

# Mountain Bike Trails Concept Plan for Moose River Plains Wild Forest, *December 2013*



## **Prepared For:**

New York State Department of Environmental Conservation

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*IMBA Trail Solutions visited the Moose River Plains Wild Forest for one week in October of 2013 to conduct field research, meet with stakeholders, and to begin the process of developing a conceptual design for mountain bike use in the area. All of the designs presented in this report are conceptual in nature and have not been completely field verified. Additional work will need to be done in the field to finalize the designs of reroutes and proposed trails described in this report.*

## OVERVIEW

Located in the heart of Adirondack Park, Moose River Plains Wild Forest (MRPWF) is an approximately 85,000-acre forest preserve owned and managed by the New York State Department of Environmental Conservation (DEC). One of the proposed management actions in the 2011 DEC MRPWF Unit Management Plan (UMP) is the development of a comprehensive mountain bike plan for the MRPWF. Goals of the plan include evaluating the suitability of existing routes and a survey of currently undeveloped areas, which may prove useful in hosting new natural surface singletrack trails targeted toward bicycle enthusiasts.

IMBA Trail Solutions was hired by the DEC to create a mountain bike trails concept plan for the MRPWF. Guided by the principles and priorities defined in the 2011 UMP, a mountain bike trail concept plan will provide a specific strategy for improving existing trails, and creating new trails, targeted to provide high quality trail experiences to mountain bikers.

In the fall of 2013 a Trail Specialist with IMBA Trail Solutions visited the area to work with DEC staff and local trail advocates on the mountain bike conceptual plan for the forest. Fieldwork included the study of existing trails that are currently open to mountain biking, and a survey of other less developed areas of the forest that may prove useful in hosting new mountain bike trails.

This report provides a description of the proposed mountain bike trails concept plan developed by IMBA Trail Solutions.

## EXISTING CONDITIONS

The MRPWF is bounded on the north by the Pigeon Lakes Wilderness Area, Raquette Lake and Blue Ridge Wilderness, on the east and the south by the West Lakes Wilderness and the private lands of the Adirondack League Club, and on the west by Fulton Chain Lakes and State Route 28.

The area is a beautiful mix of mountains and scenic plains, and the region includes many lakes, ponds, streams and wetlands important to both people and wildlife.





Snowmobiling in the winter is very popular and the area hosts an impressive network of snowmobile trails.

Many roads and trails in the area are open to mountain bicycling, but only a few of these routes are designed, built or maintained in a condition that invites use by cyclists. Generally speaking, most of the routes that are suited to cycling can be accessed from area campgrounds and existing trailhead facilities. The area includes many miles of gravel roads and other less-improved two-track roads. Many of these lesser-traveled routes provide opportunities for longer

mountain bike outings through some of the more distant reaches of the forest.

The MRPWF provides a great setting for the development of an outstanding network of native surface singletrack trails optimized for mountain bicycling. This mountainous area boasts over 1900' of vertical relief, gorgeous hardwood forests and lovely views across mountain lakes. The DEC, local bicycling community, and other interested parties recognize the value that a sustainable mountain bike trail network would bring to the communities in and near to the MRPWF, and they are working together to bring a plan forward that respects the environment and other forest users.

## OPPORTUNITIES AND CONSTRAINTS

### Opportunities

- Many opportunities exist within this large tract of mountainous and scenic land for the development of trails suited to all level of mountain bikers. The geology of the area is interesting with many rock outcroppings and topography useful in the development of engaging mountain bike trails.
- The DEC and members of the communities within the MPRWF are supportive of the development of useful, sustainable trails to meet the varied needs of mountain bicyclists.
- If fully built-out, the proposed singletrack trail system would be approximately 100 miles in length. Such a system of mountain bike trails would provide for the needs of all levels of mountain bicyclists, be attractive to local riders, and work to help make the MRPWF a mountain biking destination. Additional miles of riding are available on the area's many useful gravel roads.
- The development of this extensive mountain bike trail network would open up opportunities for a wide variety of cycling outings. These would include



everything from very short, easy and interesting loops designed to engage newcomers to the sport, to very long, demanding bicycle excursions that are well suited to the most experienced and fit riders.

- Building a useful and sustainable mountain bike trail network that includes useful stacked-loop trail developments near to the towns of Inlet and Raquette Lake, and primarily accessed off of Highway 28, will provide visitors with good access to the desirable existing tourist amenities and service facilities available in these towns.

### Constraints

- Many of the existing trails on the MRPWF utilize former woods roads once used for logging purposes. While this extensive system of roads can help provide for the expansion of route opportunities to mountain bicyclists, in their current condition, these roads often fall short of providing experiences that are desirable to cyclists. Some roads and trails identified as useful to mountain biking make frequent crossings of wetlands or streams or are aligned along the bottoms of slopes where high ground water can cause problems. Where dryer, sloping terrain is available near to these low routes it is advisable to reroute the roads or trails onto these adjacent sideslopes.
- Some of the mountain biking opportunities found on the MRPWF were purpose built for snowmobile use. Shared use is desirable and some portions of the MRPWF snowmobile trail network are useful to mountain bikers. However, other portions of the snowmobile trails system that are identified by the DEC as potentially useful for mountain bike use are too steeply graded, pass through low lying areas, or contain obstacles and tread conditions that make them less desirable for most mountain bike rider skill levels. Adding some sections of new singletrack trail to select portions of the shared-use snowmobile trail system will allow cyclists to approach the routes at grades well suited for mountain bike use. Trail tread conditions that impact how mountain bikers can use these routes can be reworked into very desirable conditions for mountain bikers. These types of proposed changes would not impact how snowmobilers use or perceive the trails in the winter.
- Many of the existing trails on the MRPWF contain trail tread obstacles that are too demanding for beginner mountain bicyclists. Exposed tree roots and embedded rocks are trail tread conditions that are often considered desirable by more advanced riders, but they can cause problems for those who are new to the sport. A trail network should have some opportunities for beginners and less active people to safely and comfortably enter the sport of mountain biking. It is not appropriate to remove every obstacle from every trail, but having a small number of short, very-easy trails available to the public is very useful to entry-level riders. Such trails can lead to experiences where first time riders find that



they enjoy mountain biking, and feel safe progressing in the sport. Careful attention to trail construction and maintenance best practices will help insure that trail tread surfaces are appropriate for the level of trail rider anticipated.

- Constructing the majority of the proposed trail system will not incur special added costs, but some trail segments are designed through more demanding terrain where trail building could be more expensive. These include areas where the trails will pass near, or through rock outcroppings, pass over streams or smaller wetland areas, and cross steeper sideslopes. Building rolling contour trails on sideslopes with a full-bench trail tread is very desirable from a sustainability standpoint; as these types of trails drain well. Additionally, trails that turn and dip frequently through a landscape tend to slow traffic and encourage a more playful feel to the configuration of routes. These rolling contour trails are often considered most desirable by mountain bikers. Building this type of trail may prove more costly than some types of trails utilizing more direct alignment strategies, but cost-savings in maintenance and the overall usefulness and desirability of the resultant trail system will bring substantial lasting benefits.

## PROPOSED TRAILS

This large mountain landscape of the MRPWF offers a multitude of opportunities to create a useful, interesting and varied trail system targeted at mountain bike use. While developed with bicyclists in mind, the proposed conceptual trail design will also provide for outstanding trail experiences for other non-motorized trail users.

Trail Solutions consulted with area mountain bikers and DEC staff about existing use patterns and the history of trails use and trail development in the area. Field observations of the existing network of mountain bike trails, snowmobile trails, and roads on the forest included driving, walking, and mountain biking excursions on the routes. Guided by the MRPWF UMP, IMBA Trail Solutions staff studied existing trails and roads identified as being useful to mountain bikers. The existing routes were considered for their potential suitability for inclusion into the larger network of proposed mountain bike trails. The consultants walked other lands within the MRPWF that are not developed for trails, but which show promise as areas where new trail development may be useful.

The conceptual design presented in this report proposes the development of a large system of stacked loop natural surface trails. Stacked loop trail systems are comprised of several different loop trails knitted together to provide for a wide range of experiences and difficulties within a given area. Trail systems with loops are appealing because they offer variety, and stacked loop systems have the added benefit of making optimal use of available land. In addition to the development of a network of stacked loop trails, the report discusses the potential for other trail developments on the MRPWF that would improve the usefulness of existing trails and roads recognized as valuable, and open to

mountain biking by the MRPWF UMP.

## Objectives

The proposed trail corridors were identified with both attainability and sustainability in mind. The field design focused on the creation of a system of stacked loop trails with multiple access points, low barrier for entry, and multiple experience options.

The illustration is an example of a stacked loop trail system. In high-use areas the core trail leading from the trailhead or parking lot should be wide and smooth to appeal to a variety of uses and to allow visitors to travel side by side and socialize at the start of a ride. Because a core trail accesses the rest of the system, it receives the most use. The loops that branch from it may be longer, narrower, and more challenging as they get farther from the trailhead.

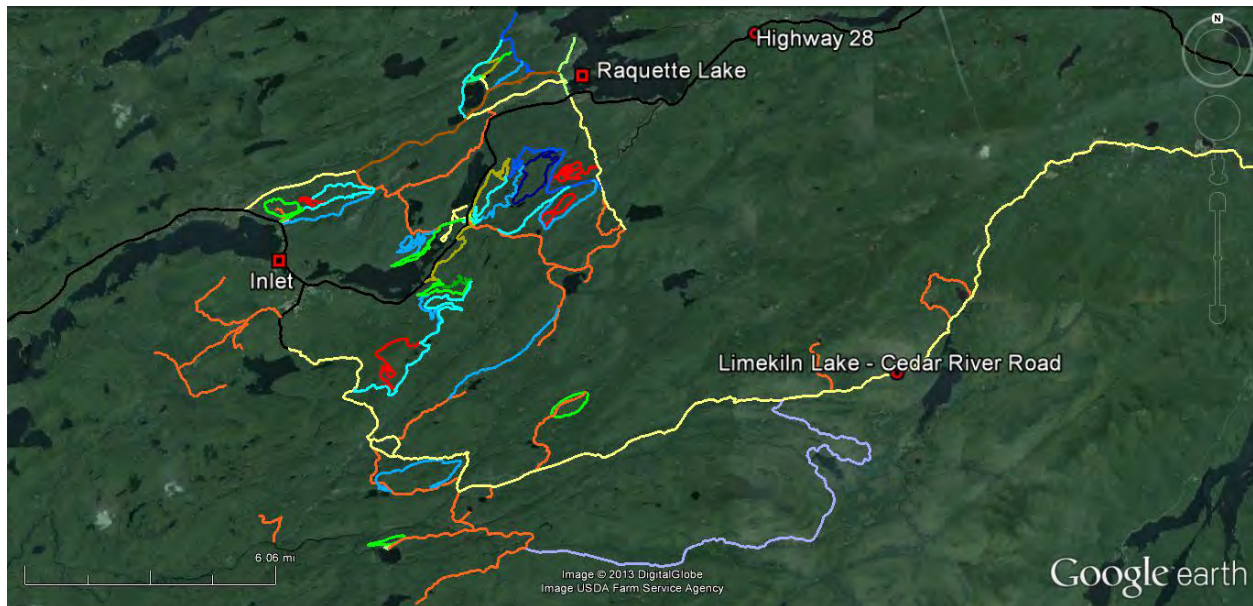
The conceptual design for mountain bike trail development on the MRPWF that has been developed by IMBA Trail Solutions is expansive. It proposes the development of a couple of smaller stacked loop trail systems near the towns of Raquette Lake and Inlet, and the development of a large stacked loop trail system centered at the Eighth Lake Campground. This report also makes recommendations for the improvement of some of the existing roads and trails recognized as valuable for mountain biking by the MRPWF UMP.

The proposed stacked loop trail developments are located near Highway 28 and the towns of Inlet and Raquette Lake. Many of the existing trails and roads identified as useful to mountain biking are more remote. Some of these existing, more distant road and trail experiences are suited to beginner and intermediate skill level riders, but many are long, demanding routes that will serve stronger, more adventurous cyclists

**Stacked Loop trail System**







This report recommends a phased approach to the development of the trail network, beginning with a couple of small demonstration projects that will serve to improve an existing trail to sustainable standards. Besides being useful to the improvement of mountain bicycling opportunities on the forest, the demonstration projects will also serve an educational role. These hands-on work and learning sessions will serve as a framework where area land managers and local trail advocates can learn more about sustainable trail construction practices and other key elements of managing mountain biking. The consultants recommend that professional trail builders, who have experience in teaching sustainable trail building techniques, lead the demonstration projects.

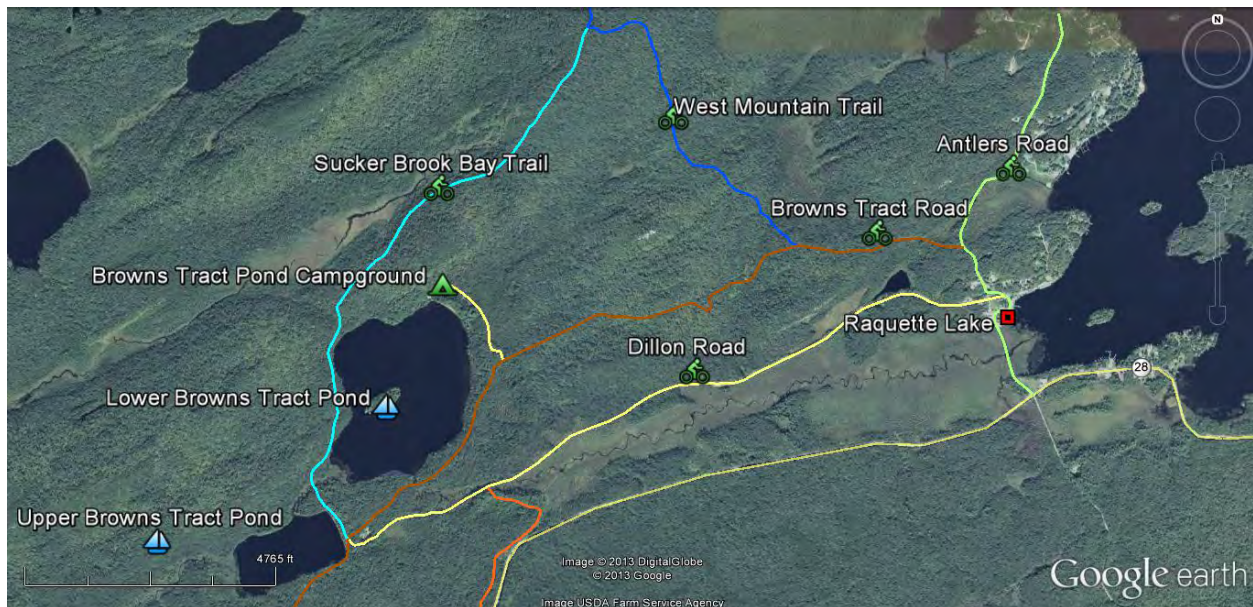
Each of the five proposed phases of mountain bike trail development recommended by this report can be used as stepping-stones to the next. Each proposed development phase aims to bring substantial improvements to the usefulness of the trails on the forest for mountain bicycling. Each phase of development will provide opportunities to see what works particularly well, and what construction techniques and management practices need to be adjusted to provide the best product for the mountain biking public. The various stages of trail development can be studied for their usefulness and adjustments can be made toward improving future implementations of the plan.

