

Whiteface Mountain Hiking and Mountain Biking Trail Masterplan

EXECUTIVE SUMMARY

Tahawus Trails LLC proposes the improvement and development of xx miles of trails within the Whiteface Mountain Intensive Use Area to create a regional mountain bike destination at Whiteface Mountain and to supplement the trail system on the adjacent Wilmington Wild Forest Lands. This includes 28.5 miles of new trail or improved existing trails. Of the total, 9 miles are for hiking / pedestrian only, 14.7 are mountain biking only, and 4.8 are shared use.

SUMMARY OF PROPOSED TRAILS WITHIN INTENSIVE USE AREA

	Miles
Existing Trails	21.1
Proposed Total Trail Mileage (all uses)	28.5
Proposed Mountain Bike Trail New Construction and Existing Trails with Reconstruction	14.7
Proposed Shared Use Trails	4.8
Proposed Hiking / Pedestrian Trail New Construction and Existing Trails with Reconstruction	9
Mountain Bike Trail Breakdown by Difficulty Level	
Total Miles of Easiest Trails (Green Circle)	6.25
Total Miles of More Difficult Trails (Blue Square)	10.55
Total Miles of Most Difficult Trail (Black Diamond)	2.7
Trail Tally	
Number of Existing Mountain Bike Trails	27
Number of Existing Mountain Bike Trails to be Eliminated	9
Total Number of Proposed Mountain Bike Trails (including shared use trails)	22

ENVIRONMENTAL IMPACTS

Total # of New Bridges (>10 feet) at Major Stream Crossings	11
Total Estimated Number of Trees to be Removed (≥3" DBH)	8,850
Total Estimated Number of Trees to be Removed 1" to 3" DBH	6,114
Total Estimated Number of Trees to be Removed > 3" DBH	2,736

SUMMARY OF PROPOSED NEW BIKING TRAILS

Trail Name:	Proposed Length	Proposed Width	% of Trail Requiring Clearing	Length of Trail Requiring Clearing	Mileage of Trail Using Existing	Applicable Construction Methods
	(Miles)	(Feet)	%	(Miles)		BMPs and Typical Detail Pages
a) Green Flow	1.9	5	80	1.52	0.38	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
b) Green Jump	0.2	5	100	0.15	0	
c) Top of Falcon Flyer to Bear Den Lodge	1.0	5	35	0.35	0.65	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
d) Base Lodge to Valvehouse	0.9	3	0	0	0.9	5,6,7,8,9,10, 12, 13, 14
e) Northeast Beginner Loop	1.3	3	100	1.25	0	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
f) Magic Bus Road	0.6	Ski Trail	0	0	0.6	7
g) Pedal Access Above Legacy	0.5	Ski Trail	0	0	0.5	5
h) Upper Blue Flow	0.3	5	90	0.225	0.03	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17
i) Lower Blue Flow	0.3	5	75	0.225	0.07	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
j) Blue Jump	0.8	7	100	0.8	0	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17
k) Northeast Shore	0.4	5	0	0	0.4	5, 6, 7, 8, 9, 10, 11, 12, 13, 14,
l) Northern Singletrack Trails	2.4	3	95	2.28	0.12	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17
m) Seek and Destroy	0.3	3	0	0	0.3	5, 6, 7, 8, 9, 10, 11, 12, 13, 14
n) New Blue Technical	0.3	3	30	0.09	0.21	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17
o) New Inconceivable	1.2	3	50	0.6	0.6	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17
p) Southeast Shore	0.4	3	90	0.36	0.04	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17
q) River-loop	0.7	3	0	0	0.7	5, 6, 7, 8, 9, 10, 11, 12, 13, 14
r) Slickrock	0.5	3	0	0	0.5	5, 6, 7, 8, 9, 10, 11, 12, 13, 14
s) To Slickrock	0.2	3	50	0.1	0.1	5, 6, 7, 8, 9, 10, 12, 13, 14, 17
t) Center Advanced	0.6	3	33	0.198	0.4	5, 6, 7, 8, 9, 10, 12, 13, 14, 17
u) Freedom	0.3	3	0	0	0.3	5, 6, 7, 8, 9, 10, 12, 13, 14
v) Evil Empire	0.6	3	0	0	0.6	5, 6, 7, 8, 9, 10, 12, 13, 14
23) Drifting Terror	0.5	Ski Trail	0	0	0.5	5, 6, 7

PROPOSED SKILLS PARK

Skills parks are a common feature at modern bike parks. These areas can range from a few hundred square feet to an acre or more and are generally the first feature of the bike park that visitors are drawn to. Skills parks offer a variety of riding features, such as rollers, berms, drops, balance beams and other obstacles, where riders can practice skills before taking them to the trails. These features will often be progressive in size or difficulty so riders can work their way from easier to more difficult skills. (ie: wide balance beam, narrow balance beam, "S" balance beam) This space can be used for warm up, practice, taking a break between chairlift runs, testing rental bikes or participating in educational clinics. The intention of this area is progression and education.

The proposed skills park at Whiteface is located near the Bear Den base lodge in the forest to the east of new ski lift's loading area. This skills area will be about an acre in size and can be constructed around large trees thereby minimizing significant tree cutting.

SUMMARY OF PROPOSED NEW HIKING TRAILS

Trail Name:	Proposed Length	Proposed Tread Width	% of Trail Requiring Clearing	Length of Trail Requiring Clearing	Length of Trail Using Existing Trails	Proposed Construction Method
	(Miles)	(Feet)	%	(Miles)	(Miles)	BMPs and Typical Details
A) Top of the Gondola to the Base Lodge	2.7	2	0	0	2.7	
B) Bear Den Mountain Extension	0.2	2	0	0	0.2	5, 6, 7, 11, 1, 18
C) Little Whiteface Summit Path	0.1	3	0	0	0.1	5, 6, 15, 18
23) Legacy Lodge to the New Bear Den Trail	0.5	2	0	0	0.5	5, 6, 7
D) Valve House Road to Bear Den Lodge	0.5	2	0	0	0.5	N/A
E) Champlain Valley Trail	0.65	2	0	0	0.65	5, 6, 17
F) Slide-Out	0.45	2	0	0	0.45	5, 6, 7, 10, 11, 17, 18
G) West Branch Nature Trail Extension	0.25	3	0	0	0.25	5, 6, 11, 17
H) Little Whiteface Mountain Ridge Trail	0.25	2	100	0.25	0	5, 6, 17, 18
I) Top of Summit Quad to the Summit	0.3	1.5	95	0.285	0.01	5, 6, 11, 15, 17, 18
J) New Bear Den Mountain Trail	2.4	3	92	2.208	0.2	5, 6, 11, 15, 17, 18
K) Paron's Run to the Bottom of the Slides	0.7	2	30	0.21	0.5	5, 6, 11, 15, 17, 18
L) West Branch Ausable River Accessible Trail	1.25	5	100	1.25	0	5, 6, 10, 15, 16, 17
M) Accessible Trail to the Eastern Drainage	0.5	5	100	0.5	0	5, 6, 10, 15, 16, 17

SUMMARY OF EXISTING HIKING TRAILS

Trail Name:	Existing Length:	Proposed Length:	Proposed Construction Methods
	(Miles)	(Miles)	
West Branch Nature Trail	1.9	1.9	See Summary of Proposed Work
Stag Brook Falls Trail	0.5	0.5	See Summary of Proposed Work
Top of Gondola to the Summit	1.3	1.3	See Summary of Proposed Work
Nature Trail at the Summit	0.2	0.2	See Summary of Proposed Work
Top of the Gondola to the Base	2.5	2.5	See Summary of Proposed Work
Bear Den Mountain Trail	3.2	3.2	See Summary of Proposed Work

