



# Woolastook Mountain Bike Trail Strategic Plan

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May 25, 2022    **Sept. 12, 2022**

Our file: 2531-599



**Your Challenge.  
Our Passion.**



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# 1. Introduction

## 1.1. BACKGROUND & EXISTING NETWORK

Woolastook Park is located in the southwest portion of New Brunswick about 28km west of Fredericton, N.B. Surrounded by the Wolastoq / St. John River and offering acres of treed forest, visitors can enjoy activities such as camping, fishing, off-road vehicle use (ORV), boating, hiking, and biking. Undulating terrain and mixed deciduous & coniferous forested hills can take trail users from 35m elevation up to viewpoints on cliff edges at 167m elevation. Hillside streams drain from high points, settling in low points of the terrain creating marshy sections or depositing into Kelly's Creek. With natural appeal for tourist and locals alike, the Government of New Brunswick has recognized the opportunity to improve the trail network and signed a 10-year License of Occupation with River Valley Cycling Club for trail construction and maintenance.

In the past, trails in this area have been used for mountain bike racing. The current trail network consists of short trail segments of singletrack purpose built for individual bike races, that are connected by double track left over from farming and resource extraction. The singletrack segments have a rooty and technical characteristic. The existing trail system has various interweaving trail junctions, which adds to rider confusion. It can be difficult for new trail users to navigate the trails and find flow that isn't intersected by segments of doubletrack. In addition, ATV traffic is contributing to the widening of trails, further decreasing the quality of the experience mountain bikers and trail runners are looking for of highly engaging singletrack. Within the Fredericton N.B. area there currently isn't any network that offers a diverse experience of riding for beginner to advanced level riders.

With a clear need for trails that fit a variety of rider abilities and potential for improved mountain bike race opportunities, the local Fredericton riding community, River Valley Cycling Club (RVC) obtained funding to invest in trail improvement and construction. RVC is a volunteer-based community of passionate mountain bike trail advocates and avid mountain bike riders, operating in the Fredericton region. RVC received approval for funding from the Canada Community-Building Fund. This funding will be invested into the construction and upgrade of mountain bike trails in the Woolastook area. RVC has also engaged McElhanney Ltd. (McElhanney) to complete a Mountain Bike Trail Master Plan for the area, which will help to guide the development of trails. In the long term, the network will bring increased tourism to the park, reduce trail user conflict, and add variety for trail users.

## 1.2. VISION

The intent of trail upgrade and construction is to provide quality singletrack experiences for mountain biking, trail running, and hiking in the summer months and fat tire biking or snowshoeing in the winter months. Longer stacked loops of continuous singletrack will create a feeling of "going somewhere" and a continuous riding experience is achieved by reducing the number of trail intersections. Main staging areas and defined trail hubs will provide the opportunity for events to be run throughout different areas of the network. The trails will support rider progression by offering easier shorter trail options in the front country and longer more difficult trails spanning into the mid and backcountry.

Decommissioning and narrowing of some of the existing trails will help to eliminate ATV access and reduce the number of trail intersections. The combination of constructing new trail and decommissioning existing trail will contribute to the fulfillment of the Master Plan Objectives in Section 1.3.

### 1.3. MASTER PLAN OBJECTIVES

The purpose of the Mountain Bike Trail Master Plan is to provide guidance for RVC to assist with the development of a mountain bike-primary, non-motorized trail network, that provides a diverse range of trail user experiences and enhance the quality of recreation opportunities for residents and visitors in the area.

Through discussion and collaboration with a myriad of stakeholders, the key objectives, in no order, that guide the master plan have been identified as:

- Establishment of a stacked loop trail network to provide variety and continuous, high quality, singletrack experiences.
- Support rider progression by building easier trails closer to trail head and more challenging trails farther into the mid and backcountry.
- Provide opportunities for organized events- clinics, camps, guided tours, racing.
- Reduce user conflict by providing a trail solution that discourages motorized use, erosion, and unauthorized building.
- Increasing rider safety and reducing barriers to sport by providing quality trails for a wide variety of trail users.

The master plan objectives provide a basis for succession of the master plan and as a baseline model to guide decision making.

### 1.4. THE IMPORTANCE OF PLANNING AND DESIGN PROCESSES

#### *Master Planning*

Creating a trails master plan should be a fundamental goal of any management organization as it establishes a direction, stimulates discussion amongst stakeholders and ensures succession of organizational objectives. Master plans are vital documents that are often the basis for most funding opportunities and decision-making regarding how land will be utilized.

Before proposing or constructing new trails it is crucial that the management group reflect upon the goals and impacts to the community, the environment, residents, and other stakeholders.

McElhanney believes in a holistic approach to trail design and construction which prefers a thorough planning and design process to ensure cumulative effects (the combined environmental impacts of past, present and future human activities, and natural processes) are mitigated.

## *Design Processes*

Trail network planning, trail design and trail construction are key processes when considering how to execute a master plan. The value of the master plan is realized when all the following considerations are included at each step of the planning, design, and construction of the network:

- Conflict Resolution – the ability to manage mixed user typologies, displacement of other users, locals vs. tourists and landowner concerns.
- Environmental Considerations – trail construction standards need to be adhered to and considered during the entire process. Professional advice should be sought as early in the process as possible.
- Rider Experiences – planning for past, present and future desires of riders is important in order to discourage rogue trail building of unsanctioned trails that increase landowner liability and negatively impact management agreements and future development.
- Liability and Negligence – the design process should explore the risk tolerance of the landowner and land manager. The risk tolerance will contribute to the master plan by guiding decision making and development. Additionally, liability and maintenance contribute to understanding the maintenance needs and financial risk at stake when planning for future development.
- Trail Standards – are established through industry best practice, landowner jurisdiction and building bylaws/codes. The master plan will address current standards and endeavour to establish a baseline quality that will inform the maintenance of the trail network.
- Maintenance – is an integral part of the design process due to the inherent need to prevent, control and mitigate environmental degradation, safety for the user, quality of the experience and determine the amount of financial and human capital required for succession.
- Funding – the design process should provide an in-depth understanding and estimate of development costs and generally aim to formulate projects that can be implemented when funding is obtained.

## 2. Trail Design Criteria

The design criteria for the proposed network shall be trail-specific based on the individual Trail User Objectives (TUOs), Trail Management Objectives (TMOs), and trail difficulty. By providing a diversity of trail types that meet different rider objectives and difficulty levels, a progressive trail network can be created to develop an accessible and quality trail experience for a variety of user groups and skill levels. The current network mostly offers intermediate difficulty technical riding and ATV widened or doubletrack riding.

The following sections outline the considerations made in determining the proposed trail design criteria and provide recommendations for the types of trails for the proposed trail network.



Photo Credit: The Mindful Explorer, Chris Istace

*Figure 1. Flow Trails in Cypress Hills, AB provide Trail User Objectives of Play and Fun*

## 2.1. TRAIL USER OBJECTIVES

In designing a trail plan for Woolastook Park, the desires of the trail user weigh heavily into the decision making of the style, width, feel, and location of the trail placement. To quantify these desires and establish a common language, the Bureau of Land Management in the U.S.A. has developed a list of Trail User Objectives. For each new trail the TUOs from Figure 2 have been identified.

Trail User Objectives	Description
Nature	Connection to nature. This can be anything from being among a few trees in the middle of the city to remote backcountry. Nature is an important factor for many riders.
Escape	Something that takes you away from your daily grind, allows you to get lost in the experience of riding. Often means getting away from the urban environment, but a bike park, even indoors, can provide this as well.
Solitude	Getting away from the urban environment and people: being active, alone, and quiet in the outdoors.
Challenge	Seeking to improve technical abilities, to solve a difficult problem, "clean" a trail feature or segment; sense of accomplishment.
Risk	Exposure to danger, harm, or loss; intentional interaction with uncertainty. The perception of risk creates a thrill for many trail users. It can be a positive or negative part of the trail experience, depending on user expectations and risk tolerance.
Fun	Amusing or enjoyable experience. When you are trying to build fitness and/or skill, you may do many rides without "fun" being a primary objective. Ideally, one doesn't have to sacrifice fun for challenge or exercise.
Play/Playfulness	Engaging in the activity purely for the enjoyment, bringing a childlike wonder to the pursuit, no destination. On a trail, this often means seeking features to enhance, alter the experience, rather than simply riding from point to point. Playfulness is a hugely important characteristic in mountain bike trails, and distinguishes trail experiences from many other trail user goals (hikers, equestrians).
Exercise	Health and fitness are part of the sport. For some this is a primary goal, for others a bonus, for some an obstacle. Defining the physical fitness needed for a particular ride is important in setting user expectations appropriately. Recognition that some riders have high skill and low fitness (and vice versa) plays a role in trail planning.
Variety	Multiple trail options, diversity of experience within a trail or trail system. Variety should be in several forms, where possible: skill, features, surface, setting, grade, etc. While all the trails within a system may have a particular feel based on its environmental factors, it can still have variety within those constraints. Also possible at the regional level to provide variety of experiences if limited opportunities exist within a particular system.
Connectivity	Series of loops and/or trail segments linked by other trails or transportation routes. Allows for a customized experience, change of plans, adding on to a ride. Also allows for riders of different fitness or skill level to begin rides together.
Socializing	Provides a shared experience and enhances safety for riders. Mountain biking is often a social activity.
Safety/Security	This could range from trailhead security for parking to personal safety unrelated to recreational use.
Efficiency	Getting to a destination or accomplishing a task with the least amount of time or effort expended. Road climbs are very efficient, as are trails that ascend directly to a destination. Efficiency sometimes means compromising sustainability and fun/play. Hiking trails tend to be much more efficient than biking trails.

Figure 2. Trail User Objectives (source: Bureau of Land Management, 2017).

## 2.2. TRAIL MANAGEMENT OBJECTIVES & DESIGN PARAMETERS

TMOs are documentation of the intended purpose and management strategies for a trail and provide the overall decision-making framework for assessment, management, and design as described in the US Forest Service Trail Fundamentals and Trail Management Objectives (2016). They are critical to the successful planning, design, management, operation, and maintenance of any trail and network. TMOs are intended to answer the following three questions, which provide the basis for any trail assessment:

- What is the purpose of the trail?
- What is the intended level of development?
- What are the intended uses of the trail?





Further to the above, TMO documents also specify the physical design criteria for a trail, such as the tread width, surfacing type, grades, turning radii, clearing width, etc., based on the desired management objectives and uses.