**Note regarding trail names used in this report:** The consultants have named the proposed new trails described in the conceptual design as a means of cataloging and reporting upon the alignments. More appropriate trail names should be selected for the proposed trails that have been identified in the report.

## PROPOSED TRAIL DESCRIPTIONS

### Phase I Proposed Trail Development - Trails in the vicinity of Browns Tract Pond State Campground

#### Existing Sucker Brook Bay - West Mountain Loop



*Sucker Brook Bay Trail – Light blue on map. Length utilized by existing loop – 2.4 miles*

*West Mountain Trail – Blue on map. Length utilized by existing loop – 1.4 miles*

*Browns Tract Road – Brown on map. Length utilized by existing loop - 0.7 miles*

*Antlers Road – Sage Green on map. Length utilized by existing loop - 0.3 miles*

*Dillon Road – Beige on map. Length utilized by existing loop - 2.7 miles*

*Total overall length of existing loop – 7.5 miles*

The consultants have selected the area around Browns Tract Pond State Campground as a place where trail construction and maintenance best practices can be demonstrated. The loop formed by using portions of the Sucker Brook Bay Trail, portions of the West Mountain Trail, and sections of Browns Tract, Antler, and Dillon Roads is one of the less demanding mountain bike excursions in the area. However,



this loop includes some tread conditions and trail alignments where improvements could be made to make the route more approachable for beginner mountain bikers. This section of the report describes the current conditions found along the loop and how improvements to increase the usefulness of the loop for beginner mountain bikers can be implemented.

A trail network should include adequate facilities for those who are new to the sport of mountain biking. It is often helpful to establish facilities useful to beginners as a first step in the mountain bike trail development process. IMBA Trail Solutions recommends that initial efforts at improving mountain bike riding opportunities in the MRPWF be directed at the establishment of a small, high-quality system of mainly beginner trail opportunities accessible from the Browns Tract Ponds State Campground. Of course, trails for more skilled, fit and intrepid riders must also be provided for within a successful trail network. Later sections of this report describe how the larger conceptual plan for mountain bike development provides for the substantial development of intermediate and advanced skill level trails elsewhere on the forest.

It is anticipated that a qualified trail design, trail construction or trail advocacy organization may have the opportunity to work with the DEC to bring trail construction and maintenance training and educational opportunities to the area. Such training will help the DEC and its partners hone their skills on how best to approach trail construction and maintenance for mountain bike use. The existing trails in the Brooks Tract Pond Area are accessible and of a scale and complexity that lend themselves to such training and educational exercises.

The Sucker Brook Bay Trail is a gently graded former woods road that has been converted into a trail suitable for hiking and biking. The high end of the trail is at the Upper Browns Tract Pond and the intersection of Browns Tract Road and Dillon Road. There is a gate across this southwest end of the Sucker Brook Bay Trail and room for approximately 4 vehicles to park.

From this small parking spot the Sucker Brook Bay Trail trends north to pass along the east shoreline of Upper Browns Tract Pond. The trail then passed along the west side of Lower Browns Tract Pond before arriving at an intersection where a side-trail leads to the Browns Tract Pond State Campground. Continuing to follow the Sucker Brook Bay Trail, now trending northwest, the trail eventually arrives at its intersection with the West Mountain Trail (near a bridge over Beaver Brook).

Some light trail work will be needed to bring the Sucker Brook Bay Trail into optimal shape for use by beginner mountain bikers. Some sections of trail include larger roots and other trail tread obstacles that should be removed or modified to make the going less problematic for those with less developed riding skills. Given the wide configuration presented by the Sucker Brook Bay Trail these obstacles are not much of a problem when they are visible to riders. However, fallen leaves often obscure the obstacles in



the fall, and wet weather can contribute to slippery tread conditions. For these reasons some light trail tread improvements are warranted on the Sucker Brook Bay Trail.

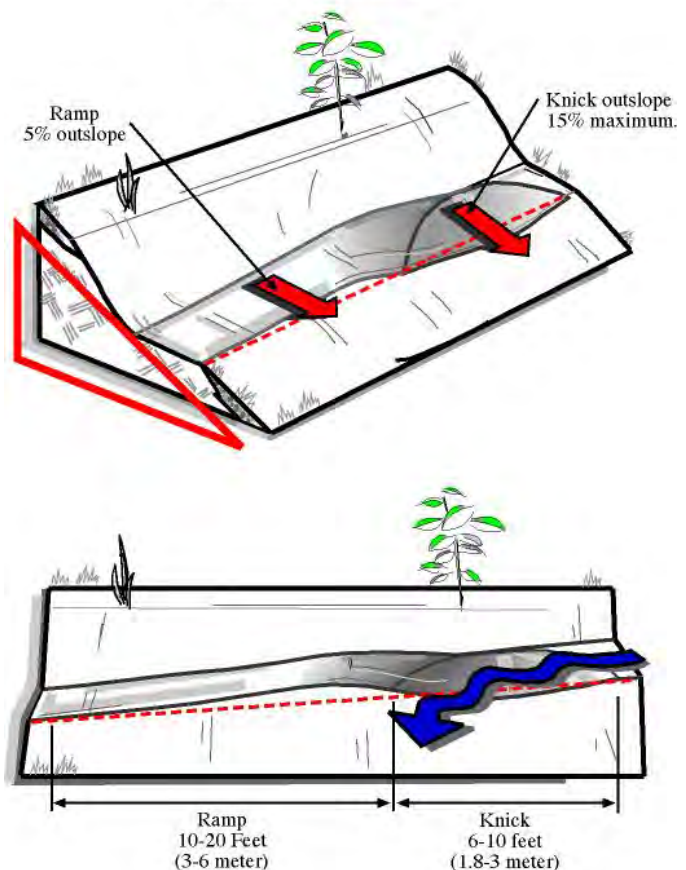
Remove roots and rocks that protrude more than 2 inches in height above the trail tread. The Sucker Brook Bay Trail includes some abrupt drainage structures running across the trail that can be problematic for less experienced riders. These drainage structures should be reworked to allow the drainage of the trail while providing for the smooth passage of cyclists over the structures. Rolling grade dips are a good choice for such conversions.

The intersection of Sucker Brook Bay Trail and the West Mountain Trail is poorly marked. This intersection should be improved with signs that mark the intersection well.

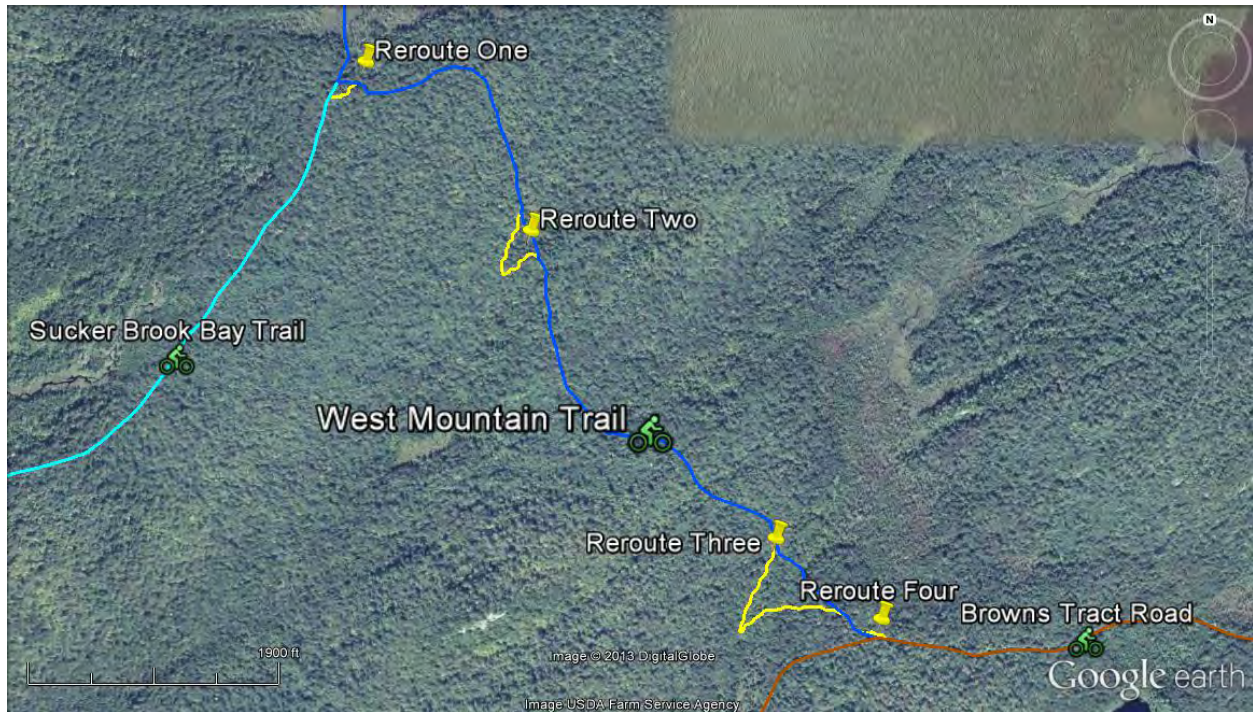
*(Note: Signage in the proposed trail network will be an important aspect of the development of a successful trail network on the MRPWF. The development of a complete sign plan for the proposed trail system is outside of the scope of this conceptual design, but a complete system of trail signs will need to be developed, implemented, and maintained as projects move forward.)*

From the intersection of Sucker Brook Bay Trail and West Mountain Trail, the first 200 feet of the West Mountain Trail are poorly sited through a low, wet area adjacent to Beaver Brook. It is recommended that this segment of the trail be rerouted to higher ground lying south of the existing alignment.

### Rolling Grade Dip







*(Note: The conceptual design described in this report recommends the consideration of four proposed reroute options for the West Mountain Trail. They are marked on the map in yellow and are labeled as Reroute One through Four.)*

Reroute One on the West Mountain Trail provides for a slightly higher alignment for this portion of the trail, but this area of the forest is still relatively low and poorly drained. Depending on the conditions present, it may be possible to use excavations of existing soils to raise the trail tread of Reroute One up to a useful and sustainable position. It is common for trail builders to use small, mechanized earth moving equipment in building such elevated treads.

It may prove useful to build portions of the reroute as sections of elevated wood boardwalk if high ground water is apparent at the time of field verification and final design of Reroute One. The construction of durable wooden, or wood and steel, boardwalk or bridges is often useful where water tables are particularly high. Care must be taken in the selection of materials and construction practices when building in wet environments. This standard of care should include, but not be limited to, the use of non-slip surface coating treatments for trail tread decking and the use of appropriate corrosive resistant materials for applications involving submerged portions of construction, or where structural members contact the ground.

West Mountain Trail, between Proposed Reroute One and Proposed Reroute Two, is graded in a fashion that is suitable for beginner use; it follows a rolling contour alignment with average trail grades of 5% or less with areas containing short steep



sections that contain grades of 10% or less. However, the surface of the trail tread includes conditions that are too challenging for beginner mountain bikers. Specifically, the trail tread is rugged with exposed roots and embedded rocks that protrude more than 2 inches above the surface of the trail. Some roots and exposed rocks found along the route are very large and would pose a challenge to more experienced mountain bikers. Removing roots and rocks that protrude more than 2 inches in height above the trail tread will make the trail much more approachable for less skilled, or less experienced riders. These improvements will be especially helpful in the fall when leaves tend to hide trail obstacles. Additionally, some minor adjustments to the alignment of the trail in select locations will help form a more flowing route; providing beginners with a trail that they can navigate more easily. These trail tread and alignment improvements should be carried out on all sections of the West Mountain Trail not identified as needing rerouting.

Between Proposed Reroute Two and Three the trail is graded well for beginner mountain biking, but at the area identified by Proposed Reroute Three the West Mountain Trail climbs and descends steeply through a wet drainage. Reroute Three would allow the trail to largely avoid wet conditions and provide for trail grades that would be appropriate for beginner mountain bikers. It is expected that a short bridging of the lowest, wettest section of this drainage will be necessary.

East of Proposed Reroute Three the existing West Mountain Trail is graded appropriately for beginners. At the intersection of the trail and Browns Tract Road the trail should be reworked into a grade that is easier to climb and descend. At present the trail meets the road in too steep of a configuration. This short reroute is labeled as Proposed Reroute Four on the map.

West Mountain Trail's southeast terminus is at its intersection with Browns Tract Road. One could turn right (west) onto Browns Tract Road to take the most direct way back to the start of the loop, but doing so involves some road climbing that is too steep for a beginner route. While turning left (east) off of the trail and onto Browns Tract Road makes for a slightly longer outing, doing so provides for the easiest completion of the loop.

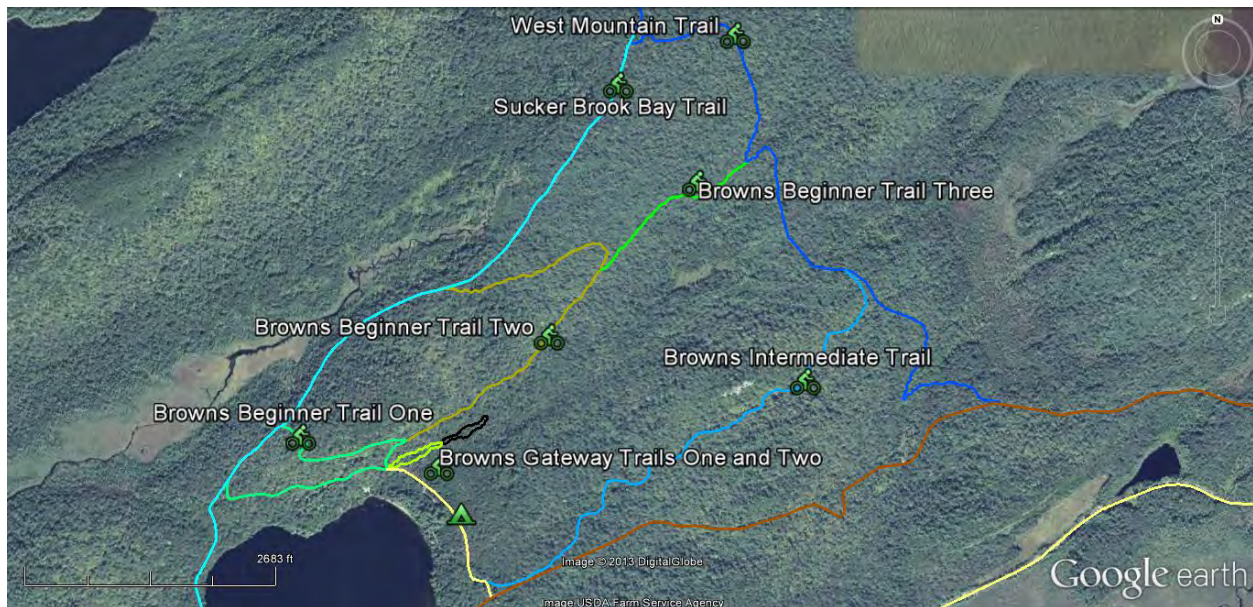
Browns Tract Road is a well-maintained gravel road that is graded gradually between the end of the trail and Antlers Road. Taking Browns Tract Road east for .7 miles brings one to the intersection with Antlers Road. Turning right (south) onto Antlers Road for a quick .3-mile roll brings one into the town of Raquette Lake and a poorly marked intersection at Dillon Road on the right (west). Dillon Road is graded nearly flat and is quite smooth. Dillon Road is an easy pedal for beginners wishing to complete the loop back to the Upper Brown Tract Pond and the high end of the Sucker Brook Bay Trail. The entire existing loop is approximately 7.5 miles long.

