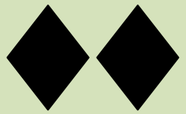
General Description and Technical Details

	Element / Trail Type	TYPE 1	TYPE 2	TYPE 3	TYPE 4
Trail Type Definition	**Definition**	• Paved or hard packed surfaced double track trail, all weather use, with no obstacles in surface. • Use compacted crushed rock, mineral soil, asphalt or chip-seal coat surface. • Minimum trail width of 1.5 metre. • Provide interpretive and directional signs, benches, and viewing areas where appropriate. • Machine- or hand-built and maintained.	• Natural surfaced packed single track trail or double track trail. • Use natural mineral soils or rock for surfacing, or native material from site. May be a paved surface • Minimum trail width of one metre. • Provide interpretive and directional signs, benches, viewing areas where appropriate. • Machine- or hand-built and maintained.	• Natural surface single track trail. • Trail tread may be constructed or established by clearing a corridor and marking the route. • Whenever possible use natural native material from site. • Minimum trail width of 0.25 metre. • Provide minimal signage. • Hand-built and maintained.	• No construction. • Suggested trail route. • Trail tread may consist of wildlife paths or may not exist. • Provide minimal or no signage or facilities. • Not maintained.
	Park Zone ***(applies to National Parks only)***	Zone III, IV, and V (Natural Environment, Outdoor Recreation, and Park Service). *May be found in Zone II (Wilderness) under special circumstances.*	Zone II, III, IV, V (Wilderness, Natural Environment, Outdoor Recreation and Park Service)	Zone II, III, IV, V (Wilderness, Natural Environment, Outdoor Recreation and Park Service). *May be found in Zone I (Special Preservation) under exceptional circumstances.*	Zone I, II, III, and IV (Special Preservation, Wilderness, Natural Environment, and Outdoor Recreation).
	Typical Visitor Type	Suitable for all visitors including those with no trail experience. Visitor may be prepared for trail or may not be prepared *(proper equipment and water).*	Suitable for most visitors with some basic trail experience who are generally prepared *(proper equipment and water).*	Suitable for visitors who have trail experience and are prepared *(proper equipment and water).*	Suitable for visitors who have exceptional trail and navigation experience and are well prepared *(proper equipment and water).*
	Trail Rating	Easy or Moderate	Easy, Moderate, or Difficult	Moderate, Difficult or Route	Difficult or Route
	Image	 *Crushed rock or natural mineral soil surface*	 *Crushed rock or natural mineral soil surface*	 *Natural mineral soil surface*	 *Suggested route*
Technical Details	**Distance (km / m)**	Typical distance of trail does not exceed 10 km. *In certain cases a Type 1 trail may exceed 10 km.*	Typical distance of trail does not exceed 20 km. *In certain cases a Type 1 trail may exceed 20 km.*	May exceed 20 km.	N/A
	Trail Profile ***(general description and typical elevation gain)***	Flat to gently rolling	Gently rolling with short steep sections	Rolling with steep sections that may continue for long periods	N/A
		Typical Elevation Gain	**Typical Elevation Gain**	**Typical Elevation Gain**	**Elevation Gain**
		0 – 100 metres *May be greater in certain situations.*	0 – 1,000 metres	0 - 1,000+ metres	N/A
	Trail Surface ***(Material Type and Typical Average Width)***	Paved or surfaced • Hard packed and stable	Surfaced or natural • Firm and stable	Natural • May be loose in areas	N/A
		Typical Average Width	Typical Average Width	Typical Average Width	Average Width
		1.5 – 3.0 metres	1.0 – 1.5 metre	0.25 – 1.0 metre	N/A
	Quality of Marking ***(General Signage and Information Provided)***	Trailhead information, interpretive panels, route markers, trail orientation maps • *Maximum information provided*	Basic trailhead information, route markers, and trail orientation maps • *Moderate information provided*	Basic trail head information and minimal route markers, or no signage provided • *Minimal or no information provided*	N/A
	Obstacles or Stairs	Few or no obstacles, no stairs or minimal use of stairs	Infrequent obstacles, stairs may be present	Obstacles common, stairs may be present	N/A
	Visitor Facilities	Parking lot, washroom, bridges, benches • *Maximum visitor facilities*	Parking lot, outhouse/pit toilet, bridges • Moderate visitor facilities	Bridges or other water crossing including fording • *Minimal visitor facilities*	N/A • *No visitor facilities*
	Level of Use	High to Very High	Moderate to High	Low to Moderate	Low