SUMMARY OF EXISTING BIKING TRAILS

Trail Name:	Existing Length:	Proposed Length:	Change in Length:	Existing Width:	Proposed Width:	Close or Keep	Clearing Required:	Proposed Construction Method
	(Miles)	(Miles)	(Miles)	(Feet)	(Feet)	(Feet)	(Feet)	
1) Magic Bus Road	1.4	1.4	0	Ski Trail	Ski Trail	KEEP	N/A	See Proposed Work Table
2) South East Shore	0.3	0.5	0.2	3	3	KEEP	N/A	See Proposed Work Table
3) Slickrock	0.4	0.5	0.1	Ski Trail/ 3	Ski Trail/ 3	KEEP	N/A	See Proposed Work Table
4) Fire Swamp	0.3	0	-0.3	Ski Trail/ 3	0	CLOSE	N/A	N/A
5) Judge	0.4	0	-0.4	3-5	0	CLOSE	N/A	N/A
6) AuSable Loop	0.9	0.9	0	3	3	KEEP	N/A	See Proposed Work Table
7) River Run	1	1	0	3	3	KEEP	N/A	See Proposed Work Table
8) Papa Bear	0.4	0.4	0	Ski Trail	Ski Trail	KEEP	N/A	See Proposed Work Table
9) Brakeless	1	0	-1	Ski Trail	0	CLOSE	N/A	N/A
10) True Blue	0.3	0	-0.3	Ski Trail/ 12	0	CLOSE	N/A	N/A
11) Balay Way	0.2	0.2	0	3-5	3	KEEP	N/A	See Proposed Work Table
12) Opiate	0.4	0.4	0	3-5	3	KEEP	N/A	See Proposed Work Table
13) Seek and Destroy	0.2	0.2	0	3-5	3	KEEP	N/A	See Proposed Work Table
14) Mama Bear	0.5	0	-0.5	Ski Trail	0	CLOSE	N/A	N/A
15) North East Shore	0.3	0.4	0.1	3-5	3-5	KEEP	N/A	See Proposed Work Table
16) Dazed	0.6	0	-0.6	3	0	CLOSE	N/A	N/A
17) Confused	0.8	0	-0.8	3	0	CLOSE	N/A	N/A
18) Rodents of Unusually Large Size	0.4	0	-0.4	3	0	CLOSE	N/A	N/A
19) Upper Wilmington Connector	1	1	0	3	3	KEEP	N/A	See Proposed Work Table
20) Lower Wilmington Connector	1	1	0	3	3	KEEP	N/A	See Proposed Work Table
21) Rolling Beauty	N/A	N/A	N/A	N/A	N/A	CLOSE	N/A	N/A
22) Fearless	0.1	0	-0.1	3-5	0	CLOSE	N/A	N/A
23) Drifting Terror	2.3	0.6	-1.7	Ski Trail	Ski Trail	KEEP	N/A	See Proposed Work Table
24) Freedom	0.5	0.3	-0.2	5-8	5	KEEP	N/A	See Proposed Work Table
25) Inconceivable	0.4	1.2	0.8	5-8	5	KEEP	N/A	See Proposed Work Table
26) Cliffs of Insanity	0.3	0	-0.3	5-8	0	CLOSE	N/A	N/A
27) Evil Empire	1.3	0.6	-0.7	Ski Trail/ 5-8	3	KEEP	N/A	See Proposed Work Table

PART I - Overview

The Olympic Regional Development Authority (ORDA) seeks to develop hiking and mountain biking recreational trails to be independent and serviced by lifts at Whiteface Mountain Ski Center. The Ski Centers are on land owned by NYS and overseen by the Department of Environmental Conservation (DEC), as such all new developments need to be incorporated into Unit Management Plans approved by the DEC. The goal of this masterplan is to develop a conceptual plan for a world class independent and lift-serviced summer recreation trail system to be included as an appendix in those UMPs.

Staff from Tahawus Trails LLC spent several weeks in the Spring of 2021 assessing the existing trails and scouting new opportunities to improve and expand upon the existing hiking and biking experiences at Whiteface.

The following site-specific objectives and key control / access points were pre-determined as guides to the trail network.

- Hiking and mountain bike interconnections to regional networks (specifically Wilmington Wild Forest)
- Provide mountain bike and hiking access via a new proposed connector lift from Bear Den Lodge to Mid-station (Legacy) Lodge:
- Legacy (Mid-Station) Lodge – upper terminus of lift serviced Mountain Bike Trails independently accessed trails may extend higher than Mid-station Lodge.
- Bear Den Lodge – lower terminus of Mountain Bike Trails
- Regional Mountain Bike inter-connections
- Provide hiking access from the Main Base Lodge Gondola, Summit of Little Whiteface (top of Gondola), as well as Bear Den Lodge and Mid Station Lodge.
- Investigate potential for improvements and expansion to existing hiking trail network.

Our assessments, recommendations, and proposals are provided in this document.

Opportunities and Constraints

Whiteface Brand

Whiteface Mountain is recognized as a world class alpine skiing destination throughout the eastern United States and Canada. Visitors appreciate the wilderness experience that the Adirondacks offer, meanwhile enjoying the amenities provided in nearby Lake Placid and Wilmington. Summer recreation in the High Peaks area is at an all time high by hikers and mountain bikers alike. However, Whiteface Mountain does not currently provide a world class mountain biking or hiking experience for visitors of all skill levels. The proposed trail plan provides the opportunity to harness summer visitors in the area who

normally overlook Whiteface Mountain simply because the facilities do not exist. If the trail plan is implemented correctly, visitors will focus their vacation on riding and/or hiking at Whiteface Mountain and will identify it similarly as they do in the winter months. Not only will the new trails enhance visitors' experience and likely inspire a return visit, but it is also an opportunity to educate hikers and mountain bikers on proper skills, preparedness and safety needed to fully enjoy their time on Whiteface Mountain trails.

Views

Most of the existing year-round views within the unit are on the alpine ski trails and on Bear Den Mountain. However, multiple view shed opportunities exist along the proposed trail plan, especially on ledgy terrain above Bear Den lodge.

Existing Ski Trails

Overall, the proposed trail plan utilizes the forested corridors between or adjacent to the existing alpine ski trails primarily to avoid snow making and grooming operations that may prematurely deteriorate or destroy constructed tread, berms and other features.

For mountain biking, the alpine ski trails are more constraining. With the exception of the Easy Street Trail and the terrain around the Bear lift area, most of the alpine ski trails are too steep for all but the most advanced and most difficult riding. In addition, constructing more moderately graded mountain biking trails parallel to the contours and across the steeper trails requires deep bench excavation cuts which could create conflicts with winter operations.

Soils, Bedrock, and Rock Features

Whiteface's natural rock features and rock strewn soil are typical of the Adirondack High Peaks landscape. Bedrock is also prevalent throughout the proposed trail system, making trail routing options limited without amending the trail surface with mineral soil or elevating the tread with wooden or rock features.

Sufficient mineral soils are needed for easier and more difficult trail types so the lack of it makes trail development a greater challenge.

Thin soils and exposed bedrock are particularly problematic for biking trails above the Face Lift's upper terminus, along River Run, and south of the Parkway Ski Trails.

Ledge and cliffs are major constraints east of Boreen Loop and upper Boreen, as well as on the Bear Den ridge above Falcon Flier. However, these ledge systems and glacial erratics present challenging routing also offer interesting trailside features and vista opportunities

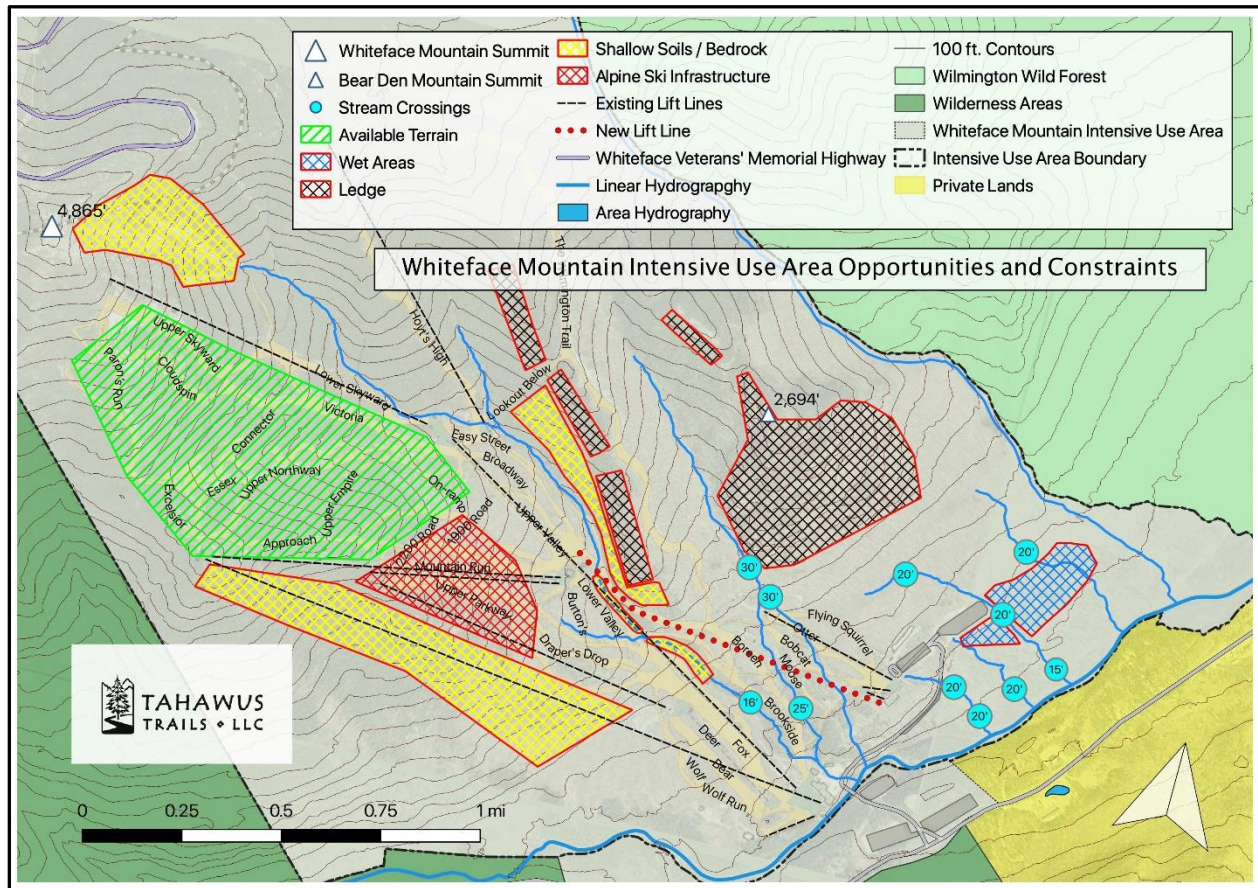
Streams, Drainages and Ravines

Streams are always opportunities for natural interest while also being challenges to cross. Trail alignments are often dictated by the optimal stream crossings locations where spans are shortest and bridge siting is most sustainable. The existing alpine ski trail stream crossing are considered for crossings.