By making the trail improvements described in the preceding paragraphs the Sucker Brook Bay - West Mountain Loop would provide a route that is useful and fun for



beginners. While some beginner mountain bikers will have little difficulty competing a 7.5-mile loop, many of those who are new to the sport will find the route too long. Shorter beginner loop options in the vicinity of Browns Tract Pond Campground are proposed for implementation as next steps in the mountain bike trail development process. Proceeding with the trail development plan beyond the trail improvements proposed for the Sucker Brook Bay and West Mountain trails will bring several shorter, easier loops to the campground area. In the mean time, beginner riders who do not wish to tackle the 7.5-mile Sucker Brook Bay - West Mountain Loop will have the opportunity to use the improved trails for shorter out-and-back excursions.

The next recommended step for the first phase of mountain bike trails development on the MRPWF is the development of additional beginner trails, and one intermediate level trail, near the Browns Tract Pond Campground.



## Proposed Browns Gateway Trail One

*Lime green on map*

*Proposed Length: .30 miles*

Well-planned natural surface trail systems have trails appropriate for every skill level of rider. This includes trails for those who have never ridden a mountain bike, or for those who have never ridden a bike on native surface trails. Often referred to as gateway trails, these routes are easier than standard beginner trails, and they are very short.

The very easiest trails within a larger trail system should provide a platform where those with minimal bike handling skills can feel comfortable entering into the sport. These trails should be easy, but not boring. Gateway trails should provide for an engaging



experience by gently twisting and turning, and rising and falling over the landscape. A good trail network only needs a small amount of this type of trail, as riders new to the sport, and who have had a good introduction to it, will quickly seek out other nearby beginner trails.

Gateway Trails are very easy to negotiate with trail widths of 72 inches or more. Tread surfaces should be well-compacted native soils, hardened native soils, or surfaced routes. Overall average trail grades need to be kept gentle, generally less than 3%. A maximum trail grade of 5% may be achieved for short distances along a gateway route. If a gateway trail has a longer loop option associated with it, grades of 7% may be achieved for short distances along the longer loop option. Every effort should be made to make the route easy to travel along for new riders. The trail tread should contain no natural obstacles or technical trail features.

The proposed Browns Gateway Trail One is designed to be a nearly flat route with very gentle undulations and turns. About one-quarter mile in length, this would be an appropriate trail for those who are new to cycling.

### **Proposed Browns Gateway Trail Two**

*Black on map*

*Proposed Length: .30 miles*

Configured in a fashion similar to Browns Gateway Trail One, Gateway Trail Two would provide for a doubling in length of the gateway trail offerings accessed at the Browns Tract Pond Campground. The overall average grade of the trail should be kept below 3% with maximum grades of 7% for short stretches. While this longer option may include some grades steeper than Browns Gateway Trail One, it should remain a very easy route.

### **Proposed Browns Beginner Trail One**

*Aqua on map*

*Proposed Length: 1.0 mile*

This proposed trail would depart the Browns Tract Pond Campground near its northwest end. Browns Beginner Trail One would make a short circuit around the lower flanks of the mountain that is north of the lower pond and campground. This trail, and other beginner trails proposed as part of the trail system conceptual design, would have a trail width of 36 inches or more, provide a firm and stable tread surface, and have an overall average trail grade of 5% or less. Short stretches of the trail may have a maximum trail grade of 10%. Unavoidable obstacles 2 inches tall or less are acceptable for beginner trails.



All turns should be gently bermed, or banked with a flatter interior portion provided on the inside of each turn. This flatter area provides for the passage of riders and walkers traveling more slowly through the corners. All turns should be built to allow riders to pass-through, and exit each turn without the application of brakes. This can be accomplished by providing appropriate grades at the entrances and exits of each turn in combination with the well-executed design and construction of the turns themselves. All turn entrances on all proposed trails should be preceded by a grade reversal to allow for the draining of the trail prior to the turn. All turn exits on all proposed trails should be followed by a grade reversal to assist in the draining of the trail.

Sustainable mountain bike trails are designed to allow riders to apply their brakes as they set-up to enter a turn. Ideally, once a turn is entered there is no further need for the application of brakes. This allows riders to roll through turns fluidly. Switchbacks and other abrupt forms of turns can invite skidding prior to, and through, such turns. Well-designed and built berms are sustainable, and they are useful to all manner of trail users.

The consultants recommend that all turns within the MRPWF mountain bike trail network be built as appropriately sized and shaped berms or otherwise utilize modern turn design and construction best practices. All berms should include flatter interior platforms where riders or hikers traveling at slower speeds may negotiate the turn.

Sustainable mountain bike trails need to be well drained and they should provide an interesting experience to those who are following them. Both of these desirable trail characteristics can be enhanced through the use of rolling contour trail alignments.

Rolling contour trails are sited on terrain where sideslopes are present, and they roll up and down and back and forth over the landscape. Having the trail running across a hillside provides for lower adjacent terrain where water can be drained, and a trail on a hillside that rolls up and down effectively divides a watershed into many small, more manageable watersheds. Additionally, a trail with a rolling character provides places where the trail dips down and is well positioned for easy drainage.



Rolling Contour Trail Alignment

Rolling contour trails tend to provide a pleasant cycling experience. Flatter stretches of trail are made more interesting, and climbs are broken into shorter, manageable pulls (with little breaks tossed in; on the downhill sides of the rolling alignments). Riders descending on undulating, twisty routes enjoy the feelings such routes provide. All of the proposed trails presented in this conceptual design should be configured as rolling contour



alignments (unless otherwise noted).

Utilizing the Browns Beginner Trail One, and a short section of the Sucker Brook Bay Trail, will make for a one-mile beginner loop option out of Browns Tract Pond State Campground.

### **Proposed Browns Beginner Trail Two**

*Olive green on map*

*Proposed Length: 1.0 mile*

This beginner trail would depart from Beginner Trail One near the Browns Tract Pond Campground and head northeast to gradually climb the northeast flank of the low mountain found north of the campground. Gaining the ridge the trail bends back to the west to make a connection with the Sucker Brook Bay Trail. The overall average grade of the route will be 5% or less. Short segments of the route may have a maximum grade of 10%. The loop formed utilizing this trail, Sucker Brook Bay Trail, and Browns Beginner Trail One makes for a 1.8-mile outing.

### **Proposed Browns Beginner Trail Three**

*Bright green on map*

*Proposed Length: .40 miles*

Making a connection between Browns Beginner Trail Two and the West Mountain Trail, the Proposed Browns Beginner Trail Three helps to form a longer beginner loop option from the campground. Utilizing this beginner trail along with West Mountain Trail, Sucker Brook Bay Trail, and Browns Beginner Trails One and Two would provide for a 3-mile loop.

### **Proposed Browns Intermediate Trail**

*Bright blue on map*

*Proposed Length: 1.2 miles*

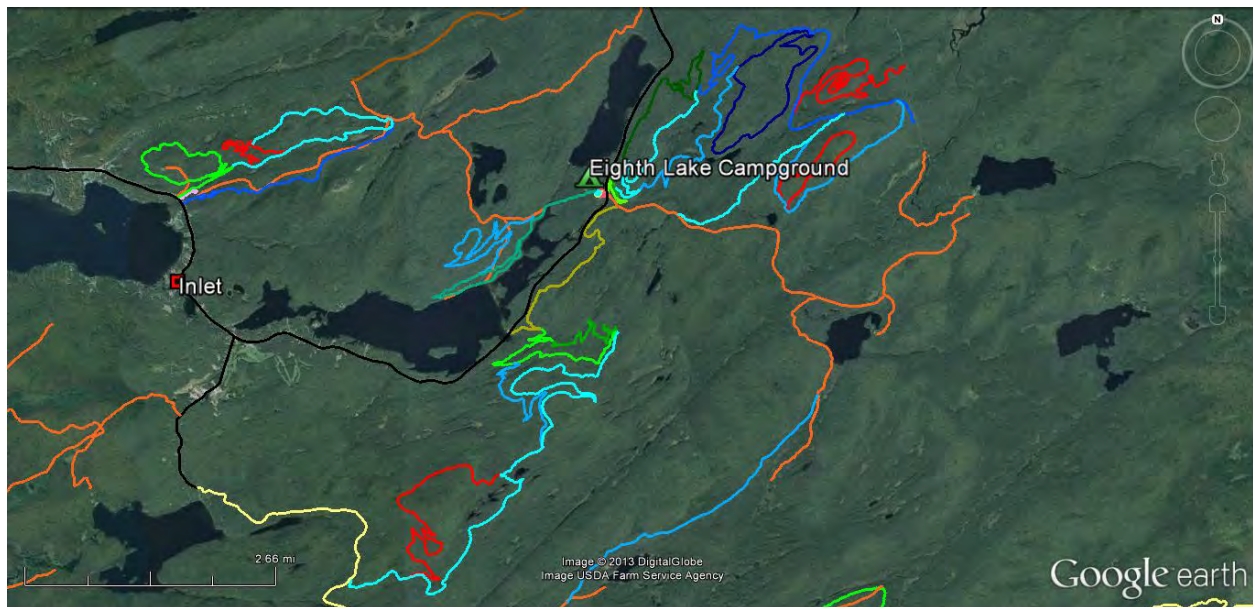
Splitting a ridge that lies northeast of the Browns Tract Pond State Campground, this proposed intermediate trail would make a direct connection between West Mountain Trail and the south end of the campground. The trail will take advantage of available terrain to provide for riding that is more challenging than that offered by the more gradually graded beginner trails in the area.

The Browns Intermediate Trail, and other proposed intermediate trails included in this conceptual trail plan design, should be built in a rolling contour configuration, have an average overall grade of 7% or less, and they may include short stretches of trail with maximum grades of 15% or greater. Intermediate trails should be narrower than beginner trails with a trail width of 24 inches or more. Trail tread surfaces should be mostly stable with some trail surface variability. Unavoidable trail obstacles such as

embedded rocks and roots protruding more than 5 inches above the trail tread should be removed on intermediate trails.

Biking on the Browns Intermediate Trail and utilizing the beginner trails and existing roads in the area will provide for a nice variety of ride lengths available to intermediate skill level cyclists. Using Browns Intermediate Trail and portions of West Mountain Trail, Sucker Brook Bay Trail, and Browns Beginner Trail One will deliver a 4.5-mile intermediate loop. By utilizing other trails and roads in the area the intermediate level options available out of Browns Tract Pond Campground increase sizably; a rider could easily piece together a 15-mile long intermediate level ride here.

## Phase II Proposed Trail Development – Proposed Eighth Lake Trail System



The next proposed phase of development following the construction of trails around Browns Tract Pond Campground would be the development of an extensive system of interconnected stacked loop trails centered roughly at Eighth Lake Campground. The section of land lying east of Eighth Lake and Highway 28 has many desirable attributes for the development of useful and enjoyable mountain bike trails. Lands south and west of Eighth Lake Campground would allow for an even greater expansion of stacked loop trail opportunities in the area. The potential for connectivity between the trails proposed for the more northern areas of the MRPWF and those further south and west are intriguing. There is the potential to create a very large and attractive system of mountain bike trails on this portion of the forest.

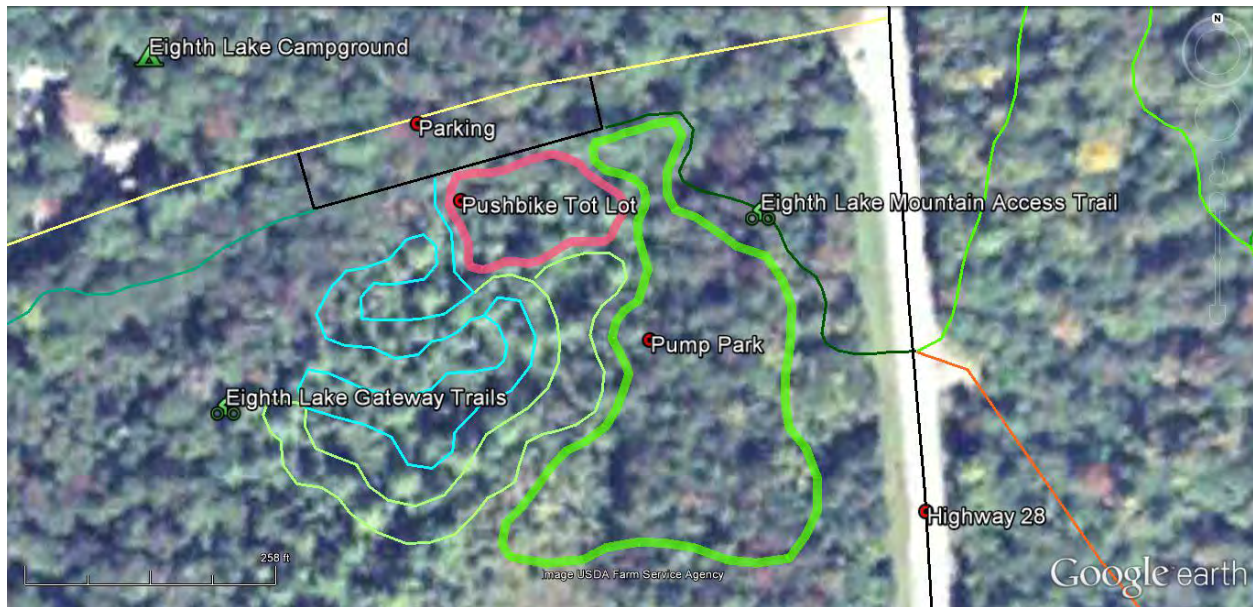
The area east of Eighth Lake contains topography with sideslopes useful in the development of rolling contour trails, and the region includes several distinct, individual



mountainous regions. There are several peaks and numerous valleys that can be utilized for the alignment of interesting and varied trail experiences. The proposed routes take advantage of the many climbs and descents presented in this landscape. The area also includes many nice rock outcroppings and other interesting geologic landforms that will be enjoyed as part of the trail riding experience.

The area does include some low lying, wet areas, but every effort has been made to avoid routing the proposed trails through any perennially wet, low forest areas. Almost any trail network will encounter areas where trails will need to briefly pass through marshy areas, cross brooks, and otherwise require specialized trail construction considerations. Preconstruction field verification and fine-tuning of the conceptual trail designs will help to minimize the need for specialized or costly trail construction practices.

Eighth Lake Campground would serve as the center of the network. Parking and restroom facilities at the campground should be developed as part of this phase of development.



## Proposed Eighth Lake Gateway Trails

*Light blue and light green on map*

*Proposed Length: 0.5 miles*

The proposed Eighth Lake Gateway Trails are two short gateway loops near the entrance to the Eighth Lake Campground. Positioned directly south of proposed parking for the trails near Eighth Lake Campground, these trails would be well-sited to provide direct access for kids, supervising parents, or others interesting in some very easy riding.





### **Proposed Eighth Lake Pushbike Tot Lot and Pump Park**

*Areas outlined in pink and green on map*

*Proposed Size: Approximately two acres*

The consultants recommend that consideration be given to the future development of a pushbike tot lot and a pump park near the bike parking area and gateway trail developments at the Eighth Lake Campground. If the DEC finds that they wish to include such facilities they may be developed along with other Phase II trail construction projects, or they may be developed during later construction phases.

The area outlined in dark pink on the map describes an area of approximately 2 acres that would prove useful for the development of a pushbike tot lot and a pump park.