At the conceptual level of this TMP, the design parameter tables (Table 1 & 2), in combination with the TMO table found in Appendix A forms the overall TMO. Note that the information in Appendix A does not constitute a complete TMO document, but rather the table is intended to provide guidance for detailed design of the trails. A complete TMO should be developed for each trail following detailed design.

Trail difficulty is the intended level of challenge of a trail for the typical user. The challenge level is influenced by many factors such as terrain, design criteria, and technical trail features (TTFs) included on the trail. Technical Trail Features are any obstacle on the trail that require negotiation by the rider, the feature can be either man made or natural, such as an elevated bridge, or a rock face. Signed or obviously optional challenge features of one difficulty level harder than the main trail are considered appropriate for progression- this allows one trail to satisfy a wider range of skill levels of riders. The beginning of a trail should have a filter, or qualifier obstacle that represents the difficulty of the most challenging unavoidable feature on the trail to inform riders what lies ahead.





The bike industry has now divided trail types up into flow (Freeride) and technical as shown below in Table 1 and Table 2. This is to recognize that different skills and experiences are provided by each type of trail. For instance, flow trails will satisfy the Trail User Objective of Fun and Play, whereas technical trails provide a greater sense of Risk, Challenge, and Variety.

Table 1. MTB Flow Trail Design Parameter/ Trail Difficulty Guidelines

MTB Flow Trail DESIGN PARAMETER		DEGREE OF CHALLENGE			
		Easy 	Moderate 	Difficult 	Most Difficult 
<b>DESCRIPTION</b>		Natural or hardened surfaced smooth trail with beginner level TTFs such as berms and rollers.	Natural surfaced trail with smooth tread and TTFs such as medium-sized berms, rollers, and tabletop jumps.	Natural surfaced trail with smooth tread and frequent advanced TTFs such as berms, hip or step-up/down jumps, and rollers.	Same as difficult including gaps
<b>CLEARING LIMIT</b>	<b>Clearing Width</b>	2.5 m	1.5 – 2.5 m	2.0 – 3.5 m	> 2.5 m
	<b>Clearing Height</b>	3.0 m	3.0 m	3.0 m	3.0 m
<b>TREAD WIDTH</b>	<b>Tread Width</b>	1.2 - 1.5 m	1.2 – 2 m	2.5 - 3 m	2.5 – 6 m
	<b>Size of Berms, Jumps, and Rollers</b> (Typical height)	0.3 m	0.5 – 0.8 m	0.8 – 2.5 m	1.5 - 6 m
<b>SURFACING</b>	<b>Surface Type</b>	Compacted mineral soil typically free from rocks or roots in the surface 0.15m, ideal soil type is “loam” on the soil triangle, with a high proportion of clay, silt, and sand.			
<b>GRADES</b>	<b>Target Grade</b>	5 %	8 - 10%	8 – 12%	8 – 15%

	<b>Maximum Grade (short)</b>	7%	15%	35%	unlimited
<b>CROSS SLOPE (excluding berms)</b>	<b>Target</b>	2 – 3%	2 – 5%	2 – 10%	2 - 10%
	<b>Maximum Cross Slope (in berms)</b>	55 deg	75 deg	80 deg	80 deg
<b>TURNING</b>	<b>Target Turning Radius</b>	Depends on trail speed when entering the turn, 2.5 - 6 m typical			

Table 2. MTB Technical Design Parameter/ Trail Difficulty Guidelines

MTB Technical Trail DESIGN PARAMETER		DEGREE OF CHALLENGE			
		Easy 	Moderate 	Difficult 	Most Difficult 
<b>DESCRIPTION</b>		Natural or hardened surfaced trail with small tread protrusions and low height obstacles.	Natural surfaced trail with occasional tread protrusions and obstacles and TTFs such as tree roots, rock gardens, steep chutes, wood features, and small drops.	Natural surfaced trail with frequent tread protrusions and obstacles and frequent challenging TTFs such as steep chutes, rock gardens, wood features, and drops.	Same as difficult with more challenging features
<b>CLEARING LIMIT</b>	<b>Clearing Width</b>	1.2 - 2.5 m	1.1 – 1.5 m	1.0 – 1.5 m	1.0 - 1.5 m
	<b>Clearing Height</b>	3.0 m	3.0 m	2.5 m	2.5 m
<b>TREAD WIDTH</b>	<b>Tread Width</b>	1.0 - 1.8 m	0.5 - 1.5 m	0.2 - 1.0 m	0.2 - 1.0 m
	<b>Structure Width (minimum width)</b>	Tread + 0.15 m each side	Tread + 0.15 m each side	Varies	Varies
<b>SURFACING</b>	<b>Surface Type</b>	Compacted native mineral soil or hardened with imported materials	Compacted native mineral soil with some tree roots or rocks projecting through the surface	Compacted native mineral soil with frequent tree roots or rocks projecting through the surface	Compacted native mineral soil, widely variable and unpredictable
	<b>Protrusions</b>	RARE, <0.1m	Common, <0.10m	Common, <0.15m	Frequent, <0.15m
	<b>Obstacles (max height)</b>	RARE, <0.1m	Common, <0.30m	Common, <0.38m	Frequent, >0.38m,

					placed for challenge
<b>Grades</b>	<b>Target Grade</b>	< 5 %	5 – 15%	10 – 20%	10 – 35%
	<b>Maximum Grade (Short)</b>	7%	15%	20% or greater	30% or greater
	<b>Maximum Grade Proportion</b>	5– 10%	10– 15%	15– 25%	20-25%
<b>Cross Slope</b>	<b>Target Cross Slope</b>	2 – 3%	2 – 5%	2 – 10%	2 - 10%
	<b>Maximum Cross Slope</b>	5%	8%	10%	30%
<b>TURNING</b>	<b>Target Turning Radius</b>	2.5 - 3.5 m	2.0 - 2.5 m	1.5 – 2.0 m	1.0 - 2.0 m
	<b>Corner Characteristic</b>	Flat corners or small berms		Flat or off camber corners with obstacles	

### 3. Proposed Trails

The Woolastook Provincial Park network will be designed as a non-motorized trail network except for the current Woolastook Loop double track. Shared use is expected on all trails with trail running and hiking being typical for summer use. New mountain bike oriented 'downhill trails' will be constructed in a manner where the primary use is for mountain biking.

The network is designed with designated climb trails and a series of technical and flow downhill trails ranging in difficulty level. These downhill trails can be completed in rider loops of progressively more challenging trails (based on both fitness and technical skill) with more advanced riders progressing into the backcountry of the network. This 'stacked loop' style of network is designed to provide variety to riders depending on their desired length of workout and trail preference of flow or technical.

All proposed trails shown on the maps are conceptual only and will need to be ground truthed and flagged for detailed design. Proper detailed design will save on construction and maintenance costs by avoiding wet areas and the trail routing will be designed to control user speeds, thereby reducing braking bumps. For reference, Trail User Objectives and Trail Management Objectives are explored in more detail in Section 2.1 and 2.2. Maps are found in each of the following sections for Front, Mid, and Back country. These maps show the conceptual trail segments and other upgrades, with each segment labeled with a T#. The stacked loop maps show how trails are designed to be linked together to form continuous rides that will flow with a similar experience.

### 3.1. FRONT COUNTRY TRAIL NETWORK

The front country network is primarily targeted to beginner riders. Green and blue trails with the option to ride short loops gives beginner riders the ability to learn, without needing the fitness level of an intermediate to advanced rider. Shorter loops will encourage play and discovery while keeping the rider close to trailhead for safety and security. Currently, the main beginner difficulty trail is the Woolastook Loop double track, which is wide and straight and only meets the TUO's of Fitness/Nature/Escape. By adding purpose-built beginner singletrack, these same riders can also experience Fun/Play/Challenge & Variety.

#### *Front Country Trailheads*

This network will be accessed via a short-term trailhead initially and upon amendment of the License of Occupation boundary (LOO) or via a Memorandum of Understanding (MOU) with the current Lessee a long-term trail head will be established. The short-term trail head allows for winter parking without having to plow the entire road. The vision for the long-term trail head will be to have a larger parking area and building (lodge) where events can be hosted from. Weekly gatherings could be organized, mountain bikers, runners, and hikers would enjoy their activity of choice and then meet at the long-term trailhead lodge to enjoy post-activity socializing. A similar model is in place at the Canmore Nordic Center with "Thursday night Pub Night" where pizza and beer are served every Thursday night in the summer.

#### *Front Country Hubs*

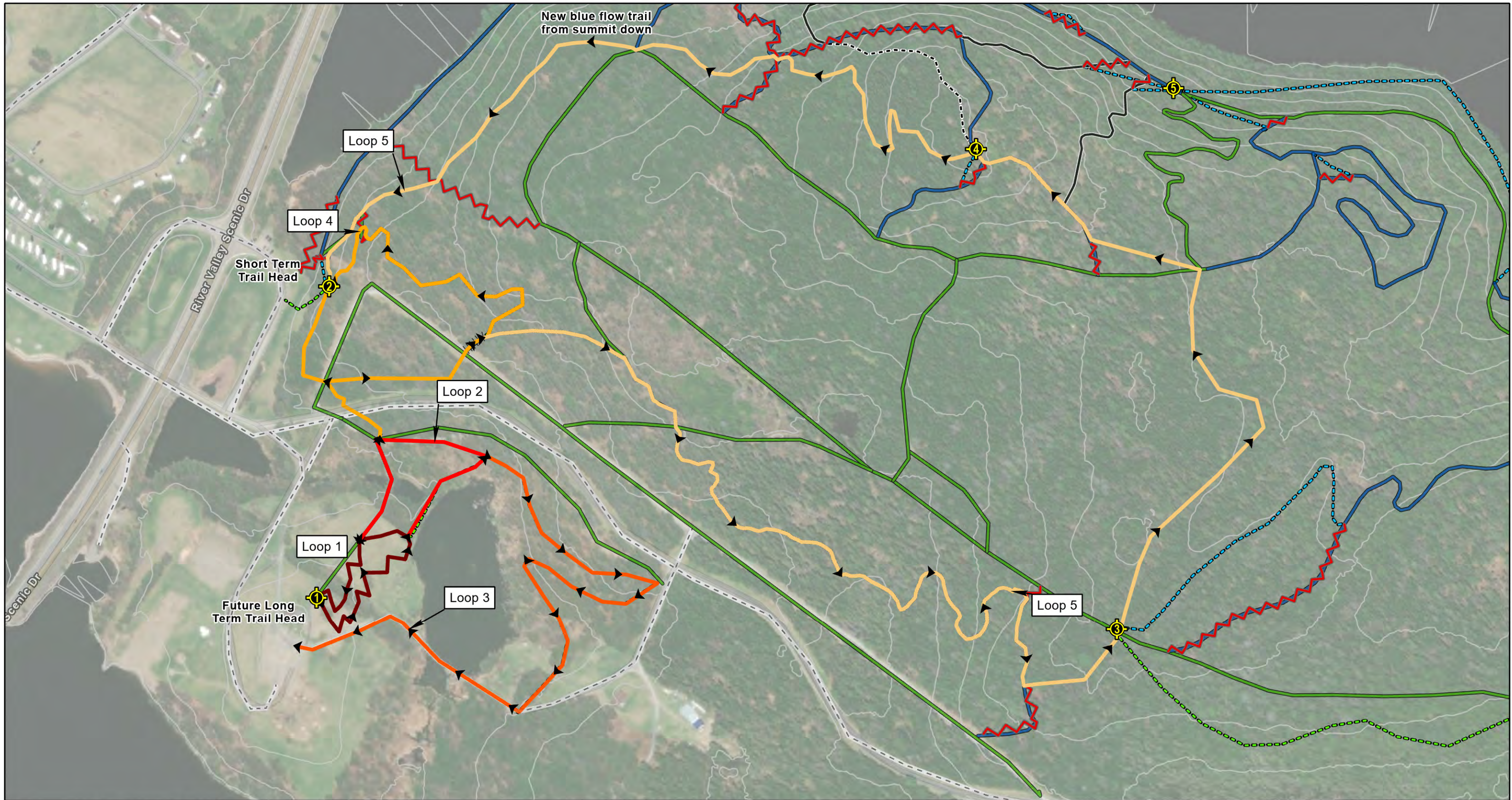
Hubs 1, 2, 3, and 4 are included in the front country network, but it should be noted that Loops #1,2,3, and 4 are outside the bounds of the current LOO. The main goal of these central hubs is to reduce rider decision making by culminating trails to a single point and creating a seamless rider experience. Specifically, Hub 2 will be restructured to allow ease of travel between the short-term and long-term trailheads and offer smooth transitions for riders to move from one trail to another.