Lift Access and Facilities

Given that Bear Den Lodge will be the designated summer starting point, rental facility, and lower terminus for the new bike served lift and that the lift will have a drop off point on the Boreen Ridge and the terminus at Legacy Lodge, those three points become critical controls for all lift serviced biking and restricts the overall elevation and terrain served by lifts.

The Cloudsplitter Gondola provides for fast and enjoyable access to some of the best views on the mountain. However, it also serves some of the most limiting terrain where slopes are steepest and soils are thinnest thereby restricting biking and hiking opportunities.



Part II - Hiking Trails

Existing Hiking Trails and Conditions

Officially, there are nine designated hiking routes within the Unit (five of these trails have sections that are classified as Multi-use). The condition of these trails varies from lightly used and sustainable to heavily traveled and eroded. The existing trails using alpine ski runs are generally steep and are composed of a loose gravelly walking surface. Re-alignments to moderate grades are often the best prescription to achieve sustainability while also creating more positive and memorable trail experience.

Existing Trail Descriptions

The **West Branch Nature Trail** leaves from the Base Lodge and follows the Mixing Bowl lift until entering the woods where it parallels the West Branch Ausable River. It proceeds to climb until reaching an existing service road which leads back to Valve House Road and eventually the Stag Brook Falls trail in several places, this trail lacks clear directional signage.

The **Stag Brook Falls Trail** leaves from the Base Lodge and climbs up Stag Brook paralleling several cascades and a waterfall. With increased use, this trail could become unsustainable as it steep and follows a direct path. To preserve the experience of hiking along the waterway, tread hardening with stairs would likely be a preferred solution to trail re-alignments.

Top of the Gondola to the Summit uses the existing ski trails: Excelsior, Paron's Run and The Follies to reach the top of the Summit Quad. From the top of the Summit Quad Lift, it shortly follow an electric line until the trail deviates and steeply ascends to the summit of Whiteface Mountain. With increased use this trail could become unsustainable as it is steep and follows a direct fall line path on thin soils. It also lacks the adequate signage to ensure a positive experience.

The **Nature Trail at the Summit** is approximately a quarter mile one-way distance from the top of the Whiteface Veterans' Memorial Highway to the summit of Whiteface Mountain. This trail provides easy access to premier views of the surrounding area and is generally in good condition.

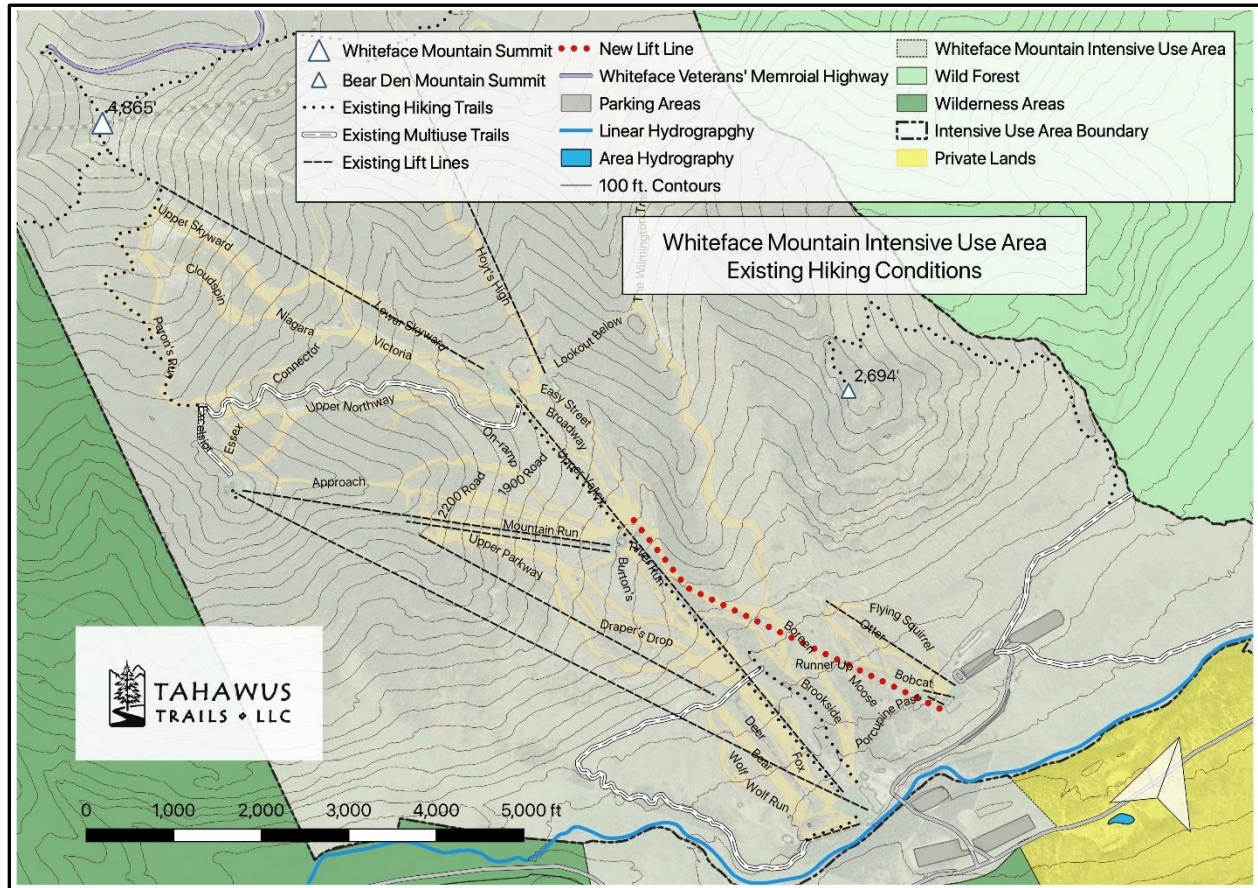
Top of the Gondola to the Base uses the Excelsior Ski Trail to get to the top of Face Lift and then hikers follow the line of Face Lift. There are no trail markers to delineate the route. The alignment is steep with loose footing, and with increased use it can become unsustainable.

The **Bear Den Mountain Trail** shortly follows the Upper Flume Connector trail before it steeply climbs to the summit of Bear Den Mountain. From the Upper Flume Connector to the summit, much of the trail is eroded as it is steep and follows a direct fall line path with no effective erosion control measures.

The **Flume Connector Trails** connects users to the adjacent Wilmington Wild Forest. This is a popular option for bikers using the Flume Trails network. These trails show signs of impact due to high use and are in need of drainage improvements. The Lower Connector Trail is steep and challenging as it enters the lower Bear Den lot.

The **Whiteface Landing Trail** connects hikers to the summit of Whiteface Mountain from the adjacent Mackenzie Wilderness Area. Parts of this popular trail have become eroded as it is steep and follows a direct fall line path with minimal erosion control measures.

The Wilmington Trail connects hikers to the summit of Whiteface Mountain from the adjacent Wilmington Wild Forest. This popular trail is also used to access Esther Mountain, another one of the Adirondack 46 High Peaks. Parts of this popular trail have become eroded as it is steep and follows a direct fall line path with minimal erosion control measures.



Recommended Improvements to the Existing Hiking Trails

Trail Descriptions (letters and numbers correspond to map labels)

These trails mostly use existing alpine ski trails and service roads. Trail signage would help improve the overall experience of using these routes.

A) Top of the Gondola to the Base Lodge – This 2.7 mile route provides less steep grades than the existing recommended hiking route. This route uses the ski trail Approach until using the bike trails Cliffs of Insanity and Freedom to descend to the ski trails Excelsior and Easy Street to Legacy Lodge. Then, Boreen Loop and Boreen Ski Trail to Valve House Road and the Stag Brook Falls Trail.