Pump parks and pushbike tot lots are places where riders can improve their bike handling skills in a controlled setting. Ideally they are designed and built to accommodate a wide range of rider skill levels, but they must accommodate the lowest skill level of riders. It is important to meet the needs of this skill level, as these are the people who can benefit the most from a positive introduction to the sport. Additionally, providing appropriate facilities for the progression of skills is important in helping people learn to ride mountain bikes safely.

Bike tot lots are small areas set aside for very young children to ride pushbikes. Pushbikes (sometimes referred to as strider bikes) are little two-wheelers without pedals – kids ride them by pushing themselves around with their feet. By removing the complicating factor of having to learn to pedal for propulsion, strider bikes help kids to quickly learn to balance and steer. Pushbikes are a great way to introduce kids to bicycling, and they are a popular form of active play.

While pushbike tot lots are for very young children, pump parks are for older kids and adult riders. It is useful to have both a tot lot and a pump park available, as this allows all skill and experience levels to have appropriate skills development facilities available to them. The inclusion of an adjacent, but separate, area for tots provides the youngest of riders with a safe setting where they can develop skills without the heightened risk that may be associated with riding in areas frequented by more advanced level bikers.

Typically, a pump park is a relatively small, progressive bike play area where cyclists practice using up-and-down and back-and-forth body movements to propel their bicycles forward around a loop or series of short looped routes. Pump parks provide a setting in which cyclists can learn how dynamic body movement and increased bicycle and terrain awareness can improve their bike handling skills. As riders progress their skills they become more proficient at carving turns and propelling their bikes forward without making pedal-strokes. Cyclists learn to use their entire bodies to control their bikes more safely and efficiently, which ultimately provides them with more balance, control, power, and fun.

Young people especially appreciate pump parks, as they are places where kids can play outdoors while developing their own fun, creative sport. They are also a draw to all ages and skill levels of riders, and they are suitable for any size and style of bicycle. Pump parks can contribute to a healthy community environment by helping to bridge generation gaps and by providing an affordable, approachable pastime where families and friends can gather for vigorous fun.



Pump parks are great for building skills

Building skills at a pump park is not limited to beginner and intermediate cyclists. As riders improve, their body movements become more dynamic and they learn how to more effectively build momentum. As greater efficiencies are achieved riders find themselves able to carve turns at higher speeds and the track's rolling terrain soon presents these more skilled riders with options for smooth jumps and landings. Jumping, landing, and carving turns smoothly are skills that can increase confidence and help riders safely negotiate unexpected obstacles typical of more remote trail settings.

Pump park developments suit a wide range of bicycle skill levels. Beginners can ride around and get the feel for the track's rolling nature and banked turns, and more advanced cyclists can enjoy a more dynamic approach to the facility. Providing for this progression of skills is an important element in successful pump park developments. Providing progression allows everyone to feel comfortable, and everyone has a place to have fun and grow his or her skills.

Dirt pump parks require water for the construction and maintenance of their riding surfaces. The potential availability of water at the site will need to be addressed if the development of a pump park facility is deemed to warrant further consideration by the DEC.

### **Proposed Eighth Lake Mountain Access Trail**

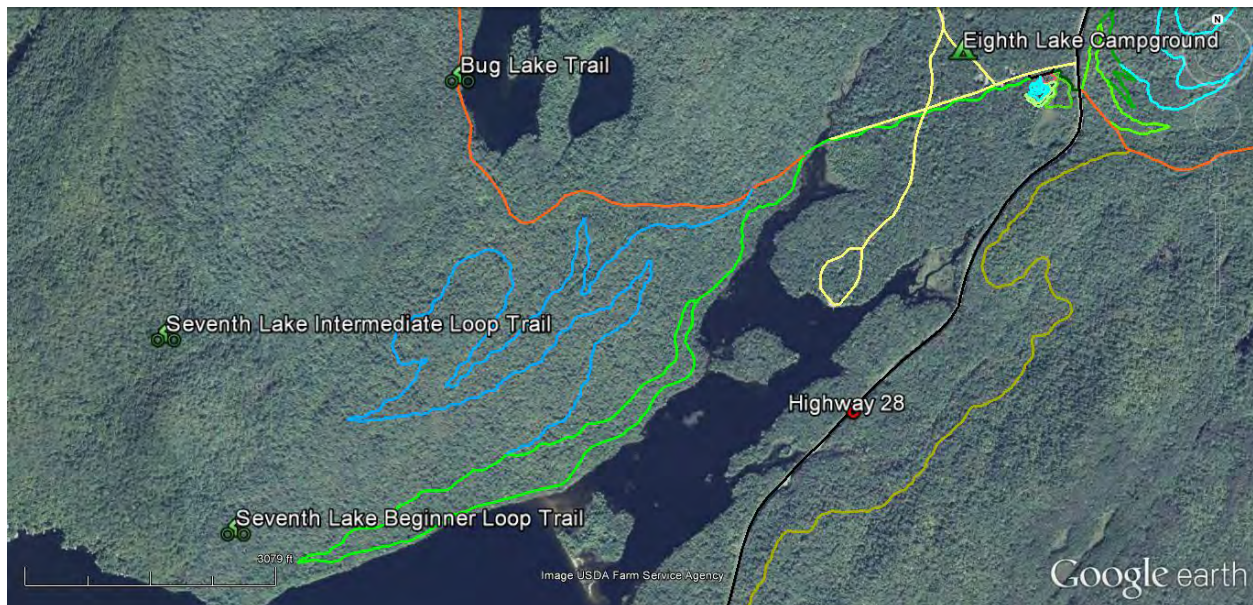
*Dark green on map*

*Proposed Length: 0.1 miles*

The proposed Eighth Lake Mountain Access Trail is the core trail leading from the mountain bike parking area at Eighth Lake Campground to a crossing of Highway 28. It should be wide and smooth to allow cyclists to travel side by side and socialize at the

start of a ride. The trail surface should be well-compacted native soil or hardened native soil and the trail tread should be 72 inches wide or more. The average trail grade will be 5% or less.

The highway crossing should be well signed for both cyclists and motorists, with bicycle traffic signaled to stop to allow motorized traffic the right-of-way. Use other cautionary signs alerting bikers and motorists of the crossing. A reduced highway speed limit in the vicinity of the crossing would be helpful in making this highway crossing safer.



## Proposed Seventh Lake Beginner Loop Trail

*Bright green on map*

*Proposed Length: 3.5 miles*

Starting at the proposed parking area for mountain bike use at the Eighth Lake Campground, this easy route would allow mountain bikers to travel east and west through the campground without the need to use vehicular roads. This trail will provide for a scenic beginner loop and supply important connectivity between the proposed trailhead facilities at Eighth Lake Campground and trails to the west.

Once on the west side of the lake the new beginner trail hugs the scenic shoreline to pass by a couple of log shelter lean-tos erected on the shores of Seventh Lake. After passing the second shelter the trail turns and climbs a little higher to make a return. The trail will intersect with the proposed Seventh Lake Intermediate Trail before completing the loop portion of the route and returning to the out-and-back portion of the Seventh Lake Beginner Loop Trail.

Riding this out-and-back and loop trail will involve 4.5 miles of easy, scenic cycling.

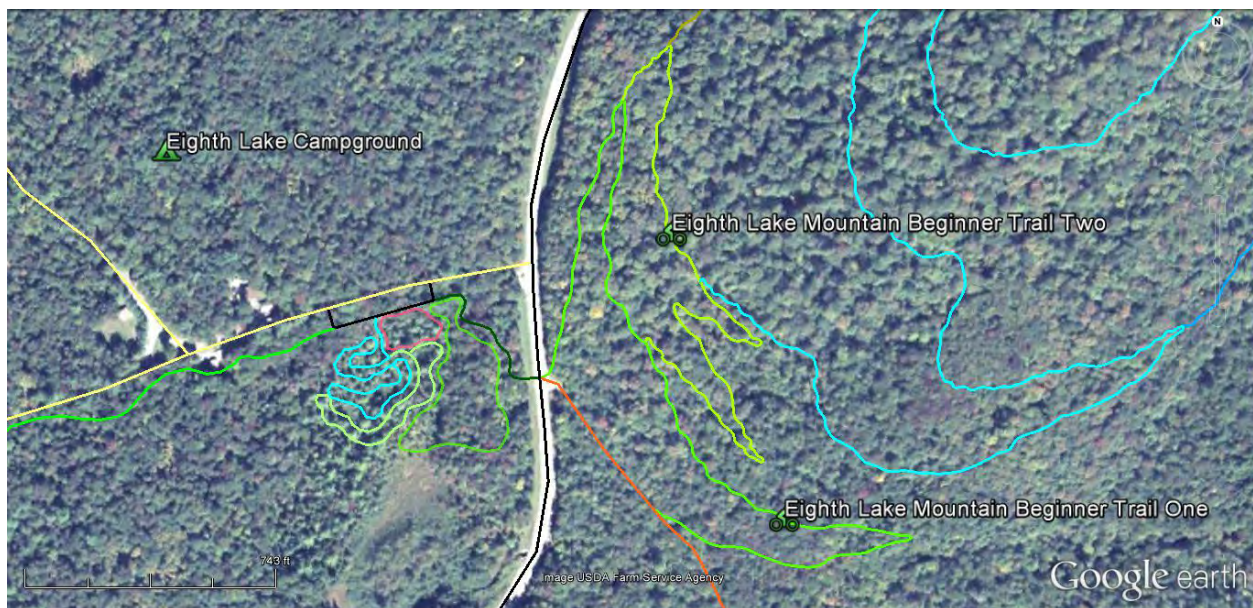


## Proposed Seventh Lake Intermediate Loop Trail

*Bright blue on map*

*Proposed Length: 4.0 miles*

This trail makes good use of available mountainous terrain above, and north of, Seventh Lake. It is a proposed intermediate trail that will utilize a sustainable section of the existing Seventh Lake Trail. This trail will provide for a couple of loop route options through this mountainous landscape. Combining this trail with available segments of the proposed Seventh Lake Beginner Loop Trail will provide for two intermediate loop options that are approximately 6-miles, and 8-miles long.



## Proposed Eighth Lake Mountain Beginner Trail One

*Light Green on map*

*Proposed Length: 0.8 miles*

The proposed Eighth Lake Mountain Beginner Trail One, and other beginner trails proposed as part of this trail system conceptual design, would have a trail width of 36 inches or more, provide a firm and stable tread surface, and have an overall average trail grade of 5% or less. Short stretches of the trail may have a maximum trail grade of 10%. Unavoidable obstacles 2 inches tall are acceptable.

This easy loop provides for an introductory outing for beginner mountain bikers. Other routes within the proposed Eighth Lake Trail System can be accessed from this beginner trail.

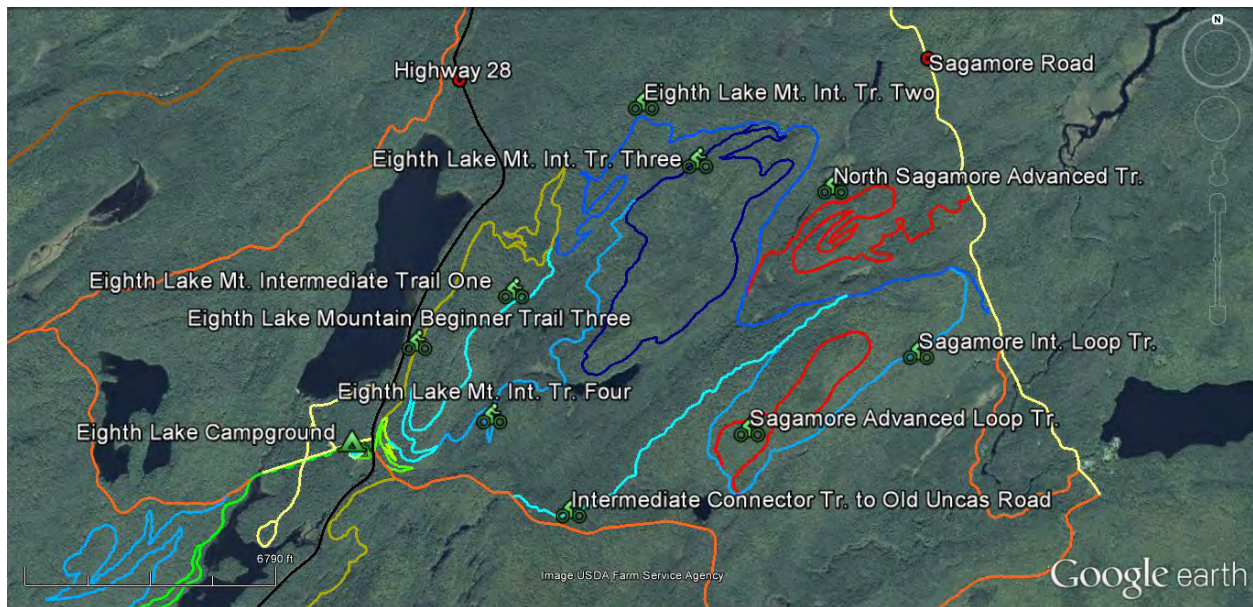


### Proposed Eighth Lake Mountain Beginner Trail Two

*Lime green on map*

*Proposed Length: 0.5 miles*

Positioned on the hillside above Eighth Lake Mountain Beginner Trail One, beginner trail two provides opportunities for beginners to add some length and variety to the easier outings found near the entrance to the campground. The trail also provides access to a longer, slightly more demanding beginner trail in the area, and it serves as an access route to nearby intermediate offerings.



### Proposed Eighth Lake Mountain Beginner Trail Three

*Olive green on map*

*Proposed Length: 3.2 miles*

The Eighth Lake Mountain Beginner Trail Three is comprised of a 1.4-mile long out-and-back leg and a 1.8-mile loop extending off of the out-and-back leg. Riding this beginner trail will involve 4.6 miles of pedaling. The loop end of the trail provides access to proposed intermediate skill level trails.

The out-and-back leg is more gently graded than the more distant loop portion of the route. The out-and-back leg rolls gently along with an overall average grade of 5% or less and short stretches with maximum grades of 7% or lower. The loop end of the trail climbs up and down and features an overall average grade of 7% or less with short stretches where the maximum grade briefly touches on 10% or less.





### **Proposed Eighth Lake Mountain Intermediate Trail One**

*Light blue on map*

*Proposed Length: 2.5 miles*

When developing a trail network it is important to consider that the intermediate skill level of mountain biker is by far the largest trail user demographic. Most riders are in the intermediate category of fitness and bike handling proficiency. Reflecting this fact, most of the trails in a proposed MRPWF mountain bike trail network should be appropriate for intermediate riders. Trails designed for intermediate riders are also useful to more advanced riders. Stronger riders are happy to travel along fun intermediate trails that bring them to more demanding trail options; in a sense, intermediate trails serve as warm-up trails to more demanding trails found further afield. Intermediate trails are also useful to beginners who are developing skills and fitness and looking for the next step in riding progression.

The proposed Eighth Lake Mountain Intermediate Trail One provides for the start of an extensive intermediate trail component for the area. This trail, and other intermediate trails within the network, should be built in a rolling contour configuration, have an overall average grade of 7% or less with short stretches of maximum grade of 15% or greater. Intermediate trails should be narrower than beginner trails with a trail width of 24 inches or more. Trail tread surfaces should be mostly stable with some trail surface variability. Unavoidable trail obstacles such as embedded rocks and roots protruding more than 5 inches above the trail tread should be removed.

Utilizing the proposed Eighth Lake Mountain Intermediate Trail One and the Eighth Lake Mountain Beginner Trails One, Two and Three will provide for an approximately 5-mile loop. Tying this intermediate trail in with other trails in the region will allow for a wide variety of intermediate level excursions.