#### *Front Country Highlights*

The following points detail how the trail will benefit the community and improve rider experience:

- Loop 1 will be an addition for beginner riders and parents, or friends can socialize in the parking lot while riders waiting for their party complete the loop. Within this area, T1 and T3 are anticipated to be used for the start or finish of almost every ride. Loops 2 and 3 are designed to support youth learning of the sport and can be used as the main connection into the network via T3.
- The front-country network creates an alternative rider experience from the existing shared-use golf cart/ATV gravel paths. Currently ATVs and MTB riders are sharing the existing doubletrack Pond Trail. With ATV restricted and narrow singletrack MTB specific climb and downhill trails, riders will have a safer and more enjoyable experience.
- Each of the loops will have a preferred direction, and features will be constructed specifically for that direction. This contributes to a better riding experience while saving construction costs. The majority of these trails can still be ridden backwards, however should not be promoted as such. Flow trails should be downhill specific and signed as such. Not only is it difficult to climb a flow trail, but it also poses a greater risk to rider collision.

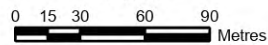
- In Loop 5, central Hub 4 at the summit provides a variety of ways to finish a ride and return to the trailhead (see Mid Country Section 3.2). T8 is one option that riders can take from Hub 4. This flow trail will create a lot of excitement for the area, riders will experience a long continuous descent of 900m long from summit.
- The existing Split Rail trail will form a longer rider for beginners. It can be combined with various intermediate difficulty trails to make loops, or with the doubletrack Woolastook Loop to make beginner loops that allow for fitness, fun, and play. Split Rail will be upgraded with proper drainage, well shaped interspersed berms, and optional rollers and TTFs appropriate for user speed. The entire trail and the new build should be beginner difficulty, sections that are double track should be upgraded to higher quality singletrack and provide a consistent experience throughout.
- T16 is the cross-network connection between Hub 3 and Hub 4 and a key upgrade to the network. It will allow many of the short segments of trail to become part of the larger continuous loops.
- Woolastook Loop will remain as a doubletrack loop allowing ease of access for event setup, emergency response, and maintenance or construction.



# Woolastook Trails Frontcountry Map



1:3,500



Date: 5/24/2022  
 Spatial Reference: NAD 1983 UTM Zone 20N  
 Exported By: SP 2115  
 Credits: Esri Community Maps Contributors, Province of New Brunswick, Esri Canada, Esri, HERE, Garmin, Swisstopo, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## LEGEND

- Bridge
- Central Hubs
- Table
- Viewpoint
- Existing Access Road
- Narrow Existing Trail
- Decommission Trail
- 10m Contours

- Existing Trail by Difficulty
- Black
  - Blue
  - Green

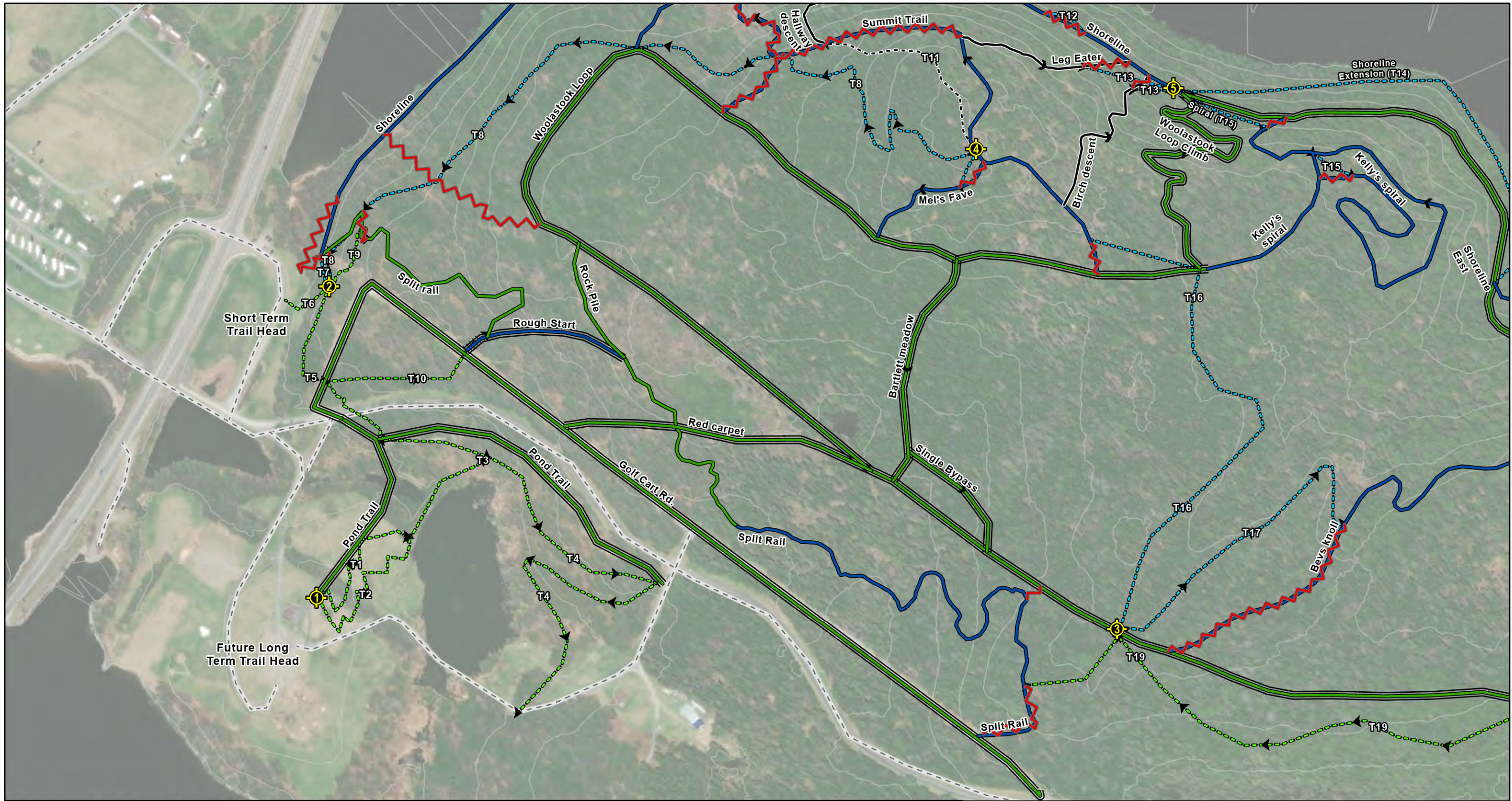
- Conceptual Trail
- Black
  - Blue
  - Double Black
  - Green

- Stacked Loop Trail
- 1
  - 2
  - 3
  - 4
  - 5

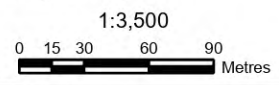
## LOOP TABLE

Loop No.	Trail Difficulty	Segment Length (m)
1	Green	384
2	Green	336
3	Green	804
4	Green	732
5	Blue	2640

# Loop 1 - 5



**Woolastook Trails  
Proposed Trails and Upgrades  
Frontcountry Map**



Date: 5/24/2022  
 Spatial Reference: NAD 1983 UTM Zone 20N  
 Exported By: SP 2115  
 Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**LEGEND**

- |              |                       |                                     |                                  |                                     |
|--------------|-----------------------|-------------------------------------|----------------------------------|-------------------------------------|
| Bridge       | Existing Access Road  | <b>Existing Trail by Difficulty</b> | <b>Preferred Trail Direction</b> | <b>Proposed Trails and Upgrades</b> |
| Central Hubs | Narrow Existing Trail | Black                               | Down Trail                       | Black                               |
| Table        | Doubletrack           | Blue                                | Up Trail                         | Blue                                |
| Viewpoint    | Decommission Trail    | Green                               |                                  | Double Black                        |
|              | 10m Contours          |                                     |                                  | Green                               |

## 3.2. MID COUNTRY TRAIL NETWORK

The mid country network will have progressive difficulty trails focused on providing the Trail User Objectives, challenge, fitness, connecting with nature, escape, and solitude. This trail network is intended to be lapped, with many riders expected to complete multiple laps prior to returning to trailhead. The stacked loop format, intersected with the Woolastook Loop Doubletrack, will continue to be an ideal location for hosting races, as singletrack can be interspersed with doubletrack for passing or for varying the length of the racecourse.