B) Bear Den Mountain Extension – This 0.2 mile extension is an existing herd path that should be an add-on to the existing Bear Den Mountain Trail. It should be formalized with signage and corridor side cutting. With increased use it could become unsustainable without tread hardening in the form of steps and erosion control dips.

C) Little Whiteface Summit Path – This 0.1 mile trail is an existing herd path that partially circumnavigates the summit of Little Whiteface Mountain. To formalize the trail in this area stone cribbing on the downslope, benching where possible and 2-3 wooden ladders are recommended. Clear directional signage is critical here.

23) Legacy Lodge to the New Bear Den Trail – Designating this 0.5 mile existing alpine ski corridor as multiuse would connect Legacy Lodge to the proposed new Bear Den Mountain Trail. It uses the ski trails Boreen Loop and Boreen to connect to Burma Road where it would be co-aligned with the new proposed mountain bike trails.

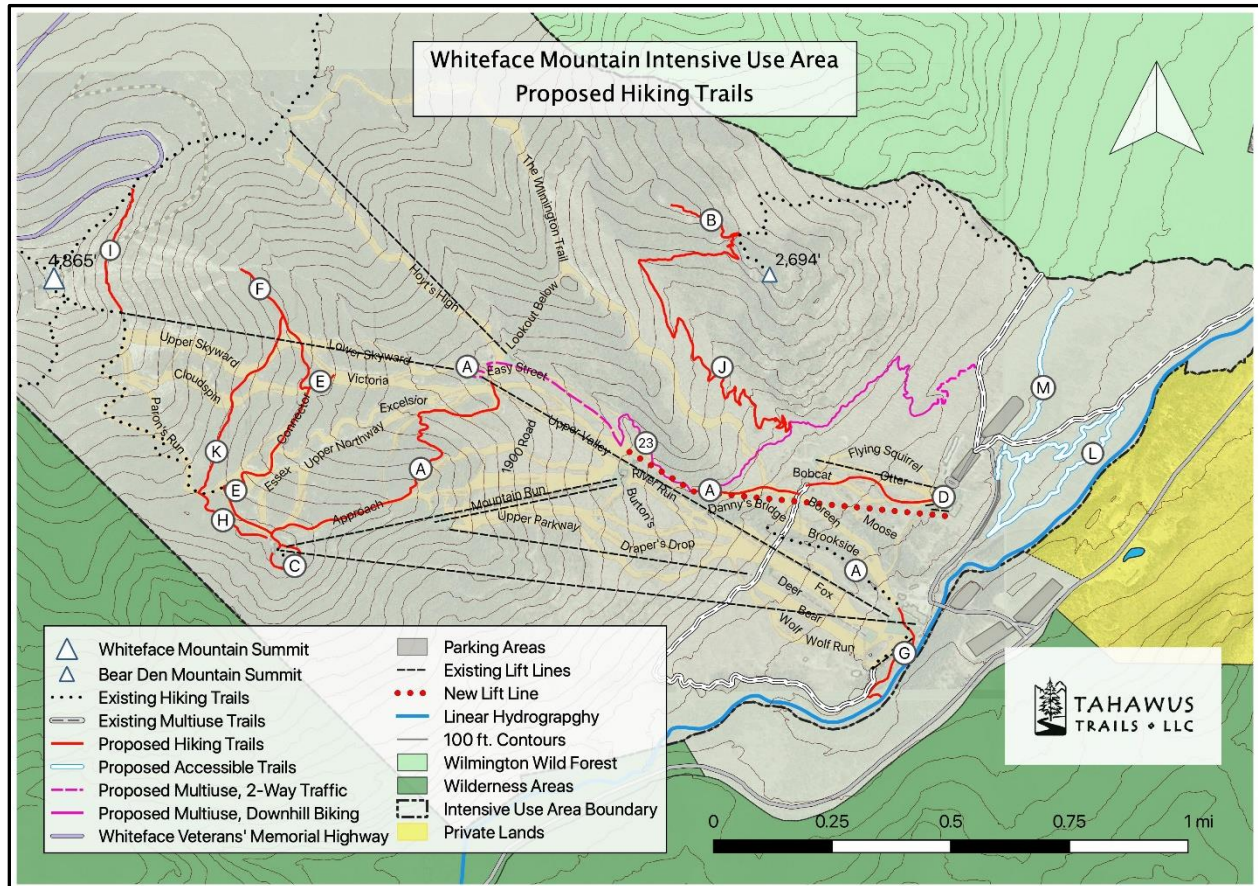
D) Valve House Rd. to Bear Den Lodge – Designating this 0.5 mile existing alpine ski corridor as a hiking route would help connect Stag Brook Falls Trail and Valve House Road to Bear Den Lodge using the existing ski trails: Bobcat and Bobcat Chute.

E) Champlain Valley Trail – Designating this 0.65 mile existing alpine ski corridor as a hiking route provides grand views of the Champlain Valley, extending into Vermont. This route uses the existing ski trails Excelsior and Connector to access the top of the ski trail Victoria.

F) Slide-Out – Designating this 0.45 mile existing alpine ski corridor as a hiking route enhances access to the bottom of the slides. From the top of the ski trail Victoria follow the ski trails Glen and Slide-Out to the destination.

Proposed New Hiking Trails

MILES		
NEW TRAILS PROPOSED (TOTAL)		4.4 miles
NEW TRAILS ABOVE 2,800 Ft		1.65 miles



Trail Descriptions (letters and numbers correspond to map labels)

G) West Branch Nature Trail Extension - This is a 0.25 mile extension that replaces walking along the Mixing Bowl lift line with a hiking trail along the West Branch of the Ausable River. One unique natural feature of this option access to a viewing area of a 30' cascade-waterfall in the river. Construction would entail benching in an open Hemlock forest and up to fifteen stone steps.

H) Little Whiteface Mountain Ridge Trail – This 0.25 mile trail alignment follows the northwest ridge of Little Whiteface Mountain and gradually proceeds until meeting the ski trail Paron's Run. From here, access is more easily gained to the summit of Whiteface Mountain. It would replace walking on ski trails with being in the woods, eliminates an unnecessary descent and ascent, and would provide views toward Lake Placid and the southwest. Construction would entail benching through dense Balsam Fir and Spruce stands and possible bog bridging to minimize wet areas disturbance in sections.

I) Top of Summit Quad to the Summit – This 0.3 mile trail would leave from the top of the Summit Quad and traverses north until meeting The Wilmington Trail hiking trail which takes users to the summit. It would replace a steep unsustainable alignment with a gradual contour trail and many opportunities for views. Construction would entail benching and cribbing through the dense krummholz boreal forest.

J) New Bear Den Mountain Trail – This 2.4 mile new trail alignment would bring users from Bear Den Lodge to the summit of Bear Den Mountain and thus create an interesting loop option for Bear Den Mountain. After leaving the Upper Connector Trail the trail proceeds through the areas northeast of the ski trails Flying Squirrel and The Wilmington Trail to the col on Bear Den Mountain. This route passes through a variety of terrain and includes many natural unique features such as glacial erratics and vistas. Construction would entail benching through open hardwood and dense coniferous forests as well as stone cribbing at times and up to 50 stone stairs.

K) Paron's Run to the Bottom of The Slides – This 0.7 mile trail would be a combination of new trail construction and existing ski trails. The new trail section is 0.2 miles and would connect the ski trails Paron's Run to Niagara through the forest. From here users would travel along the existing ski trails: The Switchbacks, Lower Crossover Loop and Slide-out for 0.5 miles until reaching their destination. This could be combined with the Champlain Valley Trail to make a loop. Construction of the new trail segment would entail a mix of full bench trail construction and stone cribbing through open-mixed coniferous forest. Bedrock is present at times therefore likely requiring pinning of crib walls.

L) West Branch Ausable River Accessible Trail – This 1.25 mile Accessible loop trail designed according the Access Board's 2013 Federal Trail Accessibility Guidelines and NYs DEC's guidance documents is proposed to leave from the water plant and meander down to the West Branch Ausable River. From there it parallels the river and eventually provides the option to either connect to the lower part of trail (20) or loop back and connect near the water plant. This loop can help alleviate some of the steep climbing that is found on the Lower Wilmington Connector (20).