### **Proposed Eighth Lake Mountain Intermediate Trail Two**

*Blue on map*

*Proposed Length: 5.7 miles*

This intermediate rolling contour trail helps to provide a singletrack trail connection between the Eighth Lake Campground and Sagamore Road. This trail will also be important in forming the legs of several other intermediate loop opportunities, and it makes useful connections to other proposed trails. Utilizing Eighth Lake Mountain Intermediate Trails One and Two as the main components of a ride from Eighth Lake to Sagamore Road will involve approximately 9 miles of pedaling.

The identified Sagamore Road Parking area near Camp Sagamore will likely be useful to some of the mountain bikers approaching the proposed Eighth Lake Mountain Intermediate Trail Two from the Sagamore Road side. It would be useful to explore





options for the development of additional parking and trailhead facilities near the intersection of this proposed trail and Sagamore Road.

### **Proposed Eighth Lake Mountain Intermediate Trail Three**

*Dark blue on map*

*Proposed Length: 4.8 miles*

Circumnavigating a significant secondary mountain and forming an important leg of another intermediate loop option, this route helps to expand the intermediate skill level trail opportunities available here. This route takes advantage of a particularly beautiful section of the forest as it passes through areas with nice rock outcroppings and dramatic landforms.

### **Proposed Eighth Lake Mountain Intermediate Trail Four**

*Bright blue on map*

*Proposed Length: 2.6 miles*

Also passing through a lovely portion of the forest, Eighth Lake Mountain Intermediate Trail Four is another leg of the extensive intermediate skill level trails proposed for development in the area. This one passes through areas of very large exposed bands of rock that sometimes form high walls and other interesting terrain.

The north end of the trail is at its intersection with the Intermediate Trail Three. From this intersection the Eighth Lake Mountain Intermediate Trail Four is designed to follow the contour of the land rather closely for about a mile. Then, after passing a small waterfall, the trail would begin a moderate descent to meet up with the Eighth Lake Mountain Intermediate Trail One near the Eighth Lake Campground.

The intermediate loop formed by the use of Eighth Lake Mountain Intermediate Trails One through Four would be approximately 10 miles in length.

### **Proposed Intermediate Connector Trail to Old Uncas Road**

*Light blue on map*

*Proposed Length: 2.3 miles*

Riders utilizing this trail, and a portion of the Eighth Lake Mountain Intermediate Trail Two will be able to take an alternate singletrack trail between the Eighth Lake Campground and Sagamore Road. Additionally, this connector opens up significant additional loop options for intermediate and advanced skill level mountain bikers.

The usefulness of this trail will be greatly enhanced by improvements to the existing Old Uncas Road/Seventh-Eighth Lake Trail North Section. The Seventh-Eighth Lake Trail North Section provides a connection between Highway 28 and this proposed trail. If plans proceed toward the development of mountain bike trails in this part of the forest



the Old Uncas Road/Seventh-Eighth Lake Trail North Section should be brought up to standards suitable for intermediate skill level bicyclists use.

### **Proposed Sagamore Intermediate Loop Trail**

*Bright blue on map*

*Proposed Length: 2.9 miles*

This trail, in conjunction with a couple of short sections of nearby intermediate skill level trails, forms a loop around the low flanks of a mountain that lies about a mile west of Sagamore Lake. The shortest, most direct approach to this trail will be from Sagamore Road. Stronger riders will be able to approach the trail from the west on the other trails and routes originating at the Eighth Lake Campground.

### **Proposed Sagamore Advanced Loop Trail**

*Red on map*

*Proposed Length: 2.5 miles*

Designed to be very difficult, the Sagamore Advanced Loop will provide a demanding option for strong cyclists. Like the Sagamore Intermediate Loop Trail, this advanced loop makes a circuit around the mountain lying west of Sagamore Lake, however, this route takes a higher line around the promontory.

The route is steeply graded with a narrower, technically demanding tread. The trail tread width should be 12 inches or less with a widely variable tread surface. The trail may include unavoidable trail obstacles 8 inches tall or less and areas of loose rock. The overall average trail grade will be 15% or less with a maximum trail grade of 15% or greater. Short sections of the trail may exceed the suggested criteria.

Turns on all advanced trails should be appropriately sized and shaped berms or otherwise utilize modern turn design and construction best practices. All berms should include flatter interior platforms where riders or hikers traveling at slower speeds may negotiate the turn.

### **Proposed North Sagamore Advanced Trail**

*Red on map*

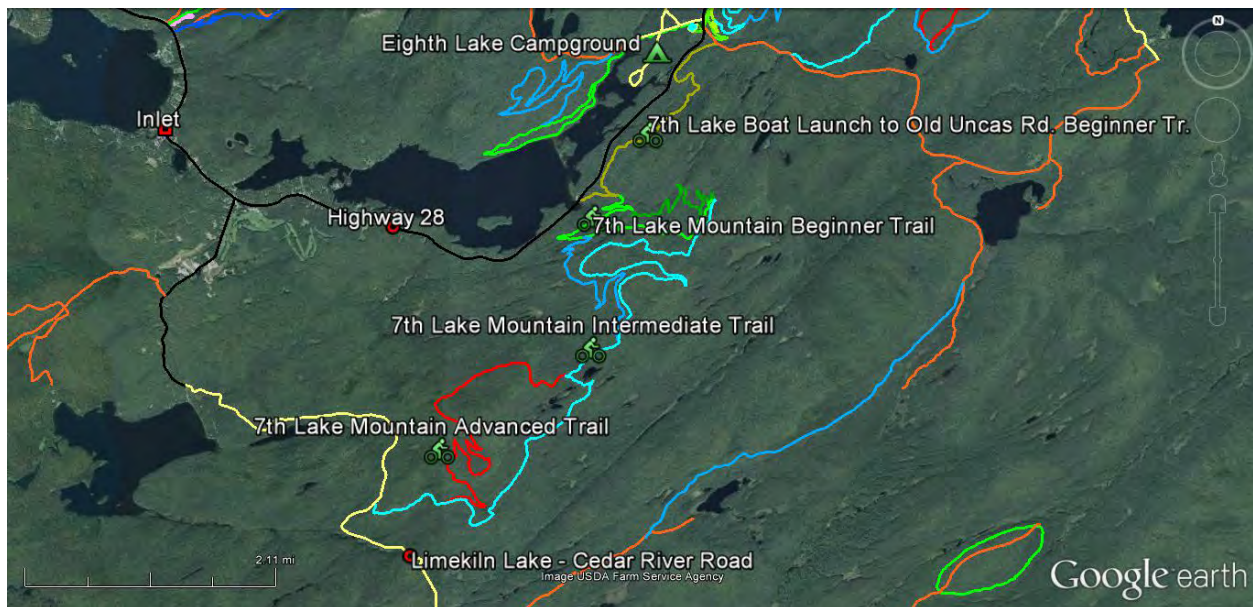
*Proposed Length: 4.5 miles*

This proposed very difficult mountain bike route is located west of Sagamore Road on a mountain that sits between Raquette Lake Reservoir to the north and the unnamed mountain to the south which is host to some of this area's intermediate and advanced trail offerings.

The west end of this trail intersects with the Eighth Lake Mountain Intermediate Trail Two. At its east end the trail intersects with Sagamore Road. Cyclists approaching from Sagamore Road will have direct access to a demanding stretch of trail. Utilizing this

trail, Eighth Lake Intermediate Trail Two and Sagamore Road will provide for a demanding 8-mile loop. Riders wishing to extend their advanced outing can tie this trail into the many intermediate trails in the area, or link in to the Sagamore Advanced Loop Trail (on the mountain to the south of this trail) for a demanding ride that is about 14 miles long.

## Phase III Proposed Trail Development – Proposed Seventh Lake Mountain Trail System



Phase III of the proposed mountain bike trail network develops beginner, intermediate, and advanced level trail opportunities in the area south and southeast of Seventh Lake. One aspect of this proposed phase of development will be the connectivity provided between the Limekiln Lake – Cedar River Road and the trails in the vicinities of Seventh and Eighth Lakes. The majority of the trails called for here by the conceptual design are to be built as traditional, rolling contour, native surface trails, designed for two-way traffic.

In addition to proposing the development of more traditional cross-country style, rolling contour trails, this phase of the proposed development plan provides the DEC with the option to develop one beginner gravity trail, and one intermediate gravity trail on this portion of the forest.

Gravity trails, or flow trails, as they are often referred to, are one-way, downhill mountain bike trails that provide riders with trail features and terrain that help cyclists build cornering and handling skills. Riders pedal uphill on traditional trails to gain the intersections where flow trail entrances are provided. Here, riders have the option to



stay on a rolling contour trail, or drop onto the downhill only flow trail. As riders progress in building their skills on gravity trails they may find it desirable to begin learning to jump the sections of the trail that offer more pronounced rolling, sculpted terrain. These types of trails are designed to provide for skills progression, and they are incredibly fun and popular.

In places where flow trails are less typical it is especially important to design the earliest local iterations of them to accommodate lower participant skill levels. As these proposed gravity trails would be the first such trails in the region the routes will need to be designed to allow lower skill level mountain bikers the opportunity to roll through all of the features found along the trail. When properly built, maintained, and signed, such trails area approachable and safe.



Gravity or Flow Trail

The scope of this conceptual design report does not allow for a complete discussion of the design and construction requirements of the gravity trails proposed in this report. The trail descriptions for the two flow trails proposed as part of this conceptual design include additional general information about considerations for the configuration of flow trails and how their introduction into the MRPWF mountain bike trails system might be approached.

### **Proposed Seventh Lake Boat Launch to Old Uncas Road Beginner Trail**

*Olive green on map*

*Proposed Length: 2.6 miles*

The existing parking and trailhead facilities at the Seventh Lake Boat Launch provide a useful place to access this portion of the proposed trail system. The Seventh Lake Boat Launch to Old Uncas Road Beginner Trail would provide for connectivity between the Seventh Lake Mountain trails and the Eighth Lake trails. Designed and built for beginners, this route would be useful for all manner of cyclists looking to make the connection between the various trail offerings in the area.

### **Proposed Seventh Lake Mountain Beginner Trail**

*Bright green on map*

*Proposed Length: 3.0 miles*

This proposed easy trail climbs the lower flanks of the mountains and drainages that lie east of the boat launch. This route climbs to an intersection of trails where riders can turn around and return the way they came down the singletrack rolling contour trail, continue climbing on an intermediate skill level trail, or drop onto the Seventh Lake Mountain Beginner Flow Trail.

## Proposed Seventh Lake Mountain Intermediate Trail

*Bright blue on map*

*Proposed Length: 7.5 miles*

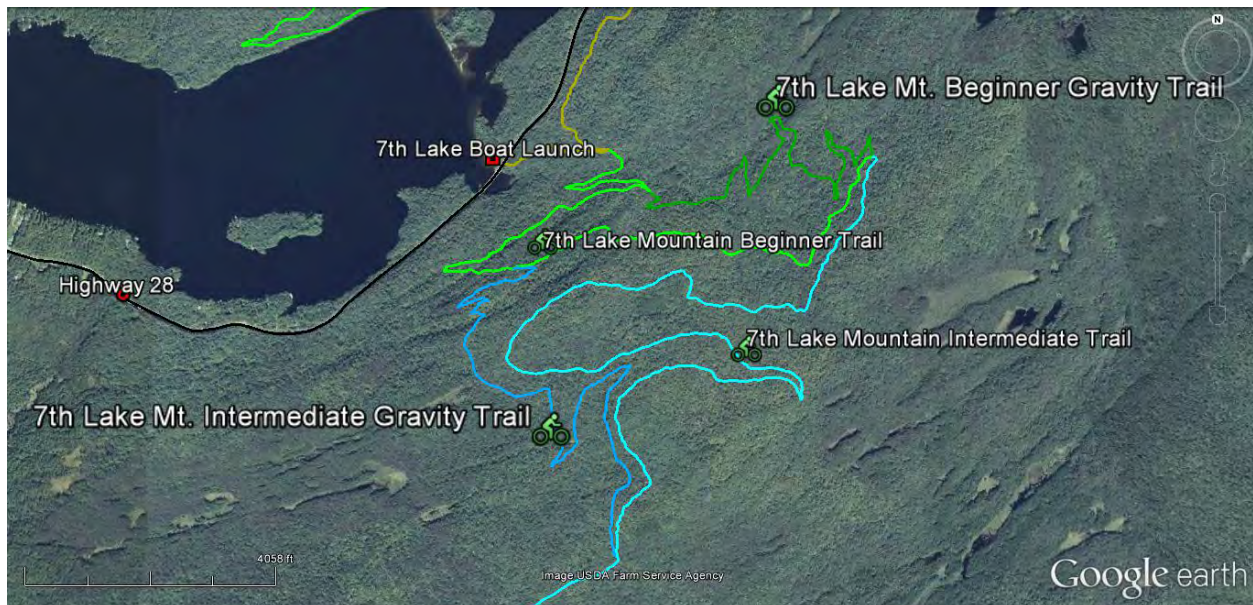
Climbing from a low point at its intersection with the Seventh Lake Mountain Beginner Trail, this intermediate trail climbs to provide access to the Seventh Lake Mountain Intermediate Flow Trail and the Seventh Lake Mountain Advanced Trail. This route is also important for the connectivity it helps provide between the more northern portions of the trail system and areas of the network that are further south. This trail forms the southern leg of singletrack running between Sagamore Road (north end) and the Limekiln Lake – Cedar River Road (south end).

## Proposed Seventh Lake Mountain Advanced Trail

*Red on map*

*Proposed Length: 4.5 miles*

This trail on Seventh Lake Mountain, and a portion of the Seventh Lake Mountain Intermediate Trail, form a demanding loop around the top of the peak. The alignment will be graded more steeply and include a narrower, more technically demanding trail tread. This trail will provide an exciting, demanding experience fit for skilled riders.





### **Proposed Seventh Lake Mountain Beginner Gravity Trail**

*Dark green on map*

*Proposed Length: 2.5 miles*

The start of the proposed downhill only beginner flow trail will be gained by climbing on the proposed Seventh Mountain Beginner Trail. The overall average grade of the beginner flow trail should be in the range of 5% or less. Beginner flow trails should be approachable by beginner mountain bikers who wish to ride the trail in a more traditional fashion. That is to say, beginners should not encounter trail features that require them to jump their bikes or otherwise take on more of a challenge than they are interested in pursuing.

Flow trails are designed to allow for the progression of skills, including learning to jump one's bike, if that is desired, but beginner flow trails also need to be roll-able. A beginner mountain biker should be able to ride his or her bike over the entire length of the route without the need to jump or navigate technical trail features. Where technical trail features are encountered they should be of a size and character that allow anyone to roll over them at a comfortable pace. The rolling character of the trail should not force riders into the air. As riders develop their skills on this type of a trail they may wish to approach the trail's rolling terrain in a fashion that does provide them with opportunities to jump their bikes, but any pass on the trail should allow for the inspection of the route and the rolling of all trail features.

The proposed flow trails should be wide and provide for adequate landing and fall zones. Generally speaking, a landing zone is a portion of a trail used for landing one's bike after successfully completing a jump. Landing zones should be strategically placed and built in a fashion that helps all riders proceed safely down the trail. The area of trail below any landing area should be so aligned as to allow riders to roll out of the landing area without the need for heavy braking.

A fall zone is a clear area adjacent to a technical trail feature, or adjacent to a landing zone. Fall zones provide a clear area for riders who fail to negotiate an obstacle or jump. On gravity trails fall zones should be located adjacent to landing zones, at the bottom of descents, on the outside of corners, on either side of the trail, and around obstacles.