### *Mid Country Hubs*

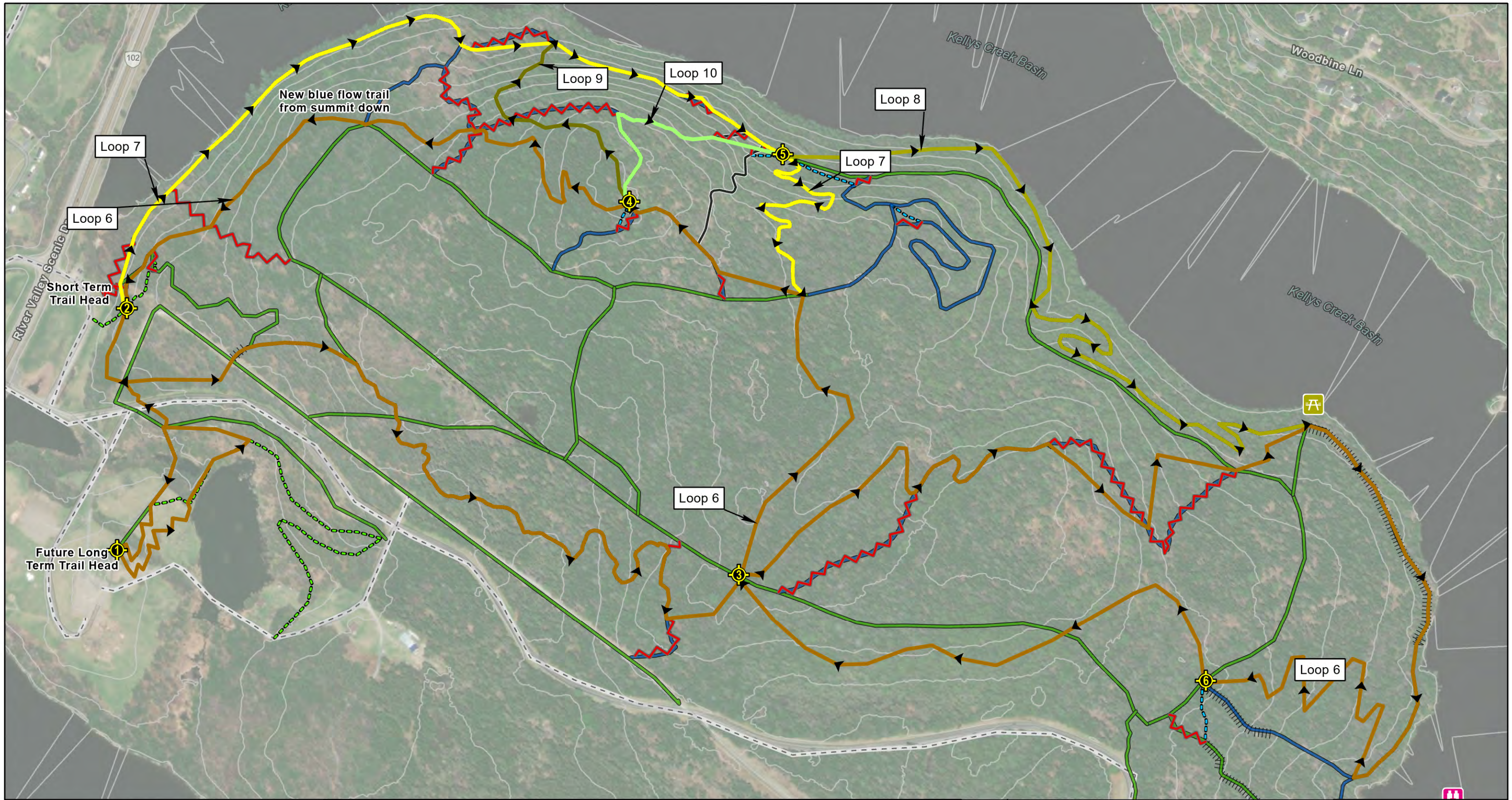
Hubs 4, 5, and 6 are part of the mid country network. Hub 4 is a key point where front country riders can decide to proceed to mid country trails. This hub sits at the high point in the front country, (Summit Trail) and gives riders the option to finish their ride or lap a lengthened downhill trail such as Hallway, Leg Eater, Birch Descent, or Mel's Fave. Riders will typically climb to Hub 4 using Summit Trail from Hub 3 or the new double track climb.

Several existing trails will be extended to converge at Hub 5 and will lead directly into the double track climb trail to lap this area. This hub will be created to simplify wayfinding and stops to navigate and allow riders to reconvene after descending significant distances without experiencing intersecting trails, which interrupt flow.

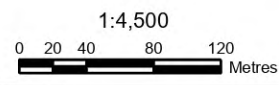
Hub 6 will require narrowing of Kelly's Cove and chokes of all new trails to prevent ATV access and will be the main entry point into the mid and backcountry.

### *Mid Country highlights*

- The current Shoreline Trail is predominantly a blue difficulty level trail with a few short segments of black difficulty. The trail will be reconstructed to represent continuous blue difficulty, allowing intermediate riders the opportunity to "stretch their legs" and enjoy the hemlock forest and intimate experiences with the shoreline.
- New segments of trail will be added to Shoreline to make it one continuous singletrack to Kelly's Cove, where a new intermediate difficulty climb will allow riders to return to the new Split Rail segment.
- Both ends of Bev's Knoll will be decommissioned and realigned to hub junctions. This trail has experienced heavy volumes of ATV use, partly due to both ends being located on old roadbeds, creating enticing ATV access and contributing to trail widening. The new build involves 1.1km long singletrack with a hand-built technical feel and a few key berms and fun TTFs. It will extend to the waters edge where riders can enjoy the views at the shoreside picnic table lookout.



# Woolastook Trails Midcountry Map



Date: 5/24/2022  
 Spatial Reference: NAD 1983 UTM Zone 20N  
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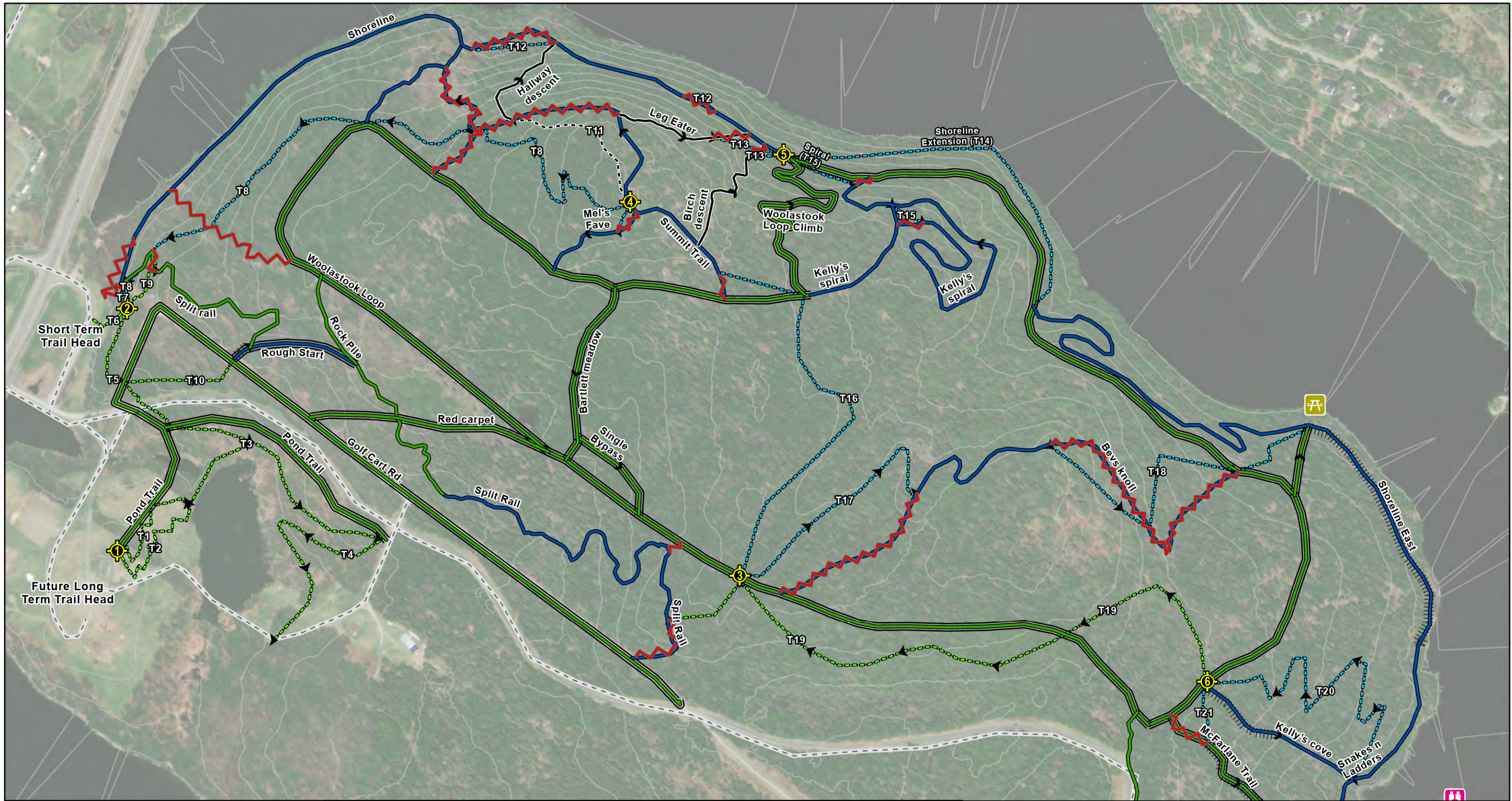
## LEGEND

- Bridge
- Central Hubs
- Table
- Viewpoint
- Existing Access Road
- Narrow Existing Trail
- Decommission Trail
- 10m Contours
- Existing Trail by Difficulty**
- Black
- Blue
- Green
- Conceptual Trail**
- Black
- Blue
- Double Black
- Green
- Stacked Loop Trail**
- 6
- 7
- 8
- 9
- 10

## LOOP TABLE

Loop No.	Trail Difficulty	Segment Length (m)
6	Blue	6676
7	Blue	1486
8	Blue	1133
9	Black	360
10	Black	357

# Loop 6 - 10



**Woolastook Trails  
Proposed Trails and Upgrades  
Midcountry Map**



Date: 5/24/2022  
 Spatial Reference: NAD 1983 UTM Zone 20N  
 Exported By: SP 2115  
 Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND**

- |              |                       |                                     |                                  |                                     |
|--------------|-----------------------|-------------------------------------|----------------------------------|-------------------------------------|
| Bridge       | Existing Access Road  | <b>Existing Trail by Difficulty</b> | <b>Preferred Trail Direction</b> | <b>Proposed Trails and Upgrades</b> |
| Central Hubs | Narrow Existing Trail | Black                               | Down Trail                       | Black                               |
| Table        | Doubletrack           | Blue                                | Up Trail                         | Blue                                |
| Viewpoint    | Decommission Trail    | Green                               |                                  | Double Black                        |
|              | 10m Contours          |                                     |                                  | Green                               |

### 3.3. BACKCOUNTRY TRAIL NETWORK

The backcountry network will be focused on providing intermediate to advanced riders with longer distance options and form the enduro riding zone. This area will provide a more advanced rider experience that integrates longer descents, progression of trail difficulty, and a longer approach time (time and effort required to access the area). Placing more difficult trails farther away from trail heads reduces user conflict by disbursing users and reduces liability by adding the filter of fitness and skill level.