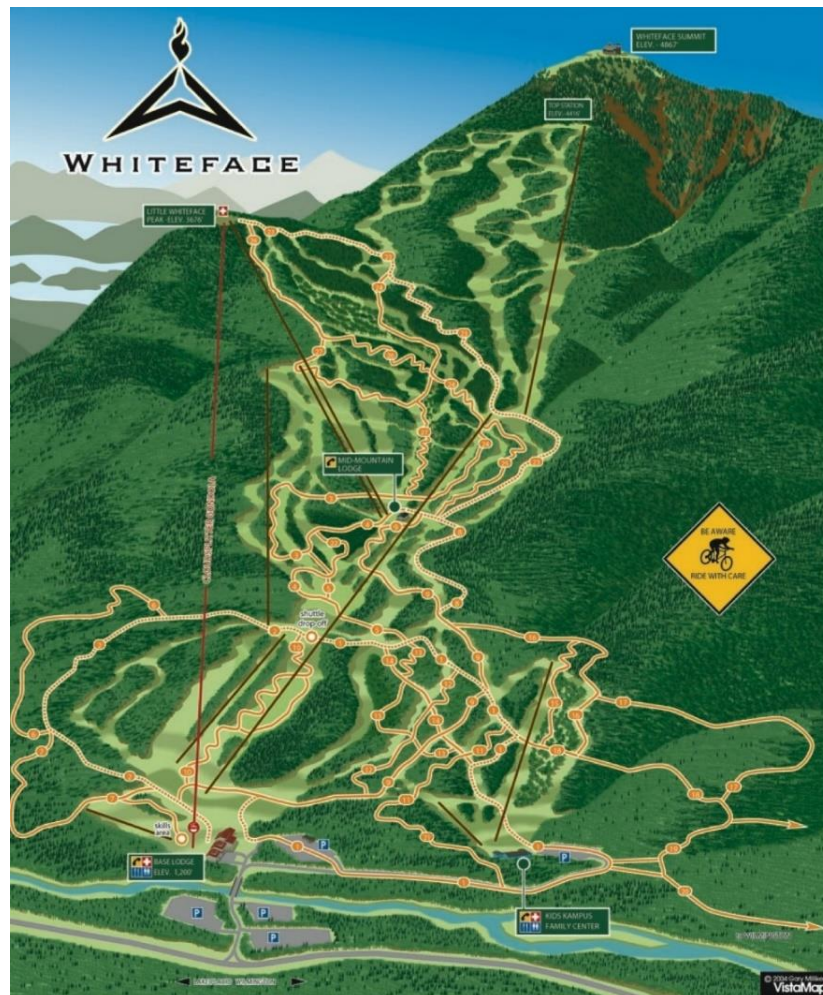
M) Accessible Trail to Eastern Drainage - A 0.5 mile Accessible trail designed according the Access Board's 2013 Federal Trail Accessibility Guidelines and NYs DEC's guidance documents is proposed to leave from the water plant and traverse to the eastern side of the unit to an interesting rock formation and small waterfall / cascade. This trail would share a start with the West Branch Ausable River Accessible Trail and shortly after junction off.

PART III – Mountain Bike Trails

Existing Mountain Bike Trails, Conditions and Recommendations

There are twenty-seven designated mountain bike trails in the intensive use unit as advertised in the most recent trail map used by Whiteface. These trails include active service roads, ski trails, low angle multi- use trails, steep, rocky terrain trails and numerous man-made skills features. The conditions of the trails are generally degraded, ranging from minor erosion that can be addressed with basic drainage features to major erosion that leaves deep trenches down the mountain and creates an unsafe and unpleasant experience for most riders.

On the lower mountain, drainage features and minor re-alignments will improve the trails to a point of sustainability. Higher up the mountain, more intensive work needs to be done to create sustainable trails. Due to steep slopes, thin soils, and challenging terrain on above the top of the The Face Lift, we are recommending that bikers do not use the Gondola , except for extreme biking events and then only occasionally. All man-made features on the mountain, including jumps, berms, wooden features and stone work, should be assessed for structural integrity and safe design.



Following is a list of the existing trails, the general condition that each one is in and our recommendations for closing, repurposing or improving them.

- (1) **Magic Bus Road-** This is a service road that circles from the Base Lodge to the Bear Den Lodge. It crosses numerous ski trails and winds through secluded woods on the South side of the Ski Area. It also passes through two large maintenance areas which may detract from the natural experience and needs clear signage to prevent bikers from wandering from the road. The grades are mellow to moderate and the surface is generally maintained for truck traffic.
Recommendation- continue using this trail.
- (2) **South East Shore-** This single-track style trail descends through secluded forest and is host to numerous man-made wooden features. While this trail travels down ideal terrain and soils, it follows a generally fall-line path that it likely to become more eroded with increased traffic. The wooden features are in disrepair and should be blocked off or removed. *Recommendation-* See South East Shore (p) in Proposed Intermediate Multi-Direction trails.
- (3) **Slickrock-** This trail stays generally on ski trails and under chairlifts and offers a unique riding experience on granite bedrock. It has eroded to deep trenches in a limited number of spots due to fall-line alignment. With minor realignment and improved drainage, the erosion can be effectively stopped. The wooden features should be assessed for safety. *Recommendation:* Re-align. See Slickrock (q) in Proposed Advanced downhill only trails.
- (4) **The Fire Swamp-** This trail stays exclusively on open ski trails and travels from the Legacy Lodge to the end of Burton's Cutoff (ski trail). The condition of this trail relies exclusively on the condition of the service roads and ski trails that it follows. *Recommendation-* Abandon and Close, proposed trails will offer better alternative routes.
- (5) **The Judge-** Single track style trail that starts in a narrow strip of woods between Lower Valley and Drapper's drop. After crossing Tom Cat (ski trail) it becomes very steep with very sharp corners before crossing Lower Valley and dropping into the Stag Brook drainage. Although scenic, the Stag Brook crossing has no anchors to hold soil on the banks and is very erosion prone. Because of the distance between stable soils on either side of the stream, a simple bridge is not an option without anchoring abutments to the bedrock. The wooden features near the top of the trail should be assessed for safety. *Recommendation-* The upper section of this trail should be improved, see Slickrock (r) in proposed advanced downhill only trails. The lower section should be closed.
- (6) **Ausable Loop-** This single-track style trail is multi-use, sharing alignment with the West Branch Nature Trail. Minor drainage solutions and realignments will alleviate erosion issues.
Recommendation- Keep this trail, improve signage and drainage.

- (7) River Run-** This single-track style trail is multi-use, sharing alignment with the West Branch Nature Trail. Minor drainage solutions and realignments will alleviate erosion issues here. *Recommendation-* Keep this trail.
- (8) Papa Bear-** Leaves the Magic Bus Service Road and descends beneath the Bear Chairlift with numerous switchbacks then crosses the Bear ski trail. Although no erosion issues are present, standard drainage solutions should be implemented to help the trail hold up to continued and increasing traffic. *Recommendation-* Keep this trail.
- (9) Brakeless-** This trail leaves Magic Bus Road and descends straight down Moose (ski trail) before connecting to the Porcupine Pass ski trail and branching to either the Base Lodge of Bear Den Lodge. The condition of the trail relies exclusively on the condition of the service roads and ski trails that it follows. *Recommendation-* Discontinue use of this trail. New proposed trails offer better alternative options.
- (10) True Blue-** This trail leaves the Magic Bus Road and descends to the base lodge. The upper portion was built with machines and imported soils to create a flow style trail with banked turns and jumps. The grades on this trail are steeper than we would recommend for this style of trail, which results in less “flow”, erosion of the tread surface, and dangerous conditions. Additionally, this trail is adjacent to the Stag Brook which increases the risk of sediment from disturbed reaching the water source. With slight realignments and downsizing of the features, the trail could be made more sustainable, safer and more aligned with the multi-direction/ trail bike nature of this side of the mountain. Storm water protection measures should be used with any construction happening on the upper portion of this trail. *Recommendation-* Given its location relative to the new lift service and the investment required to improve the trail, we do not recommend the improvements be made. If lift service is provide to and from Base Lodge, then we recommend continued use of this trail.
- (11) Balay Way-** Single-track style trail leaving from Magic Bus Road. Minor drainage solutions and realignments will alleviate erosion issues here. *Recommendation-* Repurpose. See “New Blue Technical (n)” in proposed intermediate downhill only trails.
- (12) Opiate-** Single-track style trail leaving from Magic Bus Road and ending on Brakeless. Minor drainage solutions and realignments could alleviate erosion issues here. Wooden features should be assessed for safety. *Recommendation-* Keep and repurpose. See “Center Advanced (t)” in proposed advanced downhill only trails.
- (13) Seek and Destroy-** Single track style trail leaving from Magic Bus Road and connecting to Opiate. Minor drainage solutions and realignments, specifically extending switchbacks, could alleviate erosion issues here. Wooden features should be assessed for safety. *Recommendation-* Keep and repurpose. See “Seek and Destroy (m)” in proposed intermediate downhill only trails.
- (14) Mama Bear-** This trail leaves the Magic Bus Road and descends on Wolf/ Wolf Run (ski trails). The ski trails have numerous wet areas that detract from the riding experience and create erosion

issues. *Recommendation-* This trail should be closed or used in parts as options off the new “Base to Valvehouse (d)” multi direction trail.