All of the turns should be bermed, or banked to optimize the flowing character of the trails. Riders will have the opportunity to ride slowly around the flatter interior portions of these turns. As riders become more competent and comfortable they will likely find themselves riding faster and higher on the banked, or bermed, portions of these turns.

All bermed turns should be built to allow riders to pass-through, and exit each turn without the application of brakes. This can be accomplished by providing appropriate grades at the entrances and exits of each turn in combination with the well-executed design and construction of the turns themselves. Sustainable flow trails are designed to





allow riders to apply their brakes as they set-up to enter the more circuitous sections of the route. Ideally, once a turn is entered there is no further need for the application of brakes. This allows riders to roll through the turns fluidly.

Berm turns should be designed and built to accommodate both slow and fast riding. Riders traveling slowly down a flow trail should have the opportunity to ride on the relatively flat (slightly-insloped) inside portion of the berm turn, while the outside banked portion of each berm turn should allow riders traveling at a faster pace to carve a higher line through the corner.

Technical trail features on the Seventh Lake Mountain Beginner Gravity Trail should be sized appropriately for beginners. A variety of technical trail features should be employed along the route including single rollers, double rollers, and smaller tabletop and step-up jump options. Other trail features that do not include high consequences for failure can also be considered for inclusion into the trails. Neither of the proposed gravity trails should include gap jumps nor other trail features that might involve high consequences were riders to fail to negotiate them successfully.

### **Proposed Seventh Lake Mountain Intermediate Gravity Trail**

*Bright blue on map*

*Proposed Length: 2.5 miles*

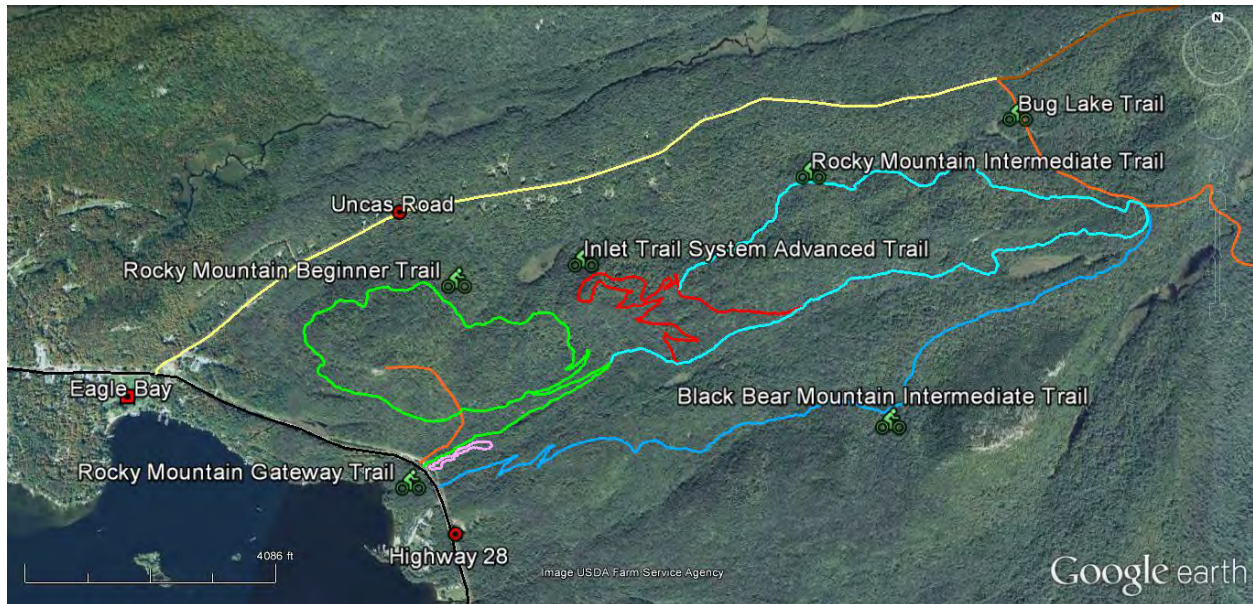
The start of the proposed downhill only intermediate gravity trail will be gained by climbing on the proposed Seventh Mountain Intermediate Trail. The overall average grade of the intermediate flow trail should be in the range of 7% or less. All trail features should be rollable.

Because providing for progression is an important part of mountain bike optimized trail developments, this intermediate trail should allow for riders to grow their skills. The trail should be wider than the proposed beginner trail, and landing and fall zones should be large and provide for the needs of riders attempting more difficult technical trail features.

All of the turns should be bermed, or banked to optimize the flowing character of the trails. All bermed turns should be built to allow riders to pass-through, and exit each turn without the application of brakes. Berm turns should be designed and built to accommodate both slow and fast riding.

Technical trail features on the Seventh Lake Mountain Intermediate Gravity Trail should be sized appropriately for intermediate skill level riders. A variety of technical trail features should be employed along the route including single rollers, double rollers, and table-top and step-up jump options. Other trail features that do not include high consequences for failure can also be considered for inclusion into the trail. Neither of the proposed gravity trails should include gap jumps nor other trail features that might involve high consequences were riders to fail to negotiate them successfully.

## Phase IV Proposed Trail Development – Proposed Inlet Area Trail System



Phase IV of the proposed network of mountain bike trails develops a small system of beginner, intermediate, and advanced trails near to the towns of Inlet and Eagle Bay. Successful trail-based recreation infrastructures include trails that are easily reached on foot or bike from people's homes and places of business. Improving existing trails, and developing new singletrack trail opportunities near Rocky Mountain and Black Bear Mountain would be a boon to local and visiting trail enthusiasts.

### Proposed Rocky Mountain Gateway Trail

*Pink on map*

*Proposed Length: 0.5 miles*

The proposed Rocky Mountain Gateway Trail is a half-mile long trail forming two short loops that would be adjacent to the Black Bear Mountain/Rocky Mountain Trailhead. These trails would provide a very low barrier to entry for inexperienced cyclists and youngsters new to the sport. This trail should not intersect, or lead to, other trails. It should stand-alone and provide a setting where those who are new to mountain biking can get a feel for trail riding in a safe and comfortable setting.



## **Proposed Rocky Mountain Beginner Trail**

*Bright green on map*

*Proposed Length: 3.5 miles*

Accessed from the Black Bear Mountain/Rocky Mountain Trailhead, this proposed beginner trail would provide for an easy, rolling contour route around the lower flanks of Rocky Mountain. Having an estimated length of 3.5 miles, this trail will provide a nice outing for people looking for a quick ride or a pleasant approachable hike. The lowest leg of the trail would provide access to the west end of the proposed Rocky Mountain Intermediate Trail.

## **Proposed Rocky Mountain Intermediate Trail**

*Light blue on map*

*Proposed Length: 3.8 miles*

This proposed intermediate trail is approximately 3.8 miles long and would be accessed from the west by way of the proposed Rocky Mountain Beginner Trail, and from the east by way of the Old Uncas Road/Bug Lake Trail.

A trip utilizing this trail, and short segments of the proposed Rocky Mountain Beginner and Advanced Trails, would form a ride that is about 5 miles in length. Depending on the direction of travel, the loop portion of this route will be either intermediate, or advanced in difficulty. In a counter-clockwise direction riders would descend for about one-half mile on the portion of the loop utilizing the advanced trail. Such a descent will be approachable by many intermediate riders. Those cyclists seeking a harder option could ride the loop portion in a clockwise fashion. This will provide them with a stiff .5-mile climb on an otherwise intermediate difficulty route.

## **Proposed Black Bear Mountain Intermediate Trail**

*Blue on map*

*Proposed length: 3.1 miles*

The existing Black Bear Mountain Trail is poorly sited through a number of low, perennially wet areas. Way finding along the route is difficult where the trail becomes faint from lack of use and maintenance. The average intermediate cyclist would find the existing route to be too demanding. If it weren't for these shortcomings the trail would be useful for the connection it would provide between the Black Bear Mountain/Rocky Mountain parking and trailhead area and the Old Uncas Road/Bug Lake Trail. The rerouting of the trail into an improved alignment that avoids wet areas and that helps





make the trail more approachable by intermediate skill-level cyclists would significantly increase the usefulness of this trail.

The proposed conceptual design for this reroute provides that access from the west will continue to be from the Black Bear Mountain/Rocky Mountain parking area and trailhead. Soon after departing the parking area, the trail would be rerouted onto the adjacent hillside found to the south of the current alignment. Currently, this section of the trail runs along the base of a hillside where high groundwater is often a problem. Rerouting the trail onto the hillside would put it in a position where it could be drained. The proposed rerouting would utilize a series of four berm turns allowing the trail to gain elevation at grades appropriate for intermediate skill levels.

Using this proposed trail and the lower sections of the Rocky Mountain Beginner and Intermediate Trails would produce a loop that is roughly 6 miles long. With the inclusion of this intermediate trail into the mix of offerings available at the proposed Inlet Area Trail System a 10 to 15 mile intermediate skill level mountain bike ride would be conceivable here.

### **Proposed Inlet Trail System Advanced Trail**

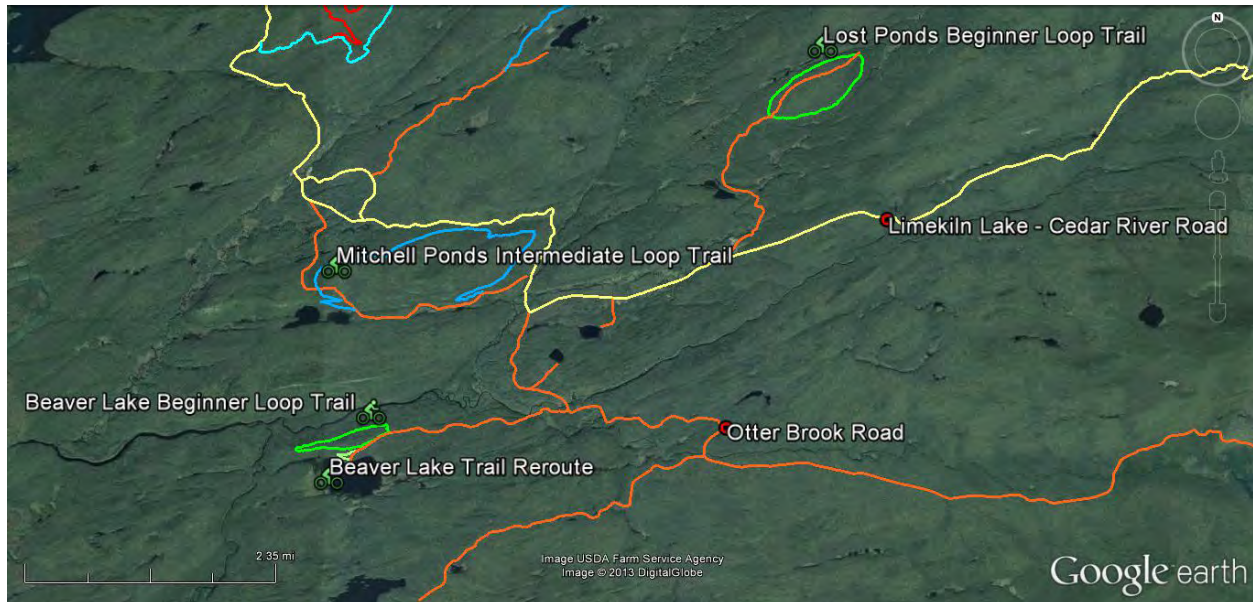
*Red on map*

*Proposed length: 2.1 miles*

The existing Rocky Mountain Trail is a steep trail that is mainly useful to hikers. To the east of Rocky Mountain is another promontory that would provide a useful setting where a demanding mountain bike route could be developed.

The proposed Inlet Trail System Advanced Trail is intended to be a steep, technically demanding route that can be accessed off of the Rocky Mountain Intermediate Trail. A ride starting from the Black Bear Mountain/Smokey Mountain parking area that would utilize the proposed advanced trail would produce an outing that is about 4 miles long. Incorporating the proposed advanced trail into a ride that includes some of the additional trails proposed in the plan would help produce demanding rides that are upwards of 15 miles long.

## Phase V Proposed Trail Development – More-distant Proposed Trail Developments



This portion of the report describes Phase V proposed trail developments. These proposed trails are more remote than the previously described trail development concepts. They complement existing mountain bike riding opportunities in this more distant part of the forest. The development of a few less taxing routes here should help draw a more diverse mix of rider skill levels to this part of the forest. Families might find the area appealing for camping and riding options. The stronger members of riding groups might choose to take on some of the long, demanding riding available in the area, while the less strong of their party could partake in some of the beginner and intermediate offerings planned for phase V.

### Proposed Lost Ponds Beginner Loop Trail

*Bright green on map*

*Proposed length: 2.5 miles*

The existing Lost Ponds Road is a useful route for mountain biking, but the addition of a beginner loop around the low mountain lying at the northeast end of the road would improve the riding experience for this area. The proposed route would cover the low flanks of the low peak that sits to the northeast of Lost Ponds. This area will make a nice setting for a short loop trail.



The existing Lost Ponds Road will provide access to the proposed loop trail. In a couple of locations the alignment of the road may prove to be a little steep for beginner use. If, after consideration by the DEC, the proposed Lost Ponds Loop Trail is to be developed, the DEC should further examine the alignment and condition of the road. If sections of the road are indeed too steep for beginners those segments of road should be rerouted into beginner friendly configurations. Any reroutes should be built as sections of rolling contour singletrack trail.

### **Proposed Beaver Lake Trail Reroute**

*Sage green on map*

*Proposed length: 0.3 miles*

Road-like Beaver Lake Trail is a good existing beginner ride on the MRPWF. It runs west to east between Beaver Lake and a small parking/trailhead area at a bridge over Otter Brook. The trail is an old roadbed that is graded gradually. The grade steepens greatly as the trail gets close to the lake. The trail is so steep as to make it difficult for even advanced mountain bikers to manage it on the return climb. The tread of the trail changes where it gets steep. The majority of the trail surface is relatively smooth with obstacles in the general range of 2 inches tall or less. Where the trail gets steep the tread includes much larger obstacles and larger loose rock.

A reroute of the Beaver Lake Trail at its west, steep end is recommended. A section of singletrack rolling contour trail can be run out from the existing road at a point before the route begins to descend too steeply for beginner use. A berm turn can be established on this upper leg of the reroute, and the trail can continue down to the lakeshore at a grade appropriate for beginners.

### **Proposed Beaver Lake Beginner Loop Trail**

*Bright green on map*

*Proposed length: 2.0 miles*

The roughly 200 foot tall mountain to the north of Beaver Lake would be a useful place for a beginner mountain bike loop. The consultants recommend that the DEC develop a rolling contour singletrack trail here as part of this conceptual design's proposed Phase V developments. Building this beginner loop will roughly double the beginner mountain bike trail opportunities at Beaver Lake. Such an arrangement will allow those looking for a shorter excursion to find what they are after here, and those interested in extending their ride can do so as well.

### **Proposed Mitchell Ponds Intermediate Loop Trail**

*Bright blue on map*





*Proposed length: 4.5 miles*

The portion of the Mitchell Ponds Trail that runs east and west between the pond and the small parking and trailhead area off of Limekiln Lake – Cedar River Road provides a useful route to mountain bikers. The existing trail is road-like and graded appropriately for intermediate skill level mountain bikers. Stronger beginners also find this trail/road to be approachable and fun.