The backcountry area is designed to be ridden counterclockwise, with one main climb trail and a series of downhill trails. The climb trail will be machine built but should remain narrow to maintain the singletrack characteristic desired for the network.

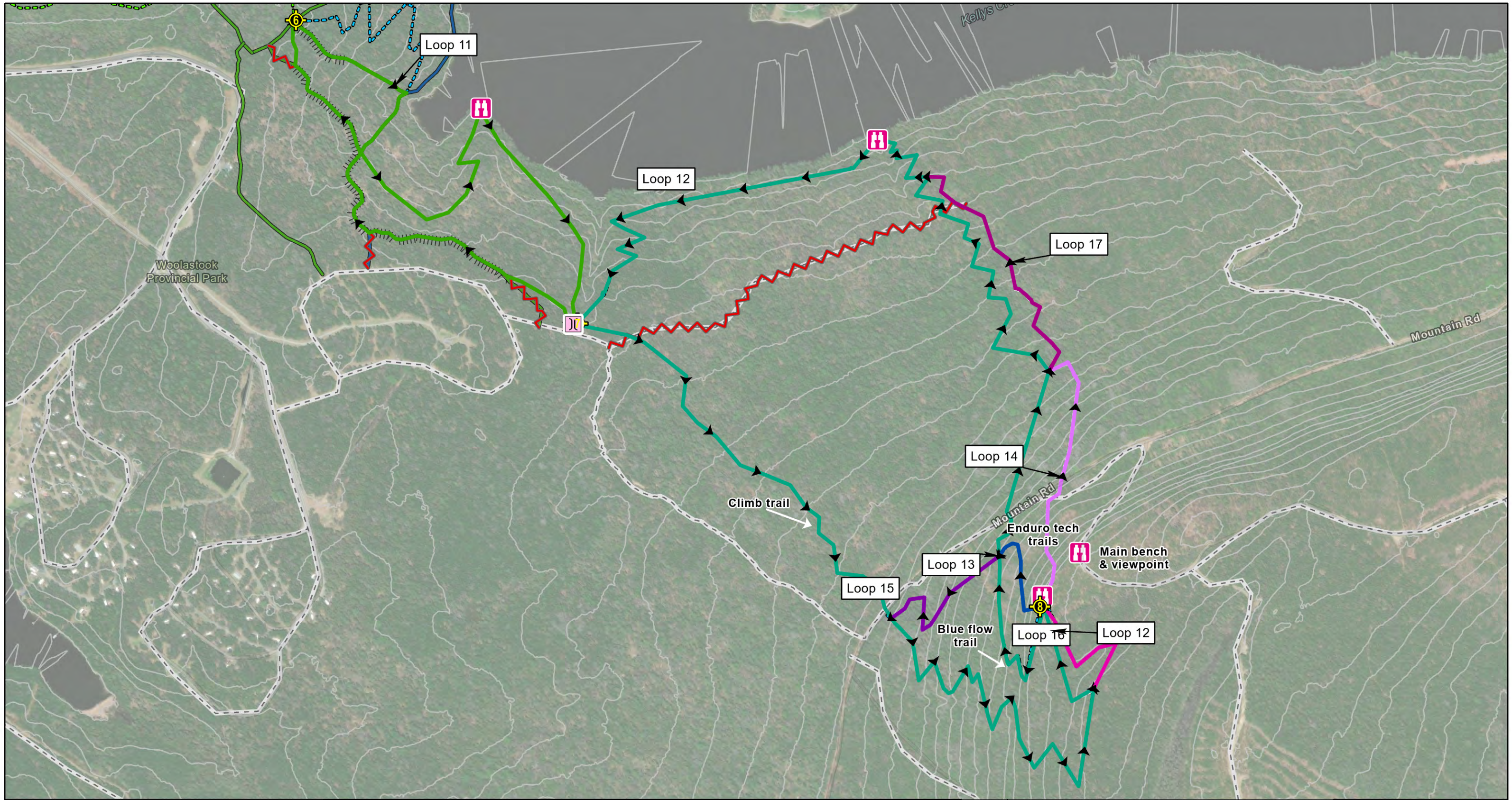
#### *Backcountry Hubs*

Return trails will meander up and down the hillside to Hub 7. This hub should have adequate space cleared on the east side of the bridge so that riders can mingle and chose trails.

Hub 8 will be a marquee viewpoint of the network, as this cliff edge provides an expansive view over the Saint John River Valley. Minor tree clearing will be required and need to be maintained, and 2-4 benches should be installed. If possible, connection to this area should remain separate from ATV traffic and the temptation to construct a maintenance access road/trail into this viewpoint from Mtn Road should be avoided.

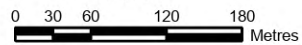
#### *Backcountry Highlights*

- The descents off the summit elevation of 167m will have significant variety, with one full length flow trail, a full-length tech trail, and a ½ lap tech trail. The trails will extend to the waters edge with an established viewpoint and bench.
- A cross connection will be built to allow riders to lap the steeper upper portion of this zone.
- The tech trails dropping through the cliff could each have multiple entrances to allow for variety of difficulty.
- T22 will be a two-way trail and will access the rope swing and viewpoint. This trail will avoid the need for any “out and back” rides. Along this trail it will access the existing rope swing and viewpoint, and the descent to the rope swing will be around 500m long.



## Woolastook Trails Backcountry Map

1:6,000



Date: 5/24/2022  
 Spatial Reference: NAD 1983 UTM Zone 20N  
 Exported By: SP 2115  
 Credits: Esri Community Maps Contributors, Province of New Brunswick, Esri Canada, Esri, HERE, Garmin, Swire, GeoTechnology, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

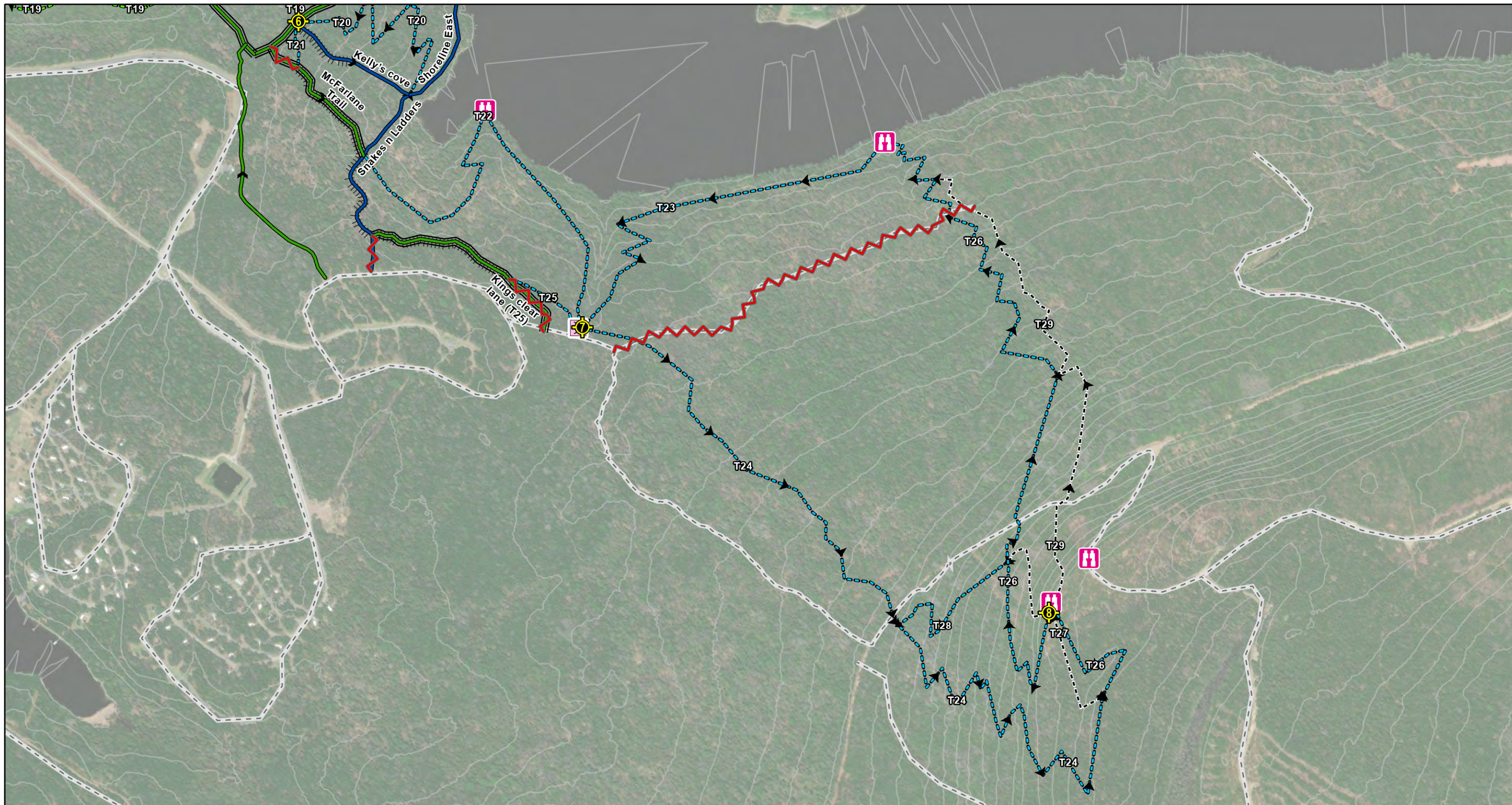
### LEGEND

Bridge	Narrow Existing Trail	Conceptual Trail --- Black	Stacked Loop Trail ➔ 11
Central Hubs	Decommission Trail	--- Blue	➔ 12
Table	10m Contours	--- Double Black	➔ 13
Viewpoint	Existing Trail by Difficulty — Black	--- Green	➔ 14
Existing Access Road	— Blue		➔ 15
	— Green		➔ 16