- (15) North East Shore-** This trail is a mix of single-track and “North-Shore” style riding. (North Shore refers to the North shore of Vancouver Island where elevated, often skinny and challenging, wooden features were popularized for riding) The numerous wooden features, including a 84’ long, multi section, teeter-totter, are a unique attraction for riding but are currently in various states of disrepair. All features should be removed and replaced completely. Minor drainage solutions and realignments could lengthen the trail and alleviate erosion issues. *Recommendation-* Keep it. See “Northeast Shore (k)” in proposed intermediate downhill only trails.
- (16) Dazed-** This trail follows the Flying Squirrel ski trail. It neither adds to or detracts from the trail network and fittingly was labeled but not drawn into the trail map. *Recommendation-* Discontinue use of this trail. New proposed trails offer better alternative options in this area.
- (17) Confused-** This trail follows an old woods road and traverses toward the connections with Wilmington Wild Forest before branching into a loop. The trail lives up to its name with no signage, making the loop a confusing series of intersections. Minor drainage solutions and realignments could alleviate erosion issues and make a more comprehensive trail. *Recommendation-* Close and abandon. New proposed trails offer better alternative options in this area.
- (18) Rodents of Unusually Large Size-** This trail follows an old woods road and joins the Upper Wilmington Connector to the Wilmington Wild Forest. Minor drainage solutions and realignments could alleviate erosion issues and muddy sections. *Recommendation-* New proposed trails offer better alternative options in this area.
- (19) Upper Wilmington Connector-** This trail leaves from the upper edge of the Bear Den parking lot and climbs/ traverses to the North until leaving the Intensive Use parcel and continuing on the Wilmington Wild Forest. The trail is heavily trafficked by hikers, bikers, snowshoers and xc skiers accessing Bear Den Mountain, the Flume Knob and the Wilmington Wild Forest Trail system. The overall alignment of the trail is appropriate but heavy use has led to a widened trail and social paths as trail users try to navigate muddy areas and stream crossings. Various drainage solutions should be implemented to alleviate muddy issues and trail spread. Minor realignments would also be helpful with environmental sustainability and to improve the user experience. Small wooden bridges or boardwalks may be necessary. *Recommendation-* Make necessary improvements and keep this trail.
- (20) Lower Wilmington Connector-** This trail leaves from the lower edge of the Bear Den Parking Lot and descends/ traverses to the NE, toward the AuSable River, until leaving the Intensive Use parcel and continuing on the Wilmington Wild Forest. The trail is heavily trafficked by hikers, bikers, snowshoers and xc skiers accessing the Wilmington Wild Forest trail system. The alignment is steep due to wetlands at the bottom and parking lots at the top. The tread is relatively well drained and hardened and should only need seasonal maintenance to maintain. *Recommendation-* Keep this trail

with minor realignments incorporating changes to the Northeast Beginner Trails (e) in the New Proposed Trails section below.

(21) Rolling Beauty- Unable to find this trail on a map or in person. Cannot recommend that it stays open.

(22) Fearless- This trail leaves The Fire Swamp (bike trail) and descends between Lower Valley and Lower Thruway (ski trails). It has numerous wet areas and is prone to erosion. There are numerous wooden features that should be removed. *Recommendation-* Close and Abandon. New proposed trails offer better alternative options in this area.

(23) Drifting Terror- is an active service road from the top of the Gondola to the mountain. We have recommended that the upper section be closed to bike traffic. The lower section of this trail, from Legacy Lodge to the mid- station off-loading of the new lift and Berma Road, can remain open to mountain bike traffic. Specifically, this section follows Boreen Loop and a small section of Boreen itself. We recommend adding low and wide banked turns on the edge of the ski trails to help lessen the grade of the descent and create a more fun, mountain bike specific experience. Below the Mid station unloading of the new lift, the Boreen ski trail gets steep again. We do not recommend that this section stay open to mountain bikes. Note that parts of Drifting Terror have been proposed to be used as hiking alignments. See proposed Hiking Trails.

(24) Freedom- The upper section of this trail leaves Drifting Terror and descends through the 10th Mountain Division Glades (ski trail). This section of trail is extremely eroded and is continuing to erode even without bike traffic as it has become a seasonal stream. *Recommendation-* The upper section of this trail should be closed to bike traffic and have water bars installed to break up the water flow and help with the restoration of the site. *Note* that a more sustainable trail could be built in this area in the future as part of a long, Little Whiteface to Base run.

The lower section of this trail begins near the top of the Face Lift and descends between Upper Valley and Broadway (ski trails). Moderate drainage solutions would alleviate areas of erosion. Wooden features should be assessed for safety. *Recommendation-* With improvements, this trail could serve as a pedal accessed descent. See “Freedom (u)” in proposed advanced pedal access trails.

(25) Inconceivable- This trail begins near the top of the Face Lift and descends between Broadway and Easy Street (ski trails). Minor drainage improvements would alleviate erosion on this trail. Wooden features should be assessed for safety. With improvements, this trail could serve as pedal accessed descent. See “New Inconceivable (o)” in proposed intermediate pedal access trails.

(26) Cliffs of Insanity- This trail leaves Approach (ski trail) and descends next to the new Slide View Glades. It is very steep, with very sharp corners, areas of exposure and significant erosion due to its

alignment and lack of drainage features. We recommend that this trail be closed to bikes but could be opened to hikers. See proposed hiking trail “Top of Gondola to Base”.

(27) Evil Empire- This trail leaves from the top of the Gondola, descends down Approach (ski trail) and crosses Mountain Run (ski trail). It then follows the 2200 Road (ski trail) and enters the woods at the top of the High Country Glades. It stays in these woods until they end just above the Legacy Lodge. The upper section of this trail that is on the open ski trails is a mixture of bed rock and thin soils on top of the bed rock. Because of the steep pitch and this soil, this area is extremely erosion prone. *Recommendation-* This trail should be closed to daily bike traffic. In the case of a downhill race such as a World Cup event, this trail could serve as the race course because of its scenic, unique nature and the extreme challenge that it offers.

The lower section of this trail, below the 1900 Road (ski trail), could be used as a pedal accessed descent with moderate to in depth drainage solutions and realignments. See “Evil Empire (v)” in proposed advanced pedal access trails.

Proposed Mountain Bike Trails

Following are trail descriptions for the proposed trail system as seen on the new map. While the majority of the proposed trails are downhill, optimally lift served experiences, there are other unique zones that expand the offerings of the bike park.

The *multi-direction* trails offer a more traditional cross-country trail riding experience. These will tie into the lift served trails in numerous places and help make connections to areas the new lift does not connect.. They are concentrated on the outer edges of the Unit, specifically South of the Stag Brook Nature Trail and northeast of the Bear Den base area.