The mountain to the north of the Mitchell Ponds Trail provides a place where a useful intermediate rolling contour loop trail could be run. Such a trail would improve the riding experience in the area by providing an interesting intermediate skill level loop ride opportunity to the region.

### **DISCUSSION OF MRPWF UMP PROPOSED MANAGEMENT ACTIONS FOR MOUNTAIN BIKING**

The following portion of the report considers the mountain bike management actions section of the MRPWF UMP, which describes a number of actions that are designed to address the needs of mountain bikers. If the proposed trail development projects described in the following paragraphs are found to be worth pursuing they can be undertaken as part of Phase V of the development plan.

#### **MRPWF UMP Proposed Management Actions/Proposals Addressing Public Concerns**

The mountain biking section of the MRPWF UMP Proposed Management Actions describes three proposals that were added to the UMP to address concerns raised during the public comment period. The three proposals are the Otter Brook Truck Trail Wild Forest Corridor, Bear Pond – Benedict Creek Trail, and the Squaw Lake Beaver Lake Trail. They are discussed in that order below.



## Otter Brook Truck Trail Wild Forest Corridor

*Light purple on map*

*Approximate length: 15.3 miles*

The Otter Brook Truck Trail Wild Forest Corridor is a strip of land that has been classified as wild forest along the Otter Brook Truck Trail. The corridor extends from the intersection with Indian River Road to Little Moose Lake. The corridor then follows the Wilson Ridge Road to the Limekiln Lake - Cedar River Road. This corridor was created for the sole purpose of maintaining an important mountain bike loop that would have been eliminated had the area been reclassified to wilderness.

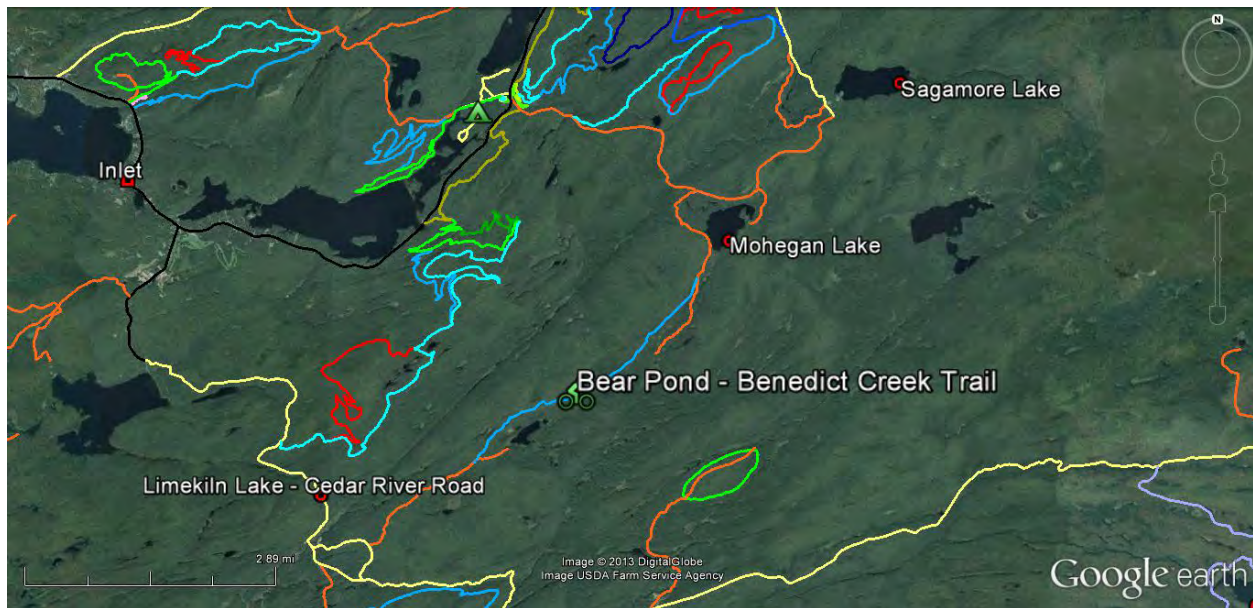
Maintaining this more distant, long-ride opportunity is important. Presently, mountain bikers use it lightly, but it is likely to become more popular as the area becomes known as a mountain bike destination. This trail corridor may prove popular with cyclists looking for a more remote, long ride. A loop using this trail and the Limekiln Lake - Cedar River Road would make for a demanding 28-mile ride.

The MRPWF UMP proposed management action calls for a singletrack bike trail to be developed within the 20-foot wide corridor (10 feet either side of the center line of the road). According to the UMP, other non-motorized uses on this route may include hiking, skiing and horseback riding.

The development of this road corridor into a singletrack trail will be useful in making the route more attractive to cyclists. The consultants don't see this route improvement as something that needs to be high on the list of mountain bike trail development priorities

for the forest, but the route should be maintained and kept open. Periodic maintenance should include the clearing of downed timber to keep the route passable.

The DEC may find it useful to use the byproducts of the trail clearing work to help shape the road-route into a more trail-like experience. As trees come down across the road they can be cut out selectively. Some of the trees may need to be completely removed from the corridor, but where it is appropriate, tree trunks and very large limbs may be carefully placed to help create a narrower, more circuitous route. Such work will need to be done with an eye toward balancing the natural esthetic of the forest with the trail builders' interest in using available resources to help create a flowing trail experience. One would not wish to see the route "lined" with branches and cut-offs from the trail clearing process, but the judicious use of larger available tree trunks, and perhaps, available large rock, could help produce a very natural looking trail on the old roadbed.



## Bear Pond – Benedict Creek Trail

*Blue on map*

*Proposed length: 3.6 miles*

The MRPWF UMP proposes that alternative 6 for the community connector snowmobile trail be developed. This trail would travel from the Bear Pond Trail to the vicinity of the northern Bear Pond Sportsman's Club camp. At this point the new trail would connect to the Bear Pond Road/Mohegan Lake Road. The UMP states that the addition of this route, when combined with existing trails, will provide a series of loops of varying lengths throughout this part of the unit. Other non-motorized uses of this trail may include hiking and skiing.





The development of this trail would open up some very long mountain bike loop opportunities on the forest, especially if the trail developments proposed in Phases II and III of this conceptual design come to be built. Once the trails proposed in early phases of this plan are built, the addition of this proposed trail will provide for a large increase in the availability of long, demanding mountain bike outings on the MRPWF.

It is the recommendation of IMBA Trail Solutions that the proposed Bear Pond – Benedict Creek Trail be purpose built for mountain bike use. This rolling contour singletrack trail should be built to standards that make it attractive for use by intermediate skill level mountain bikers. Such a trail would also be useful for hikers and cross-country skiers.

### **Squaw Lake Beaver Lake Trail**

The proposed management actions for mountain biking in the MRPWF UMP recommend that a new foot/bike trail be built to connect the Indian River Road, from the vicinity of Squaw Lake, to the Beaver Lake Trail. The UMP suggests that allowing mountain biking on this trail will provide an excellent loop utilizing portions of the Indian River Road.

It appears to the consultants that the conditions in the area between Squaw Lake and Beaver Lake are quite low and wet. Wetlands, streams, and beaver dams are commonplace in the area. This condition suggests that the building of a sustainable trail on the lands between these two bodies of water might be problematic. A sustainable trail could be established between the Squaw Lake area and the Beaver Lake Trail, but the cost of construction and maintenance of the route would likely be high. It is recommended that this trail not be built as part of the development of the mountain bike trail system on the MRPWF.

### **MRPWF UMP Proposed Management Actions/Mountain Biking Objectives**

The MRPWF UMP has established a set of objectives as part of the UMP Proposed Management Actions for Mountain Biking. The UMP describes the objectives as follows:

- Develop and implement a comprehensive mountain bike plan for the MRPWF
- Provide for mountain biking opportunities on trails suitable for their use
- Maintain trails to appropriate IMBA standards to minimize environmental impacts
- Close inappropriate trails.

Meeting these objectives will help the DEC establish and maintain a useful network of mountain bike trails on the forest.



## **MRPWF UMP Proposed Management Actions/Mountain Biking Management Actions**

The MRPWF UMP describes management actions for the improvement of mountain biking opportunities in the forest. This section of the report discusses those management actions.

**UMP Management Action: Initiate a working group consisting of mountain bike users, local governments and other interested parties to develop a comprehensive mountain bike plan for the MRPWF.**

The DEC has reached out to area mountain bikers and other interested parties toward the development of a comprehensive mountain bike plan for the MRPWF. Mountain bikers in the area are becoming more organized and local riders have been engaged in a dialog with the DEC about their interests and desires for improved mountain biking opportunities on the MRPWF. Local mountain bikers worked with IMBA Trail Solutions and the DEC during the consultant's visit to the area. These collaborative efforts have contributed greatly to the formation of this report and conceptual design, which are intended as a foundation for the further development of a comprehensive DEC mountain bike plan for the MRPWF.

**UMP Management Action: Amend the MRPWF UMP to implement the mountain bike plan once completed.**

This report and conceptual plan will be helpful to the DEC in finalizing a mountain bike plan for the MRPWF. The report and conceptual plan will be useful to the DEC when they are ready to amend the UMP to implement the mountain bike plan.

**UMP Management Action: Develop a work plan to build the Bear Pond – Benedict Creek Trail.**

The consultants recommend that this valuable trail linkage be built as part of Phase V of the trail development proposed by this report and conceptual trail design. While this trail link will be a useful addition to the trail opportunities in the area, it will be most useful once the other proposed trails in the area are developed.



**UMP Management Action: Develop a work plan to build the Squaw Lake – Beaver Lake Trail.**

The consultants do not recommend the construction of this trail as part of the conceptual design for mountain biking on the MRPWF. The area between Squaw Lake and Beaver Lake is generally quite low and wet. The consultants do make recommendations for other trails development near Beaver Lake as part of the Phase V section of the proposed trail development. As mentioned previously in this report, the area considered for trails development near Beaver Lake is on higher ground where it would not be necessary to employ extensive use of raised trail tread construction techniques or a costly trail maintenance schedule.

**UMP Management Action: Allow the use of mountain bikes on all open roads within the MRPWF.**

This is an appropriate and useful management action for the MRPWF.

**UMP Management Action: Designate the following existing trails for use by mountain bikes;**

Otter Brook Truck Trail

Approximate length: 13 miles

It is appropriate to designate this trail for use by mountain bikes. The truck trail corridor helps maintain an important mountain bike loop.

Wilson Ridge Road

Approximate length: 6 miles

It is appropriate to designate this road/trail for use by mountain bikes. This road helps maintain an important mountain bike loop.

Mitchell Ponds Trail/Mitchell Ponds Road

Approximate length: 3.3 miles

The portion of the Mitchell Ponds Trail that runs east and west between the pond and the small parking and trailhead area off of Limekiln Lake – Cedar River Road provides a useful route to mountain bikers. The Phase V Proposed Development section of this report makes recommendations for other trail improvements for the area around Mitchell Ponds.

The section of the Mitchell Ponds snowmobile trail running in a north to south orientation and connecting Mitchell Ponds to another area of the Limekiln Lake – Cedar River Road is impassable in the warmer months of the year due to a high water crossing (beaver pond) at a tributary of the Red River. IMBA Trail Solutions does not





recommend that this north/south trail be included in the conceptual design for mountain bike trails on the MRPWF.

### Rock Dam Trail

Approximate length: 1.4 miles

It is appropriate to designate this road for use by mountain bikes. The road leads to Rock Dam near the confluence of the Red and Moose Rivers.

### FX Matts Trail

Approximate length: 4 miles

It is appropriate to designate this trail for use by mountain bikes. This trail provides a connection to the MRPWF trail system at the Fern Park Ski Trails area in Inlet.

Presently, good mountain bike trail opportunities are quite limited at the Fern Park Ski Trails area, but the potential for improvements to the area's trails is good. If the trails at the Fern Park Ski Trails are reworked into useful mountain bike trails the FX Matts Trail will likely become more important as a route into the Limekiln Lake area. As the FX Matts Trail is primarily maintained for snowmobile use it will likely require improvements to make it most useful to mountain bikers.

### Bear Pond Trail

Approximate length: 2 miles

It is appropriate to designate this trail for use by mountain bikes. The proposed Bear Pond – Benedict Creek Trail will connect with the existing Bear Pond Trail to help form a link between the Limekiln Lake – Cedar River Road and the Mohegan and Sagamore Lakes areas. Some improvements to the Bear Pond Trail may be necessary to help bring it into a condition that is conducive to mountain bike use.

### Rocky Mountain Trail

IMBA Trail Solutions does not recommend that this trail be designated as open to mountain bikes. This trail provides a very direct route to the summit of Rocky Mountain that is useful to hikers. It is too steep to be of much use to mountain bikers. Other nearby areas of the forest show promise as settings where the development of alternative demanding routes for mountain bike use can be established.

### Lost Ponds Trail

Approximate length: 3 miles

It is appropriate to designate this road/trail for use by mountain bikes. This road helps maintain a useful route into the Lost Ponds area. Recommendations for improvements to the Lost Pond Trail can be found in this report's Phase V Proposed Development section.



### Ice House Pond Trail

Approximate length: 0.4 miles

It is appropriate to designate this trail for use by mountain bikes. This trail provides access to Ice House Pond and vicinity.

### Helldiver Pond Trail

Approximate length: 0.4 miles

It is appropriate to designate this trail for use by mountain bikes as it provides access to Helldiver Pond and vicinity.

### Cellar Mountain Road to Cellar Pond

Approximate length: 1.8 miles

It is appropriate to designate this road for use by mountain bikes. This is a demanding route for mountain bikers and is useful in providing access to Cellar Pond and vicinity.

### Wakely Mountain Trail to the first bridge

Approximate length: 1.0 mile

It is appropriate to designate this trail for use by mountain bikes. Doing so helps maintain a useful mountain bike loop utilizing this section of trail and Gould Road. Some improvements to the trail may be needed to bring it into a condition that is conducive to mountain biking.

### Gould Road

Approximate length: 2.0 miles

It is appropriate to designate this road for use by mountain bikes. This road helps maintain a useful mountain bike loop utilizing this road and a portion of the Wakely Mountain Trail.

### Beaver Lake Trail

Approximate length: 2.0 miles

It is appropriate to designate this trail for use by mountain bikes. This is currently one of the best beginner mountain bike opportunities available on the MRPWF. Proposed improvements to the mountain bike trail opportunities in the vicinity of Beaver Lake are discussed as part of this report's Phase V trail development schedule.

### Indian Lake Road/Indian River Road

Approximate length: 3.3 miles

It is appropriate to designate this road for use by mountain bikes. This road is useful for the connectivity it provides to the Squaw and Indian Lake regions of the forest.



### Squaw Lake Trail

Approximate length: 0.2 miles

It is appropriate that this trail be designated for use by mountain bikes. The trail provides access to Squaw Lake. Some trail improvements may be necessary to bring the trail up to standards appropriate for bicycle use.

### Indian Lake Trail

Approximate length: 1.9 miles

It is appropriate that this trail be designated for use by mountain bikes. The trail provides access to Indian Lake.

### Bug Lake Trail

Approximate length: 3.5 miles

It is appropriate that this trail be designated for use by mountain bikes. The trail utilizes an old woods road maintained primarily for snowmobile and hiking use. Mountain bikers enjoy this trail and it is important for its links to Uncas Road on its northwest end, and Eighth Lake Campground at its southeast end. The Bug Lake Trail also forms connections with several other area trails.