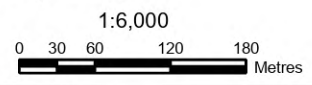
### LOOP TABLE

Loop No.	Trail Difficulty	Segment Length (m)
11	Blue	2046
12	Blue	4149
13	Black	185
14	Black	472
15	Blue	309
16	Black	279
17	Black	460

# Loop 11 - 17



**Woolastook Trails  
Proposed Trails and Upgrades  
Backcountry Map**



Date: 5/24/2022  
 Spatial Reference: NAD 1983 UTM Zone 20N  
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**LEGEND**

- Bridge
- Central Hubs
- Table
- Viewpoint

- Existing Access Road
- Narrow Existing Trail
- Doubletrack
- Decommission Trail
- 10m Contours

- Existing Trail by Difficulty**
- Black
  - Blue
  - Green

- Preferred Trail Direction**
- Down Trail
  - Up Trail

- Proposed Trails and Upgrades**
- Black
  - Blue
  - Double Black
  - Green

### 3.4. TRAIL DECOMMISSIONING

Decommissioning will need to take place on some of the existing trails in the Woolastook area. Widened trail systems (Figure 3 & Figure 4) with multiple trail intersections cause confusion for trail users and change the user experience. Trails have widened due to ATV use, which can access the trail because they have been constructed on old roadbeds, have been cleared too wide, and inadequate signage/education has been provided for the motorized users. In some cases, intentional clearing by the trail crew to allow wider winter grooming equipment has created this issue. ATV users are also drawn to the same attractions as the non-motorized crowd – such as the picnic table on Shoreline East and the rope swing. Users of the campground could be educated upon entering of the zones/trails that allow motorized traffic.

The goal for trail decommissioning will be to keep ATVs out of the network and maintain singletrack trail in order to meet trail user objectives and add challenge. This is accomplished by constricting trail entrances and narrowing or decommissioning existing trails to prevent ATVs from entering the system. Decommissioning techniques would involve the use of a medium-sized excavator to loosen up the trail tread surface and create a “rough and loose” surface with large holes and piled mounds 2 bucket widths apart. After loosening the surface, green organics and small trees can be moved onto the surface to promote and accelerate growth. In addition, logs and stumps can be used as corralling features to narrow the trail or completely block it off. The use of vertical deadfall or planting live trees particularly breaks up the sight lines.



*Figure 3. Trail widening results in a less challenging trail and changes user objectives.*



*Figure 4. An example of trail widening on existing Woolastook trails.*

### 3.5. SIGNAGE AND AMENITIES RECOMMENDATIONS

Trail enthusiasts of all types and abilities have a common need: to be orientated. Effective wayfinding and signage systems should be intuitive and attractive and should be designed to support a safe and memorable visitor experience. Recognizable signage located in strategic locations/intersections enables trails users to make informed decisions as they plan their outbound and return routes. Signs should be concentrated at trailheads (Figure 5), intersections, parking areas, or other accesses, and should be kept to a safe minimum throughout the network. Interpretive signs that are not site-specific could be located to create natural rest points and take advantage of views, scenic features, and shade or shelter. Wayfinding signage should be as simple as possible, easy to read and understand, and clearly visible as to allow users to quickly find the information that is relevant to them.



Figure 5. Signage with clear and concise messaging can be used at trailheads.

The “breadcrumb style” is typically the most successful signage system for wayfinding navigation on trail networks of this size and relative tangle of the front and mi country trails (see Figure 6). This means that a loop or route of consistent style and difficulty is designated by the same image, color marker (for example, an orange square), or some other identifying marker (e.g., Trail number 15 or name) allowing a rider to put the map away and make instant decisions at intersections. This signage style requires small signs at each



Figure 6. An example of breadcrumb style signage for navigation that also include trail difficulty

trail intersection and throughout the network as appropriate for the trail setting. Choosing roughly five of the loops that are outlined and signing them at every intersection will accomplish a simplified version of the breadcrumb signage. These loops will then become the most popular in the network as navigation is largely removed from the experience. \*TIP: Ensure signage is placed at eye level or below and within rider sight lines.

The current signage could be upgraded to avoid confusion. Currently it is difficult to tell the trail difficulty as the entire sign color is the trail difficulty. For interim use, this could even be accomplished with a difficulty sticker with a larger white background applied to the existing signs. Future signs should have a completely different color, such as a white background, black text, and then the difficulty symbol with the correct color (Green, Blue, or Black)

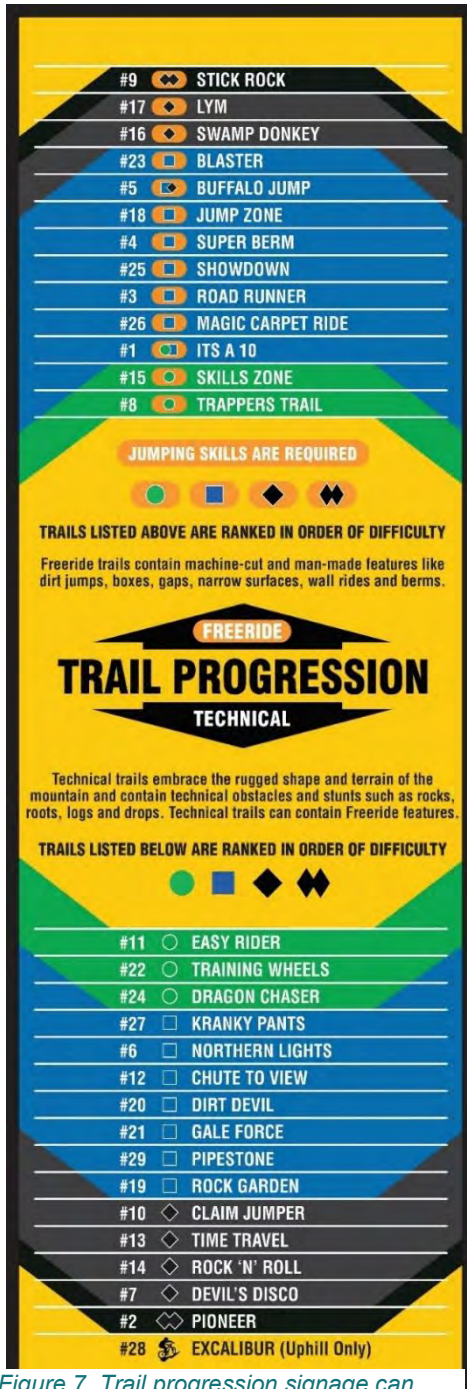


Figure 7. Trail progression signage can help riders make decisions based on their ability level

Kiosks displaying a combination of maps and trail user etiquette signage (Figure 5 & Figure 7) should be located at trail heads. A temporary kiosk should be located at the short-term trail head and a more permanent kiosk should be constructed at the long-term trail head at the top of the hill. Detailed maps should be placed at main central hubs to give riders a quick and clear overview of their location in the trail system. The Trail Progression signage (Figure 7) should be incorporated into kiosks and at the top of Hub 4 and 7, where multiple challenging options exist that are gravity based and have a higher likelihood of injury. This sign helps riders to understand the order of difficulty for Freeride/Flow and Technical trails and will support rider progression by influencing trail selection.

Benches are a key finishing touch to signify important intersections and viewpoints. This will improve user enjoyment of the area, connection with nature and encourage a slower pace to enjoy the natural setting. In addition, benches control users' unintended environmental impacts by consolidating usage to one specific intensively used site. They also provide an important risk management objective by providing a recognizable location within the network. Trail names should be placed on the start of each trail, to allow easy navigation as well as pinpoint location for emergency access.



Figure 8. Trail etiquette signage can be used at kiosks throughout the trail network

### 3.6. WINTER TRAILS

Currently, tracked side-by-sides or wide snowmobiles are used to groom the winter trails for fat biking. The width of these machines requires widening trails and cutting down trees which is allowing ATV access in the summer and negatively impacting the trail experience in the summer.

The ideal solution would be to use narrower grooming equipment, and a narrow snowmobile similar to that used in Marysville could be considered. Many winter grooming options exist and the most appropriate depends on the trail and soft snow depth. For a narrow trail, the SnowDog or Rokon (Figure 9) are good tools as they are more compact and can turn tight corners. This means trees that act as slalom gates and keep the trail tight and exciting in the summer can remain. The negatives of both of these tools are they do not travel well through deep fresh snow, and do not have enough pulling power in these conditions to haul a drag that can deeply knock the air out of the snow to transform it into a harder surface. A snowmobile has this power but is generally wider and does not turn tight corners well. A snowmobile is useful on wider trails with wide radius corners. A snow bike ( a converted dirt bike) has been successfully used for deeper snowpack areas. A conventional XC ski drag can be narrowed to roughly the width of the snowmobile skis. If drags are used, ensure they are light enough to be moved by hand as the operator will become stuck multiple times. Operator safety should be considered when selecting a grooming tool and trails that are off camber should be avoided or shoveled flat.



*Figure 9. From top left; A SnowDog; Yvon Martel's MTT-136 electric snow machine; and a Rokon, a two-wheel drive motor bike.*

## 4. Construction Phasing and Maintenance

Construction of the trail network is sequenced that each new trail can be ridden as part of a loop as soon as it is completed. Many of the longer trails are designed/planned based with budget considerations and funding availability in mind. The outcome is that depending on the funding available, the trails can be linked back to the climb trail, or an adjacent downhill trail to temporarily reduce the length and to fit the budget constraints. In this manner, trail construction quality can be maintained to suit the budget available. This phased approach is paramount in trails master planning as it allows the trail managers an opportunity to build succession and have 'shovel-ready' projects for when funding becomes available.

### 4.1. PHASED TRAIL CONSTRUCTION

#### Phase 1

Phase 1 is largely an improvement of the existing mid country ride network and will connect existing trails and form a continuous loop. A key longer loop will be following along the Shoreline Trail and returning riders to the trailhead on the existing and upgraded Split Rail Trail.

Construction of: T5, T6, T7, T10, T12, T13, T14, T19, T20

#### Phase 2

Phase 2 will establish a connector on continuous singletrack to the mid country summit at Hub 4. The trail will allow riders to gain access to the new flow trail experience and provide excitement for the riding community.

Construction of: T8, T9, T16

#### Phase 3

This phase will provide a more engaging singletrack downhill from Bev's Knoll to the picnic table viewpoint. It will add a blue technical descent to the network that many riders will enjoy for challenge and variety.