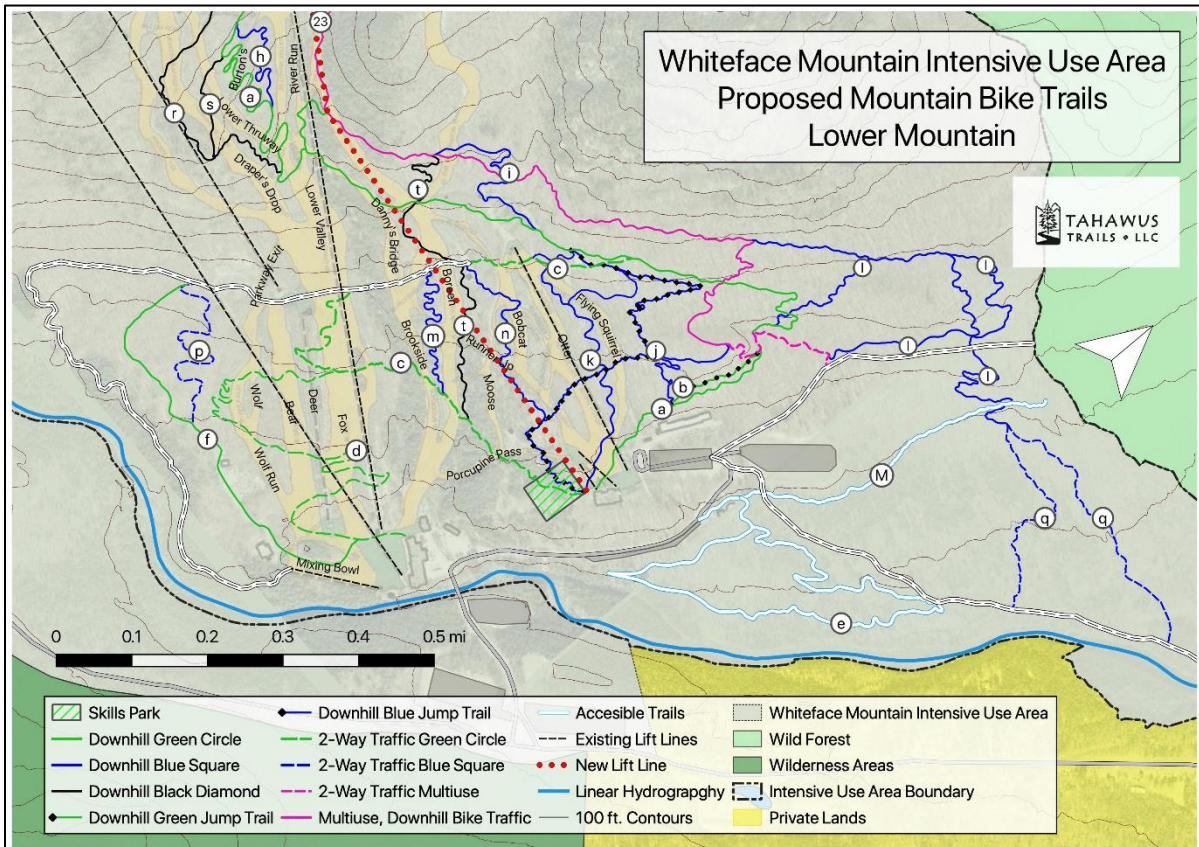
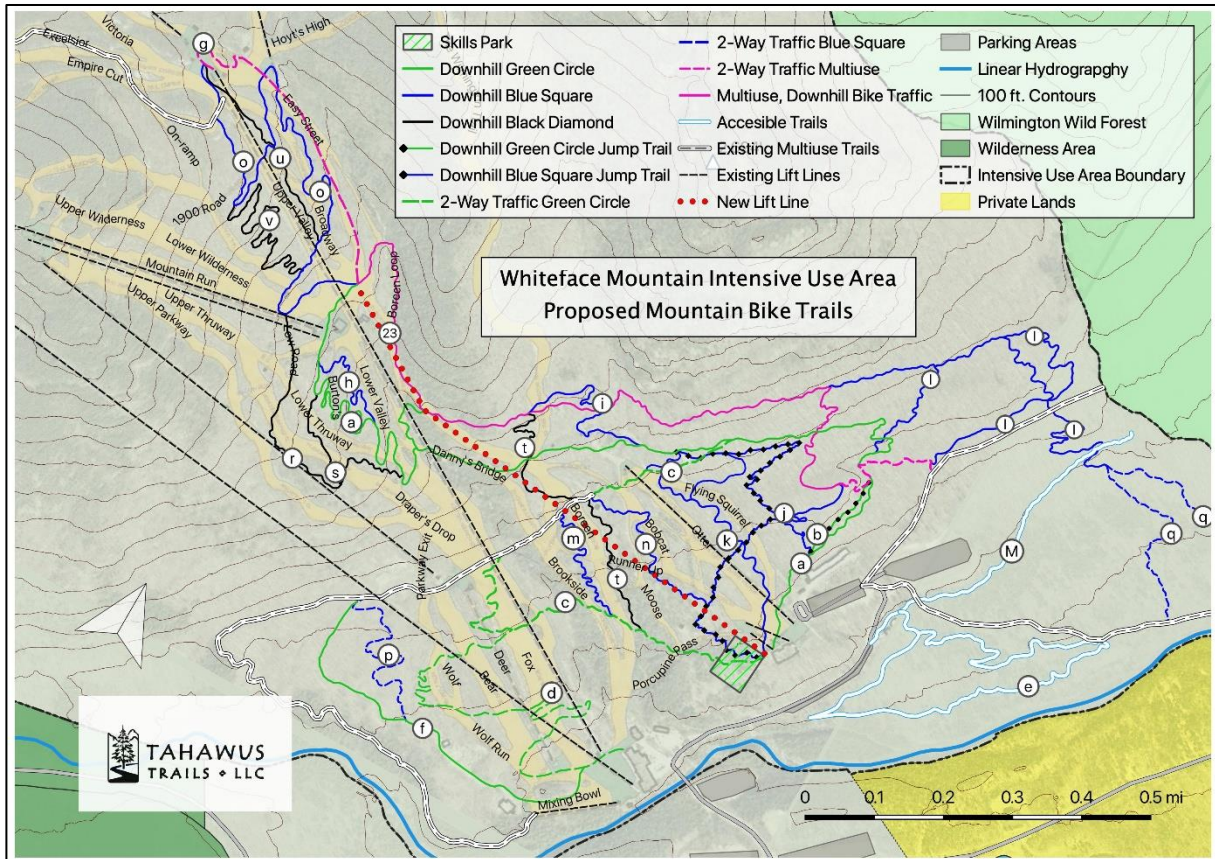
The *pedal access* trails are located above the Legacy Lodge and below the top of the Face Lift. This unique set of trails caters to trail riders and e-bikers who are willing to ride uphill beyond the chairlift. The trails that descend from the pedal access point are downhill only. The riding experience is that of downhill riding, not cross country.

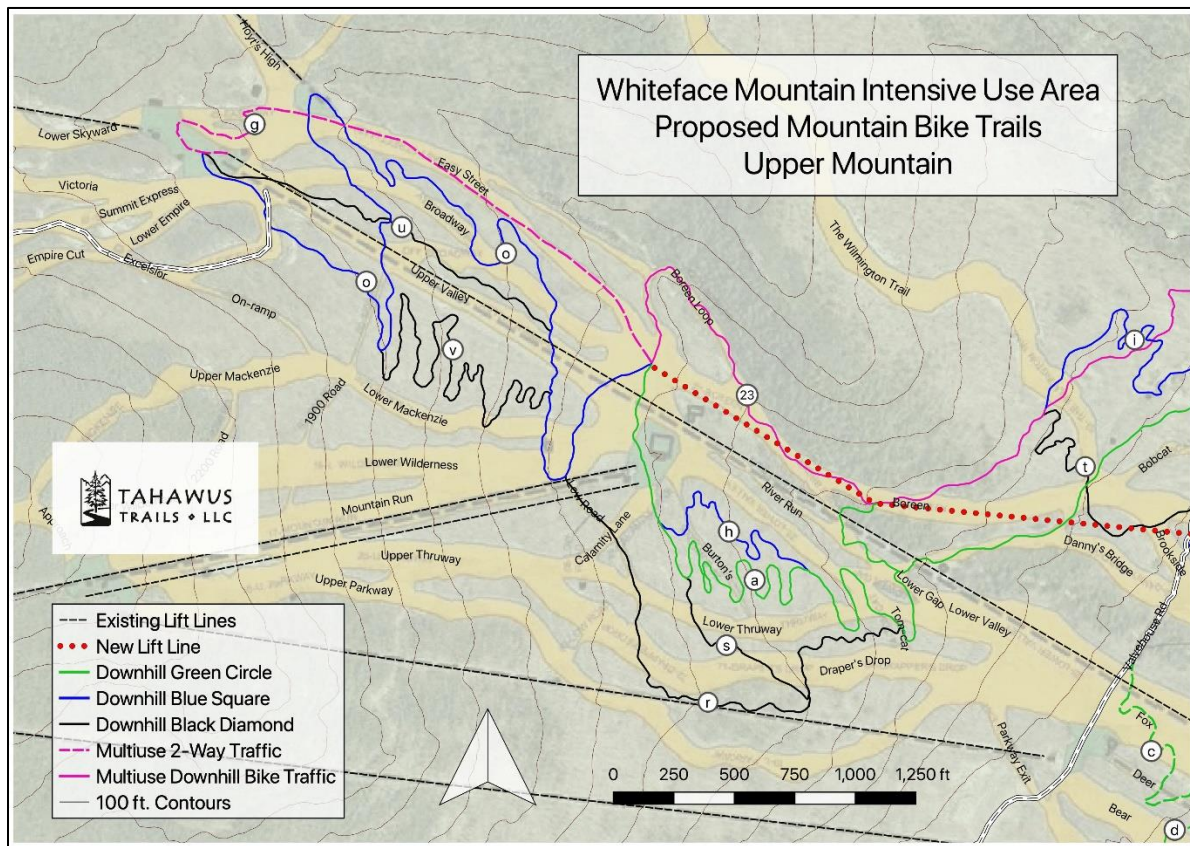
Downhill trails are optimized for riding from the top down. It is assumed that when the lifts are operating, riders will take the lifts up and ride down these trails - which are purpose designed for riding downhill. In most cases, where specified, a single direction is recommended when the lifts are open and uphill travel is not recommended. The most difficult “black” trails would be similar to traditional “downhill” experiences found at most lift serviced bike parks. They will not be straight down the mountain except for short segments. In general, the black trails will also traverse the slopes to encourage positive drainage. Rock gardens on the black trails might be a little more difficult to bypass and are more likely to be a place where armor is prudent. The green and blue trails will be more analogous to downhill flow trails than traditional downhill experiences.