Some of the trail grades along sections of the trail make pedaling difficult for beginner skill level riders. The usefulness of this trail to a wider audience of mountain bikers could be achieved through the installation of some well-placed reroutes, and portions of the trail tread could be improved to allow obstacles appropriate for beginners.



Bug Lake Trail



### Black Bear Mountain Trail

Approximate length: 3.0 miles

It is appropriate that this trail be designated for use by mountain bikes. This trail is discussed in the Phase IV trail development section of this report. The conceptual design recommends that the trail be rerouted to avoid wet conditions found along much of the present alignment.





### Seventh – Eighth Lake Trail North Section

Approximate length: 2.6 miles

It is appropriate that this trail be designated for use by mountain bikes. This trail is important mainly for the connectivity it will provide between the proposed parking and mountain bike trailhead facilities and trails near Eighth Lake Campground and the many proposed trails to the east of the highway and campground. This trail will need improvements to allow it to function as a useful route for bicycling.

At the east end of this north section of the Seventh – Eighth Lake Trail the route approaches the Mohegan Lake Road, but does not intersect with it. The Traveling Rock Trail is an existing connector trail running between the Seventh – Eighth Lake Trail and the Mohegan Lake Road, but the trail is a rough, overgrown snowmobile trail that is presently impassable to bicyclists. The improvement of the Seventh – Eighth Lake Trail North Section should continue east to its intersection with Traveling Rock Trail. The improvement of the Traveling Rock Trail to provide for a linkage between the Seventh – Eighth Lake Trail and the Mohegan Lake Road is discussed later in this section of the report. Improving the Seventh – Eighth Lake Trail North Section will help provide an important trail connection between distant parts of the proposed trail network.

### Seventh Lake Trail

Approximate length: 1.2 miles

It is appropriate that this trail be designated for use by mountain bikes. Mountain bikers currently enjoy the trail. Improvements to the trail are proposed in Phase II of the conceptual design development plan.

### Mike Norris Trail

Approximate length: 2.5 miles

It is appropriate that this trail be designated for use by mountain bikes. The Mike Norris Trail is useful to mountain bikers mainly for the linkages it provides to other areas of the forest. It is also useful because it is largely graded in a fashion that allows approach on a bicycle. It can remain largely as it is, or it can be adjusted with some short reroutes and trail tread improvements that would widen its appeal and usefulness.

### West Mountain Trail

Approximate length: 2.2 miles

It is appropriate that this trail be designated for use by mountain bikes. Proposed improvements to the West Mountain Trail are discussed in this report as part of the Phase I development recommendations.



### Beaver Flow Trail

Approximate length: 2.0 miles

It is appropriate to designate this trail for use by mountain bikes. This trail forms a useful loop in conjunction with Sagamore Road. Two bridges will need to be built to accommodate bicycle use, and other trail tread improvements may need to be made to best accommodate bike travel.

### Sucker Brook Bay Trail

Approximate length: 2.4 miles

It is appropriate to designate this trail for use by mountain bikes. This is a useful mountain bike trail. It is one of the best beginner mountain bike trail opportunities on the MRPWF. The trail and possible improvements to it are covered as part of the Phase I trail development recommendations made in this report.

### Browns Tract Inlet Carry Trail

Approximate length: 1.2 miles

It is appropriate to designate this trail for use by mountain bikes. This route helps form a useful connection for mountain bikers between the Mike Norris Trail and Dillon Road. Portions of the trail will need to be improved to make it more suitable for mountain bike use.

### Third Lake Creek Trail

Approximate length: 0.8 miles

It is appropriate to designate this trail for use by mountain bikes as it helps to provide a link to Third Lake. This trail may need some improvement to help make it more useful to mountain bikers.

### Traveling Rock Trail

Approximate length: 0.4 miles

It is appropriate to designate this trail for use by mountain bikes. The Traveling Rock Trail is an existing snowmobile connector trail running between the east end of the Seventh – Eighth Lake Trail North Section and the Mohegan Lake Road. The present condition of this snowmobile trail is rough from lack of warm-season use and maintenance, so it will need some work to bring it into a condition that will make it passable for mountain bikers. The current alignment of the trail should be studied for its sustainability and improvements to the trail should be made to improve its utility. This trail will help provide an important trail connection between distant parts of the proposed trail network.

### Limekiln Lake Trail

Approximate length: 4.9 miles

It is appropriate to designate this trail for use by mountain bikes. This trail is presently lightly used as a mountain bike route, but with improvements it would be much more functional as a connection between the town of Inlet and the trails and facilities in the vicinity of Limekiln Lake.

### Trails Adjacent to Fern Park

Approximate length: 10 to 15 miles of trails

It is appropriate to designate these trails for use by mountain bikes. The majority of the Fern Park Ski Trails are on property outside of the MRPWF. The Fern Park trails are used for mountain biking, but their use by cyclists is limited by their lack of suitability as mountain bike routes.

Some sections of the trails work as mountain bike routes, while others are too steeply graded or otherwise pose technical challenges that make them largely unapproachable on a bike. If the Fern Park Ski Trails are improved for mountain bike use the trails adjacent to Fern Park will be important to the success of the network.



Mohegan Lake Trail

**UMP Management Action: Designate the following closed motor vehicle roads for use by mountain bikes: Mohegan Lake Road and Bear Pond Road.**

It is appropriate to designate the Mohegan Lake and Bear Pond Roads for use by mountain bikes. Doing so maintains access for mountain bikers seeking to make connections between various parts of the proposed trail network.

**UMP Management Action: Designate the new community connector snowmobile trail for use by mountain bikes.**

The DEC is currently in the process of completing the construction of a new snowmobile trail connecting Limekiln Lake – Cedar River Road with Raquette Lake. The MRPWF UMP suggests that this snowmobile trail may be useful to mountain bikers. While the new community connector snowmobile trail forms a critically important snowmobile





linkage for the area, the consultants feel that it will not function well as a route for mountain bike use.

The new snowmobile trail includes sustained grades of 20% or more. These long, climbs make segments of the route too steep for use by most mountain bike riders. Some very strong and skilled riders could approach these climbs, but they would surely need to push their bikes for extended periods. Pushing one's bike up hills that are too steep for one's ability is certainly part of the mountain bicycling experience, but this important community connector route should be approachable to those who are less than expert at the sport.

It appears to the consultants that the snowmobile trail was so aligned as to take advantage of areas where sideslopes are not pronounced. This may be important to the layout of a snowmobile trail, as steeper sideslopes tend to present problems to the grooming and use of snowmobile trails. Flattish terrain, however, can be problematic with regards to drainage during the warm-season months of the year. Additionally, hillside areas above flatter land can sometimes produce seeps across the flatter portions of the landscape. Another concern where trails are aligned to avoid sideslopes is the tendency to allow the route to approach the fall line. Warm season trails that are routed in the fall line, or that approach a fall line alignment, are notoriously unsustainable.

Another consideration in the use of snowmobile trails for mountain bike use is tread condition. Trail treads for snowmobiles can be quite rough. Exposed, embedded rocks are often left in place, and tree stumps and low growth are not grubbed out completely in the construction of snowmobile trails. Drainage structures and bridge approaches are sometimes abrupt in anticipation that winter snows and grooming will ease these trail tread transitions. While such tread conditions may be suitable for stronger, more skilled mountain bike riders, they are problematic for less skilled riders, especially in the fall when leaves tend to cover trail obstacles.

A sustainable trail system provides trail users with connectivity between the various areas of the network. The new snowmobile trail will not provide for mountain bike interconnectivity. The consultants recommend that the singletrack trails proposed in this conceptual design be built as a means of providing interconnectivity between the various areas of the MRPWF mountain bike trail network.

Where trail grades are appropriate the conceptual design does occasionally utilize some short stretches of the new snowmobile trail. The existing trail tread along these sections of trail will need some minor changes to best accommodate bicycle use. These changes can be carried out as part of the proposed phased construction of the greater trail system. Changes to the snowmobile trail tread to accommodate mountain bike use will not have any impact on the wintertime experiences of snowmobilers.



The consultants recommend that the new community connector snowmobile trail be designated for use by mountain bikes with the understanding that only select sections of the trail will be utilized as part of the planned for mountain bike trail network.

**UMP Management Action: Post signs prohibiting the use of mountain bikes on the following trails;**

Rocky Mountain Trail, Black Bear Mountain Ski Trail, Wakely Mountain Trail (beyond the first bridge), Cellar Mountain Road (beyond Cellar Pond), Whites Pond Trail, and Cathedral Pines Trail

This is an appropriate management action.

**UMP Management Action: If additional problem areas are found in the future, relocate those sections if possible. If relocation is impossible and the situation cannot be mitigated, close those trails for all uses until a solution is found.**

This is an appropriate management action.

**UMP Management Action: Assess old logging roads throughout the unit for future opening for mountain bikes. Amend the UMP if new bike trails are to be designated.**

This is an appropriate management action.

## **COST ESTIMATES AND PHASING**

The approximate construction cost was evaluated based on Trail Solutions' experience developing and implementing similar projects. The costs noted in this report are for construction only, and do not include planning, design, permitting, easements/purchases, trailhead development, erosion control, or project management. It is important to note that the actual length of a constructed trail is typically 10-20% greater than the designed length, due to the turns and undulations of a trail tread on the landscape.

Costs vary greatly based upon a variety of factors, including the remote nature of the work, demand for trail contractors in a given year, terrain, vegetation, and length of the build season. The majority of this cost opinion is based on construction using a mix of trail machines and hand labor.



## Mountain Bike Trails Concept Plan MRPWF

| Mountain Bike Trails Concept Plan for MRPWF Cost Opinion |                           |                         |                            |                    |
|--|---------------------------|-------------------------|----------------------------|--------------------|
| Trail  | Trail Type                | Estimated Distance/Feet | Professional Trail Builder | Conservation Corp. |
| Browns Gateway 1   | Multi direction gateway   | 1600.00                 | \$5.00/lf                  | \$1.50-\$3.00/LF   |
| Browns Gateway 2   | Multi direction gateway   | 1600.00                 | \$5.00/lf                  | \$1.50-\$3.00/LF   |
| Browns Beginner 1  | Multi direction multi-use | 5300.00                 | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Browns Beginner 2  | Multi direction multi-use | 5300.00                 | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Browns Beginner 3  | Multi direction multi-use | 2100.00                 | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Browns Intermediate                                      | Multi direction multi-use | 6300.00                 | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 8th Lake Gateway   | Multi direction gateway   | 2600.00                 | \$5.00/lf                  | \$1.50-\$3.00/LF   |
| 8th Lake Mt Access                                       | Multi direction multi-use | 500.00                  | \$5.00/lf                  | \$1.50-\$3.00/LF   |
| 7th Lake Beginner Loop                                   | Multi direction multi-use | 18500.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 7th Lake Intermediate Loop                               | Multi direction multi-use | 21100                   | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 8th Lake Mt Beginner 1                                   | Multi direction multi-use | 4200.00                 | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 8th Lake Mt Beginner 2                                   | Multi direction multi-use | 2600.00                 | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 8th Lake Mt Beginner 3                                   | Multi direction multi-use | 15800.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 8th Lake Mt Intermediate 1                               | Multi direction multi-use | 13200.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 8th Lake Mt Intermediate 2                               | Multi direction multi-use | 30100.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 8th Lake Mt Intermediate 3                               | Multi direction multi-use | 25300.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 8th Lake Mt Intermediate 4                               | Multi direction multi-use | 13700.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Connector to Old Uncas Road                              | Multi direction multi-use | 12100.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Sagamore Intermediate Loop                               | Multi direction multi-use | 15300.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Sagamore Advanced Loop                                   | Multi direction multi-use | 13200.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| North Sagamore Advanced                                  | Multi direction multi-use | 25300.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 7th Lake to Old Uncas Beginner                           | Multi direction multi-use | 13700.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 7th Lake Mt. Beginner                                    | Multi direction multi-use | 15800.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 7th Lake Mt. Intermediate                                | Multi direction multi-use | 39600.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 7th Lake Mt. Advanced                                    | Multi direction multi-use | 23800.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| 7th Lake Mt. Beginner Gravity                            | One way gravity           | 13200.00                | \$8.00-\$12.00/lf          | n/a                |
| 7th Lake Mt. Intermediate Gravity                        | One way gravity           | 13200.00                | \$8.00-\$12.00/lf          | n/a                |
| Rocky Mt. Gateway  | Multi direction gateway   | 2600.00                 | \$5.00/lf                  | \$1.50-\$3.00/LF   |
| Rocky Mt. Beginner                                       | Multi direction multi-use | 18500.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Rocky Mt. Intermediate                                   | Multi direction multi-use | 20100.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Black Bear Intermediate                                  | Multi direction multi-use | 15800.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Inlet Tr. System Advanced                                | Multi direction multi-use | 10600.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Lost Ponds Beginner Loop                                 | Multi direction multi-use | 13200.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Reroute Beaver Lake                                      | Multi direction multi-use | 1600.00                 | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Beaver Lake Beginner Loop                                | Multi direction multi-use | 10600.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Mitchell Ponds Intermediate Loop                         | Multi direction multi-use | 23800.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |
| Bear Pond - Benedict Creek                               | Multi direction multi-use | 19000.00                | \$5.00-\$8.00/lf           | \$1.50-\$3.00/LF   |

## Phasing

A phased implementation approach is appropriate for the development of a mountain bike trails network on the MRPWF. The plan should be implemented accordingly, based upon the benefits of each phase of trail development to the users and the community.

- 1st Priority –
  - Phase I Trail Development – Trails in the vicinity of Browns Tract Pond State Campground
- 2nd Priority
  - Phase II Trail Development – Proposed Eighth Lake Trail System





- 3rd Priority
  - Phase III Trail Development – Proposed Seventh Lake Mountain Trail System
- 4th Priority
  - Phase IV Trail Development – Proposed Inlet Area Trail System
- 5th Priority
  - Phase V Trail Development – More Distant Trail Development

## TRAIL DESIGN AND CONSTRUCTION

Field verification and refinement of the alignments presented in this report will need to be made prior to the start of phased trail development. Refining the alignments will help to create a sustainable, enjoyable trail system. The specific alignment of the trail tread should be built to accommodate mountain bicyclists, as they will be able to obtain speeds greater than a hiker or equestrian. Information for trail design and construction can be obtained from Trail Solutions: IMBA's Guide to Building Sweet Singletrack, and Managing Mountain Biking: IMBA's Guide to Providing Great Riding, both published by IMBA.

Verified alignments should be flagged inter-visibly to delineate corridors that are appropriate for the construction of the trails. This flagging would represent the centerline of a corridor where trail construction could take place, property boundary constraints notwithstanding. Prior to construction, and preferably prior to the development of bid documents, it is highly recommended that a qualified trail builder with extensive experience developing mountain bicycle-specific singletrack trails tightly mark the exact configuration and detailing of turns, tread undulations, and frequent grade reversals (among other important trail design elements) with pin flagging, stakes, and paint.

It is strongly recommended that the selected trail construction contractor be a member of a related professional organization, such as the Professional Trail Builders Association, as these contractors are more likely to understand the specific needs, materials, and techniques associated with trail building. The use of contractors primarily experienced in road construction is not recommended as these firms and individuals are not versed in the needs of trail users and recreation-based construction.

The development of a mountain bike trail network will require the development of a comprehensive system of signs for the trail system. Signs are the most important communication tool between land managers and trail users. A well-implemented and maintained sign system has the potential to greatly enhance the user experience, navigating visitors through the trail network and providing information about the area. Signage also plays a critical role in managing risk and in the rapid deployment of



emergency services.