Construction of: T17, T18

#### Phase 4

Phase 4 adds small segments of connecting trail to the network. These additions will reduce confusion at trail intersections or hubs and improve wayfinding. In addition, T11 will be the main black technical trail in the mid country, drawing intermediate and advanced riders to the area.

Construction of: T11, T15 (and all remaining small segments in this area)

## **Phase 5**

Phase 5 prioritizes the narrowing of existing trails and construction of narrow singletrack with the intention of preventing ATV use of the trail system.

Construction of: T21, T25

## **Phase 6**

This phase will provide majority of the blue difficulty backcountry trails. The climb trail to the summit is included and this high point allows for 132m of elevation change. This phase creates longer descents and the option to lap the network.

Construction of: T23, T24, T26

## **Phase 7**

In Phase 7, trail construction adds more progression of trail difficulty and a black tech and enduro zone from the backcountry summit. This phase provides the completion and total variety for all users in the backcountry network. T22 is included in this phase because it does not significantly affect connectivity of the network.

Construction of: T22, and remaining backcountry T27, T28, T29

## **Phase 8**

This area is currently outside of the license of occupation and approval is needed before construction can begin. Once completed, this will become the main loop for beginners to hone skills, play, and progress, and form the start and end of every ride.

Construction of: T1, T2, T3, T4

## **4.2. COST ESTIMATES**

Costs shown in Appendix B are estimates based on recent industry contracts and do not consider volunteer time. In addition, costs are strictly trail building costs. They do not include bridges, if required, or other structures or TTF's. However, a contingency of 20% has been added to account for unknown conditions. In addition, Appendix B should be read in detail to understand the limitations to the Cost Estimates and Phasing Plans included in this Trails Master Plan (TMP).

### 4.3. MAINTENANCE REQUIREMENTS

Trails need to be planned, designed, constructed, and maintained to the selected industry standard. A clear progression in difficulty of trails and TTF's should be present on the landscape. Consistent and responsible trail maintenance may be the most important aspect that reduces risk for trail users and limits liability for trail managers and landowners (Figure 10). It is important to note that poor property management is the most common litigation tactic whereby the trail user claims negligence from the land manager/owner due to improper design, construction, or maintenance. Therefore, it is essential to develop specific policies and guidelines that fit specific local situations, as trail and infrastructure maintenance requirements depend on many unpredictable and unique factors. These policies/guidelines should include thorough documentation of the inspection and maintenance of trails to provide protection from potential litigation. Included in the maintenance policy should be achievable goals set with reasonable deadlines, minimal complexity and should be flexible to account for the potential growth in user numbers.

It is recommended that all constructed TTFs are given a unique identifier and are inspected on an appropriate basis for deterioration, fall-zones, sightlines, signage, access/egress routes and overall condition.

For the proposed trail network, the following minimum routine maintenance is expected to be required:

- Raking or reshaping of select, high use flow trails due to wet, dry and dusty conditions during summer months.
- Semi-annual trail tread repair by hand on flow trails where braking bumps have formed; and,
- Annual brushing of trail corridors as required.
- Inspection and assessment of all TTFs and bridges.
- Bi-Annual blocking off shortcuts/trail braiding/creep that form during races or due to "strava lines"

It is anticipated that RVC and Woolastook Park will be able to maintain the trails with the same agreements currently in place.



Figure 10. RVC volunteer trail maintenance

## 5. Closure

McElhanney is pleased to submit this report to Woolastook Park and the River Valley Cycling. The opportunities throughout Woolastook Park are excellent for a diverse, exciting, and engaging trail network that entices locals and tourists to return time after time. McElhanney appreciates the opportunity to work with Woolastook Park, RVC, and the stakeholders on this project and we look forward to working on the next steps identified in this report. If you have any questions regarding the information within, please do not hesitate to contact the undersigned.

Respectfully submitted,

**Matt Hadley, BSc.**

Project Manager

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403-621-4074

### **Disclaimer:**

*This report has been prepared by McElhanney Ltd. for the benefit of Woolastook Park and River Valley Cycling. The information and data contained herein represent McElhanney's best professional judgment in light of the knowledge and information available to McElhanney at the time of preparation. Except as required by law, this report and the information and data contained herein are to be treated as confidential and may be used and relied upon only by the client, its officers, and employees.*

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## References

*Bureau of Land Management, 2017. Guidelines for a Quality Trail Experience.*

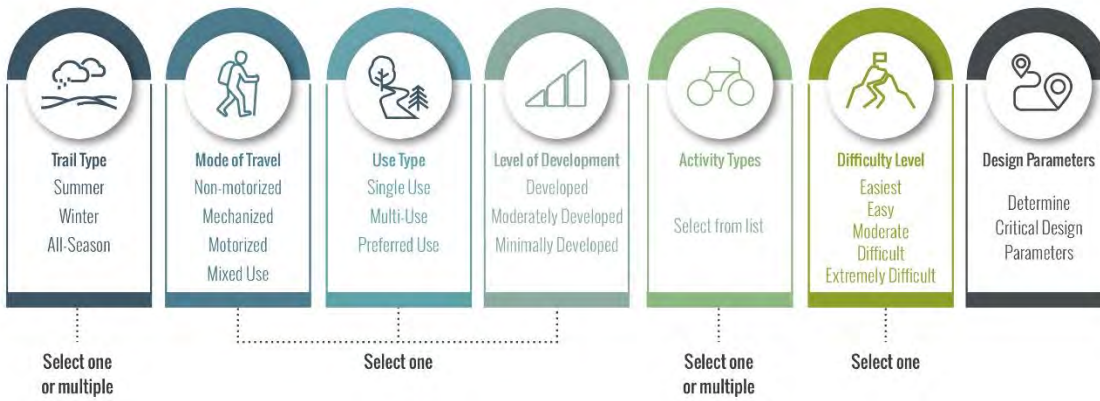
*International Mountain Bike Association, 2004. Trail Solutions: IMBA's Guide to Building Sweet Singletrack.*

*River Valley Cycling., 2022. Retrieved from: <https://rivervalleycycling.com/>*

# **Appendix A**

## **Trail Management Objectives (Sample)**

## Trail Management Objective (TMO) Summary



Trail Name	Trail Length	Recreation Setting	Level of Development	Trail Type (Season)
Segment ID	Segment Length	Direction	Mode of Travel	Use Type
Activity Types	Prohibited Activities	Design Activity	Difficulty Level	Inspection Frequency
Primary Trail User Objectives			Secondary Trail User Objectives	

**Description of the Trail Experience** (style of trail, shape of corners, intended user and surface type)

Incl. flow/tech

**Trail Design Parameters**

Tread Width	Target Grade	Max Grade	Target Cross Slope	Clearing Width	Tread Surface