Level of Service, Visitor Safety and Visitor Experience Tools

	Element / Trail Type	TYPE 1	TYPE 2	TYPE 3	TYPE 4
Level of Service	**Level of Service**	High	Moderate	Low	N/A
	Inspection	Weekly/monthly or upon visitor comment	Seasonal or as required upon visitor comment	Yearly or as required upon visitor comment	N/A
	Deadfall Clearing	As required	As required / seasonal	Yearly	N/A
	Infrastructure	Major (bridge, boardwalk, viewing platform)	Moderate (bridge, boardwalk, viewing platform)	Low or none (bridge, boardwalk)	N/A
	Trail Materials and Surface Preparation	Asphalt, concrete or crushed rock • Repair cracks, fill holes, repack surface, create drainage, clear corridor	Crushed rock or natural mineral soil and rock • Fill holes, repack surface, create drainage, clear corridor	Natural mineral soil and rock or natural ground cover • Create drainage, clear corridor	N/A
	Equipment	ATV, mechanized equipment, horse, hand or bicycle	ATV, mechanized equipment, horse, hand or bicycle	Non-motorized, horse, hand or bicycle	N/A
Visitor Safety	**Visitors Definition**	Visitor may not understand all risks and may not be self-reliant in the event of an incident.	Visitor may have a general understanding of some risks and may be partially self-reliant in the event of an incident	Visitor has an understanding of most risks and may be self-reliant in the event of an incident	Visitor has an understanding of risks and will be self-reliant in the event of an incident
	Risk Mitigation	Maximum effort made to mitigate risk.	Moderate effort made to mitigate risk.	Low effort made to mitigate risk.	Low too little effort made to mitigate risk.
	Risk Identification *(Cautions and Warnings)*	High detailed explanation of risk – typically provided at trailhead, on maps and at areas of risk along the trail.	Moderate detailed explanation of risk – only significant risks identified. Information typically provided at trailhead and at areas along the trail	Low detailed explanation of risk – only site-specific or unusual risks. Information typically provided at trailhead.	Low detailed explanation of risk – only site-specific or unusual risks. Information typically provided at trailhead.
	Risk Inspection	Weekly/monthly or upon visitor comment. *Risk inspection can occur during level of service inspection*	Seasonal or as required upon visitor comment. *Risk inspection can occur during level of service inspection.*	Yearly or as required upon visitor comment. *Risk inspection can occur during level of service inspection.*	N/A
Describing the Trail	**Targeted Visitor**	Family-friendly, suitable for all visitors looking for an easy trail experience.	Suitable for most visitors who are generally active and have some basic trail experience.	Suitable for visitors who have trail experience and are active.	Suitable for visitors who have exceptional trail experience and are very active.
	Trail Highlights	The purpose of this section is to give visitors a sense of what they can expect along this trail, but to describe it in a non-technical way. This section should provide the highlights of the trail, a sense of what the visitors will see. It helps to inform visitors about why they might want to choose to hike this particular trail.			
		Example: *This trail is an easy walk through a conifer forest and will bring you to a beautiful sand beach along Lake Superior.*	Example: *An enjoyable hike that will allow you to discover the animals of the boreal forest. Observe a beaver lodge, be on the lookout for a wide variety of songbirds and if you are lucky, you might catch a glimpse of some moose.*	Example: *A challenging trail that winds through a variety of terrain from valley bottoms to scenic hill top views. Enjoy lunch while taking in some scenic ocean views; be on the lookout for whales and seals.*	Example: *A challenging and spectacular route that the park recommends for experienced backcountry travelers. Route finding skills are essential since there are no trails or route markers to show the way. Weather in the mountains can also quickly reduce visibility.*

Trail Rating Classification *(for the Visitor)*

	Element / Rating	EASY	MODERATE	DIFFICULT	ROUTE
Trail Rating Definitions	**Definition**	• Suitable for all visitors including those with no trail experience. Visitor may be prepared for trail or may not be prepared *(proper equipment and water).* • Hard packed surface with no obstacles and minimal stairs. • Estimated time to complete the trail is no longer than two hours. • Little or no elevation gain or loss.	• Suitable for most visitors who have some basic trail experience and are generally prepared *(proper equipment and water).* • Mostly stable surface with infrequent obstacles, stairs may be present. • Estimated time to complete the trail is no longer than five hours. • May experience moderate elevation gain with some short steep sections.	• Suitable for visitors who have trail experience and are prepared *(proper equipment and water).* • Varity of surface types including non-established surface. • Estimated time to complete the trail may exceed five hours. • May experience major elevation gain with long steep sections.	• Suitable for visitors who have exceptional trail and navigation experience and are well prepared *(proper equipment and water).* • Non-established tread only a suggested trail route, not maintained. • Estimated time to complete ranges from 1 day to 10 days or longer. • May experience a variety of terrain including wet areas, loose rocks, exposure, and thick forest.
	Symbol				
Rating Details	**Distance *(return)***	0 – 5 km	0 – 15 km	0 – 15+ km	N/A
	Trail Profile	Flat to gently rolling	Gently rolling with short steep sections	Rolling with many steep sections that may continue for long periods	N/A
	Trail Surface *(material type and average width)*	**Typical Elevation Gain** 0 – 100 metres Paved or surfaced •Hard packed Typical Average Width 1.0 – 3.0 metres	**Typical Elevation Gain** 100 – 500 metres Surfaced or natural surface •Firm and stable Typical Average Width 0.5 – 1.5 metre	**Typical Elevation Gain** 500+ metres Natural surface •May be loose or may not exist Typical Average Width 0 – 1.0 metre	**Typical Elevation Gain** N/A N/A Typical Average Width N/A
	Quality of Marking *(general signage and information provide)*	Trailhead information, interpretive panels, route markers, trail orientation maps • Maximum information provided	Basis trail head information, route markers, and trail orientation maps • Moderate information provided	Basic trail head information and minimal route markers, or no signage provided • Minimal or no information provided	N/A
	Obstacles or Stairs	Few or no obstacles, minimal use of stairs	Infrequent obstacles, stairs may be present	Obstacles common, steps common	N/A
	Visitor Facilities	Parking lot, washroom, bridges, benches • *Maximum visitor facilities*	Parking lot, outhouse/pit toilet, bridges • Moderate visitor facilities	Bridges or other water crossing including fording • *Minimal visitor facilities*	N/A • *No visitor facilities*
	Recommended Experience	Little or no experience required	Some experience recommended	Experience recommended	N/A
	Level or Service	High	Moderate	Low	N/A