**Technical Trail Features**

SAMPLE

**Drainage Features and Requirements**

**Construction Notes**

# **Appendix B**

**Completed Trail Management Objectives, Phasing and Lengths**

Phase	Trail Segment Number or Segment Number	Trail Description	Trail User Objectives	Trail Difficulty	Trail Design Style	Direction of Travel	Trail Width (m)	Build Style	Length of New Build (m)	Decommission (Trail name and length) (m)	Decommission Length (m)	Narrow Existing Trail (m)
8	T1	Beginner singletrack climb trail. Raised tread is required to be equal to the grass height and all material will be imported. The area over and around the trail will be mowed and refined appearance is necessary. Sod to be removed from site.	Efficiency, connectivity	Green	Flow	Bi-directional	1.2	machine singletrack	179	--	0	0
8	T2	Beginner difficulty downhill incorporating many rollers, berms, and low consequence TTFs. All material will need to be imported. Sod will need to be removed and hidden so it has a refined appearance.	Play, challenge, socializing, safety, security	Green	Flow	Downhill	1.2	machine flow trail	219	--	0	0
8	T3	Beginner difficulty trail with wet marshy areas, which will require a boardwalk. The trail will include small rollers and berms, with a very natural feel to the singletrack.	Play, challenge, learning, connectivity	Green	Flow	Bi-Directional Downhill Preferred	1-1.2	machine singletrack	233	--	0	0
8	T4	Beginner downhill flow trail that will include a mixture of natural technical features, rollers, and small berms on corners. It will create a longer loop option of the beginner singletrack.	Play, challenge, escape, socializing, safety, security	Green	Flow	Downhill	1-1.2	machine flow trail	578	--	0	0
1	T5	A bi-directional trail that will provide access to the Shoreline trail, Split Rail trail, and new flow trail. Minimal small rollers, berms, and optional TTFs will be incorporated. Ensure intersection across road has good sight lines cleared and crosswalk sign	Efficiency, connectivity	Green	Flow	Bi-Directional	1-1.2	Machine Singletrack	220	--	0	0
1	T6	A bi-directional singletrack connector allowing access to the trail network from the initial trailhead and roadside parking.	Connectivity	Green	Flow	Bi-Directional	1.2	Machine Singletrack	116	--	0	0
1	T7	This segment of blue trail will connect the Split Rail/Flow Trail Junction to the existing Northwest Shoreline Trail. It will be the new entrance/exit from the junction near the Short Term trailhead to provide easy access onto and off of the Shoreline trail from the new flow trail and Split Rail trail. A wide turn platform is required at the junction of T5,6,7, 8,9	Connectivity	Blue	Flow	Bi-Directional	1	Machine Singletrack	106	Shoreline, Split Rail	250	0
2	T8	A blue flow trail with bermed corners, tabletop features, and rollers. The trail will be relatively narrow on straightaways and between features and maintain more of a singletrack experience compared to a full bike park experience. Existing rocks can be used to construct optional features.	Play, challenge, learning, variety	Blue	Flow	Downhill	1.2-1.5	Machine Flow Trail	1035	Dave's Drop, Duke of York, Summit Traverse Trail	628	0
2	T9	This segment of trail will be added on to the existing Split Rail trail to take riders to the junction near the Short Term trailhead and remove conflicting merge or two-way traffic from the flow trail (Split Rail trail).	Play, Challenge, Variety	Green	Flow	Bi-Directional	1.2	Machine Flow Trail	98	--	0	0
1	T10	This will be the main climb into the network, and it will also form a beginner loop for the return. The beginning of Rough Start should be narrowed and improved to become smooth fun singletrack.	Efficiency, connectivity	Green	Flow	Uphill	1	Machine Singletrack	188	--	0	0
4	T11	Longer technical trail from the summit joining into the Hallway descent. Leave tree roots and rocks and keep the trail narrow with some sharp corners, off camber and steeper sections. After 15m fall-line sections, turn the trail to create a traverse that will drain water and dump speed, occasional small catch berms are appropriate. Subtle jumps onto steep terrain can be constructed as optional features.	Challenge, risk, variety	Black	Technical	Downhill	0.6	Hand Built	225	--	0	0
1	T12	New trail built to replace steep section of existing Shoreline West trail.	Challenge, Variety, Fitness	Blue	Technical	Bi-Directional	0.8	Hand Built	162	Shoreline	162	0
1	T13	New Hub junction to minimize confusion and signage in this area and have riders from every downhill trail be able to turn directly onto the climb trail or Shoreline trail.	Challenge, risk, variety	Black	Technical	Downhill	0.6	Hand Built	140	Lower Leg Ester & Birch Descent	75	0
1	T14	An extension of the Shoreline Trail, this trail should descend to the shoreline to provide the view and interaction of the water edge in one location and then climb back up to join the existing Shoreline East junction. This junction could be eliminated from touching the doubletrack and the entire trail remain separate until the picnic table. The length of the descent should be continuous and maximized.	Variety, escape, nature, challenge, fitness	Blue	Technical	Bi-Directional Downhill Preferred	0.8	Hand Built	550	--	0	0
4	T15	New finish to existing Kelly's Spiral trail to make wayfinding easier in this area. Also, a trail will be added to remove an intersection on Kelly's Spiral trail.	Efficiency, connectivity	Blue	Technical	Bi-Directional	0.8	Hand Built	140	Lower Spiral & Intersection	60	0
2	T16	From Hub 3, a new cross-country singletrack will connect the North and South portions of the network and remove an intersection and doubletrack on the way to the summit at Hub 4. Trail will be constructed in quite flat terrain, which will require ~250m of raised tread.	Connectivity, exercise, variety	Blue	Technical	Bi-Directional	1-1.2	machine singletrack	590	South Summit Trail	35	0
3	T17	Bev's Knoll has become very wide with ATV traffic, much of existing trail requires decommissioning. This new west end follows a ridge that will be narrow singletrack with some tree roots and rocks to give it a blue technical feel. Trail will be preferred direction South to North (as a DH) but rideable both directions.	Variety, challenge	Blue	Technical	Preferred Downhill	0.6	Hand Built	356	Bev's Knoll	236	0
3	T18	The descent of Bev's Knoll from the high point to the picnic table. The trail should have a technical challenging characteristic with a very raw feel, and incorporate any tree roots or tree roots to add challenge. A few small berms and small optional jumps or drops are suitable.	Variety, challenge, risk	Blue	Technical	Preferred Downhill	0.6	Hand Built	495	Bev's Knoll	376	0
1	T19	This trail will be an extension of Split Rail trail with similar features of Split Rail. The preferred direction from Hub 3 is east to west travel. Trail should have small flow features to function in both directions, very small berms, and optional rollers. Existing split rail should be touched up to ensure proper drainage and berm radius, berm pocket, and berm placement, and additional rollers added where suitable for bidirectional traffic. These rollers could be angled and cover half of the trail to allow for seated climbing yet fun pumping descending.	Play, challenge, variety	Green	Flow	Bi-Directional	1.2	Machine Flow Trail	934	South East end of Split Rail & JCT at mid point. & Shoreline East	120	407
1	T20	Climb option to allow clockwise completion of the shoreline loop with an equivalent difficulty climb to the rest of the loop. Kelly's Cove and Snakes and Ladders are both challenging as climbs. This trail could be hand built but should have a relatively smooth surface.	Efficiency, connectivity	Blue	Technical	Uphill	1-1.2	Machine Singletrack	616	Kelly's Cove	0	124
5	T21	To create a Hub junction and simplify decision making and signage, move the existing junction of McFarlane trail to the north to share a junction with Split Rail, Kelly's Cove, and the new climb trail. McFarlane, Snakes/Ladders, and Kings Clear trails should also be narrowed to limit ATV travel and re-create an engaging singletrack experience. Kelly's Cove should be narrowed as well.	Efficiency, connectivity	Blue	Technical	Bi-Directional	1-1.2	Machine Singletrack	91	McFarlane Trail & Snakes n Ladders	131	720
7	T22	A bi-directional singletrack trail. Area contains potentially wet terrain which may be avoidable by staying south on higher ground. Wet areas requiring raised tread could be machine built and other trail segments could be hand-built to give a technical feel. Riders will be able to access a viewpoint and rope swing overlooking Kelly's Creek Basin.	Play, challenge, fun, nature, escape	Blue	Technical	Bi-Directional	0.8	Hand/Machine Singletrack	893	Snakes and Ladders & Kings Clear Lane	0	462
6	T23	Return collector from the enduro zone, narrow singletrack with some roots and rocks to create a technical feel but not too challenging. This trail will return all riders from the enduro descents to the climb Trail T24. Sections of this trail come quite close to an existing ATV trail. Whilst the trail is predominately meant to be ridden from east to west, the contractor should ensure that sight lines are appropriate for bi-directional use. The gradient of the trail is generally quite flat and as such, an effort should be made to create an engaging trail where there are sections of downhill.	Efficiency, connectivity	Blue	Technical	Bi-Directional, Downhill Preferred	0.8	Hand/Machine Singletrack	861	--	0	0
6	T23B	The intention of this trail is to be a bi-directional trail, that takes riders from the terminus of T26 down to the lake and back up. This trail has numerous switchback corners and a steep cross-slope. The trail's primary role is to take people to the lake for a view.	Efficiency, connectivity	Blue	Technical	Bi-Directional, Downhill Preferred	0.8	Hand/Machine Singletrack	441	--	0	0
6	T23C	This is the climb trail to return riders from T26 back to T23. In the future, this trail may be repurposed into a downhill trail, as such it should be constructed as a bi-directional trail, although it will initially be signed and ridden as an uphill trail.	Efficiency, connectivity	Blue	Technical	Bi-Directional, Uphill Preferred	0.8	Hand/Machine Singletrack	188	--	0	0
6	T24 LOWER	The main climb trail in the "Backcountry Zone" and the enduro area. It is to be a relatively smooth trail, with some obstacles where it adds interest. The trail is separated in T24 Lower and T24 Upper, as the section of trail below 'Mountain Road' is in a moist area with frequent occurrences of standing water. This section is not flagged/signed by McElhinney. Micro ridges and knolls should be incorporated and machine built raised trail tread will need to be used frequently for this lower portion.	Efficiency, connectivity	Blue	Flow	Uphill	1-1.2	Machine Built Flow	1777	--	0	0
6	T24 UPPER	Similar to T24 Lower, once complete T24 Lower and Upper will be one continuous trail. T24 Upper begins after Mountain Road - micro ridges and knolls should be incorporated and machine built raised trail tread may need to be used. The upper most portion of this trail features many opportunities to utilize climbing TTFs with rocks and roots for added interest. Sections of trail that are along bedrock/moss should be kept narrow (0.5m-0.8m) and only the organic shall be removed. This trail should have a backcountry feel, sections of handbuilt trail should be considered.	Efficiency, connectivity	Blue	Technical	Uphill	0.8 - 1	Machine Singletrack and Hand Built	2042	Part of Baseline road access to the ATV trail	211	0
5	T25	New build to the new bridge, includes the bridge. The decommissioning and narrowing is included in T21.	Efficiency, connectivity	Blue	Technical	Bi-Directional	1-1.2	Machine Singletrack	156	Kings Clear Lane	121	
6	T26	A blue flow trail from height of land with a stop at the viewpoint where riders can trade trails. Bermed corners, tabletop features, rollers, and a relatively narrow singletrack experience. Existing rocks can be used to construct features such as drops. Trail to be wider at landings and fall zones of features such as jumps and drops. Optional black diamond drops to be incorporated where appropriate, however features should have a ride around option. Slow the trail with corners and by turning it uphill before the junction with T27 and the MTN road crossing. Construct benches and clear view point at top of cliff band. Do not allow ATV access into this view point/trail system.	Risk, challenge, play, fun	Blue	Flow	Downhill	1.2-1.8	Machine Built Flow	1938	--	0	0
7	T27	Rocky technical trail with steep lines through the existing cliff and drops off of rocks where appropriate. After 20m of fall-line the trail should turn to reduce rider speed and shed water. Slow the trail before the junction with the T26 Flow trail.	Challenge, risk, variety	Black	Technical	Downhill	0.6	Machine Built or Hand Built	426	--	0	0
7	T28	Collector trail to lap upper enduro zone, this is a preferred downhill trail with a technical feel. Some of the 180 corners should be bermed and incorporate any optional TTFs and jumps where possible.	Connectivity, challenge, risk	Blue	Technical	Downhill	0.8	Hand Built	325	--	0	0
7	T29	Technical trail from the viewpoint through the cliff band. The trail should incorporate drops and additional rock features to add challenge and interest. After 20m of fall-line the trail should turn to reduce rider speed and shed water, this can be done with a bench cut, berm, or a natural uphill within the terrain. Slow the trail before crossing Mountain road, by progressively tighter radius corners and turning it uphill. The lower portion should have a technical feel incorporating roots, rock features, and have constructed optional drops. Could extend clear to viewpoint at Kelly's Cove if sufficient dry terrain exists in final pitch to fit both flow trail and tech trail. Additional future entrances and DH trails could be constructed parallel to this trail and join either T28 or T29 prior to the MTN road crossing.	Challenge, risk, variety	Black	Technical	Downhill	0.6	Hand Built	955	--	0	0

# **Appendix C**

## **Statement of Limitations**

### *Statement of Limitations*

It must be understood by the users of this TMP that proposed trail alignments are not to be viewed as detailed designs. All proposed trails are conceptual in nature and will require additional fieldwork, design, stakeholder engagement, and refinement prior to any construction.

A Trails Master Plan is never perfect. It does not contain all the answers or all the solutions. That should never be the intent of this, or any other master plan. This TMP should be a “living” document that can adapt to changing goals. The intent is to chart a course for a singular vision that will create a better, stronger, and more varied trails experience for locals and tourists.

The TMP provides a collective set of goals and objectives for the direction that trail development should take over the course of the next 10 years. By having the City of Sault Ste. Marie and local interest groups like the Sault Cycling Club and Kinsmen Club of SSM working together toward long-term goals in a strategic manner, the trail system will be developed to provide the best value for the community it serves.

**Construction Cost Estimates.** This construction cost estimate has been prepared using the design and technical information currently available, and without the benefit of Geotechnical information or recent local bids. Furthermore, McElhanney cannot predict the competitive environment, weather or other unforeseen conditions that will prevail at the time that contractors will prepare their bids. The cost estimate is therefore subject to factors over which McElhanney has no control, and McElhanney does not guarantee or warranty the accuracy of such estimate.

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