The dual direction trails are more traditional cross-country trail riding experiences. Although they will tie into the lift served trails in numerous places, they can be used independent of the lifts whether or not the lifts are operating. These trails are concentrated on the eastern half of the unit below the Bear Den mountain ledges.

Cross country trails typically provide a varied experience with more pedalling required. On cross country trail, riders are less likely to get in over their heads in terms of challenge and terrain. The trail access, length, and designed features along the route can qualify riders so more challenging features are found the more remote the rider travels. All technical features on easiest and more difficult trails should have rollable options or bypassing alternate lines.

In addition to the existing and new trails, a skill development park and learning area (Skills Park) should be established near the Bear Den Lodge, future rental facilities, and base of the new lift. This area allows for riders to get comfortable with rental bikes, take lessons, and practice progressively more challenging features in a safe environment. Skills parks typically include rollers, drop and jumps with safe landing zones, balance features, “rock garden” features, tabletops and berms. The most optimal location for the skills park at Whiteface is in the woods south of the new lift and Bear Den Lodge.





Summary of Bike and Shared Use Trails by Difficulty Level

Difficulty Level	MILES	
Easiest Trails (green)		6.25 miles
More Difficult Trails (blue)		10.55 miles
Most Difficult Trails (black)		2.7 miles
TOTALS		19.5 miles

All mountain bike trail development will occur below 2,800 foot in elevation.

Easiest trails

Downhill Only - Easiest

- (a) **Green Flow-** One of the keystone trails of the proposed bike park, this trail will offer a safe and fun downhill experience to riders who are new to lift served bike parks. Maintaining mellow grades throughout and building a wide and generally smooth tread with clear sight lines are key characteristics of this trail. This trail leaves the Legacy Lodge and replaces The Fire Swamp (4) and Fearless (22) in the woods below Burtons Cutoff (ski trail). Switchbacks across the bottom of

Lower Thruway to the elevation of Tom Cat (ski trail) will help lessen drop in elevation as the trail reaches Danny's Bridge. At this point, the trail merges with the mid-station access which uses the hillside below Boreen and crosses Ladies Bridge. The trail will make sweeping turns across Danny's Bridge (ski trail) before entering the woods above Boreen at the base of the Wilmington Trail (ski trail). This trail will use a shared crossing of the stream at the site where the large culvert washed out above the Falcon Flyer. The trail continues through the woods to the north of the ski area using parts of the Confused (17) and Rodents Of Unusually Large Size (18) trails and returns to the Bear Den base area on the hill side directly above the maintenance building.

- (b) Green Jump-** This trail will offer the easiest jump trail option for riders to move beyond the rollers and berms of the Green Flow trail without the steeper grades of the intermediate trails. It will run parallel to the bottom section of the Green Flow making it a logical next step for riders who are comfortable riding the Green Flow and are ready to progress to the next step.

Multi-directional - Easiest

- (c) Top of Falcon Flyer to Bear Den Base-** This trail is an important part of the bike park as it sets the lower limit for lift served riding without having to climb to get back to the chair lift. Without this limit established, downhill only trails on the "mainside" of the ski area must stop descending at Valvehouse Road or continue to the Base Lodge area and climb back the active chairlift. The upper section of this proposed trail uses the Valvehouse Road service road to traverse the ski trails from Bear Den to Lower Valley. From Lower Valley, the trail begins descending at a mellow grade that is ideal for beginner downhillers and uphill traffic wanting to access multi direction trails on the South side of the ski area. This trail will cross both major drainages at the existing bridges on the Stag Brook Nature Trail and near the bottom of Opiate (12). Existing wooden features should be assessed for safety.
- (d) Base Lodge to Valvehouse-** This trail will serve as a climbing option for riders who end up at the Base Lodge and want to get back to Bear Den base area without climbing up the road. It crosses paths with Mamma Bear (14) and Papa Bear (8), using ski trails and some of the promising, wooded terrain to the South of Wolf Run.
- (e) Northeast Beginner Loop-** This 1.25 mile Accessible loop trail designed according to the Access Board's 2013 Federal Trail Accessibility Guidelines and NYs DEC's guidance documents is proposed to leave from the water plant and meander down to the West Branch Ausable River. From there it parallels the river and eventually provides the option to either connect to the lower part of trail (20) or loop back and connect near the water plant. This loop would alleviate the steep climbing that is found on the Lower Wilmington Connector (20).
- (f) Magic Bus Road-** This road can stay open for bikers. Minor improvements can be made to improve the riding experience by adding trail features such as rollers and berms.
- (g) Pedal access above Legacy-** This trail will stay on the Easy Street ski trail as it climbs from the new Legacy Lodge to the top of the Face Lift. Switchbacks can be marked in the ski trail to give riders a gentler climbing option. Once the trail passes the bottom of the Lookout Chairlift, there is an option for a larger switchback around the only tree island in the area, again helping to

create a gentler climbing option. It can also be used as an easier descent from the top of the Face Lift. Efforts should be made to keep loose rocks out of the riding lines.

Intermediate trails

Downhill Only - Easiest

- (h) Upper Blue Flow-** This trail uses the same block of woods between Lower Valley and Lower Thruway as the green flow trail does but offers a slightly steeper and more advanced option. Larger berms and rollers will be the attraction of this trail with some optional jumps where applicable.
- (i) Lower Blue Flow-** This trail starts on the service road to the North of Boreen known as Berma Road. It crosses the Wilmington Trail and the Sugar Valley Glades and will meet the green flow trail for the shared crossing of the Bear Den drainage. Larger berms and rollers will be the attraction of this trail with some optional jumps where applicable. There is also a dry gully on this alignment where a few halfpipe or “Sidewinder” style turns will be made.
- (j) Blue Jump-** Intermediate jump trails are usually a main attraction of any new bike park. This trail will leave the green flow shortly after the shared crossing. There are opportunities for many moderate sized jumps and some natural features along this alignment. Toward the bottom it crosses the ski trails to get back to the chair lift. Single jumps can be built in the tree line between ski trails to lengthen the jump trail experience.
- (k) Northeast Shore (15)-** This trail has historically been one of the defining parts of mountain biking at Whiteface because of the variety of technical wooden riding features that it has. Skinny bridges between rocks, steep rollovers and the long double teeter-totter are some of the notable features. Although the existing features are aging and are past their usable lifespan, we recommend maintaining the “North Shore” character and designing numerous new wooden features with progressive options for riders of different abilities.
- (l) Northern Singletrack Trails-** This series of trails explores cliff bands, waterfalls and beautiful hardwood forests. With some climbing and traversing needed to access these, they will be best suited for trail bike riders but are designed to be ridden downhill only. The opportunities for building here are great and will allow for a variety of trail character ranging from tight, technical single track to flowy trails with banked corners.
- (m) Seek and Destroy (13)-** With minor drainage improvements, realignments and assessment of wooden features, this trail offers a great intermediate riding option with lots of room for berms or other man-made features in the future. The trail leaves Magic Bus Road and ends on the multi-direction green trail that returns to the Bear Den base area.
- (n) New blue technical-** This trail shares some alignment with the old Balay Way (11) but is redesigned for the new chairlift location. Leaving from the Magic Bus Road, it stays mostly in the tree islands between Bobcat and Moose (ski trails).

Pedal Access Above Legacy - Intermediate

- (o) **New Inconceivable (25)**- The upper section of this trail is a completely new alignment that offers a less steep option than the head wall at the top of Easy Street. It traverses through ideal terrain before meeting Evil Empire (27) in the High Country Glades (ski trail). "ew Inconceivable then switches back to cross Upper Valley, Broadway and Easy Street, looping around the base of the Lookout Chairlift. Back into the woods between Easy Street and Boreen where there is room for flow style building. As the section of trees narrow, the trail will use some of Broadway (ski trail) to make turns and eventually traverse out across Lower Valley through the bottom of the High Country Glades.

Multi-directional - Intermediate

- (p) **Southeast Shore**- The terrain in this area is ideal for a cross country style bike trail with lots of small rolling hills and good soils. The new trail should share the same start and end point as the existing South East Shore (2). We recommend that the existing wooden features be removed and the trail be realigned to create a longer trail with rolling grades that can be ridden in either direction.
- (q) **River Loop**- This existing trail is a loop off of the Lower Wilmington Connector (20). The trail receives medium traffic from hikers and bikers. With minor drainage improvements this trail offers a great intermediate riding option. The proposed Northern Singletrack Trails (I) use this trail as the lower part of the alignment.

Advanced Trails

Downhill only – Advanced

- (r) **Slickrock (3)**- This existing trail features a unique opportunity to ride on long sections of exposed bedrock and has other sections of advanced technical riding. It begins with a moderate climb from the Legacy Lodge then begins descending near Lower Parkway (ski trail) and under the Freeway Lift. After crossing Lower Thruway (ski trail) our proposed alignment will follow The Judge (5) through the narrow strip of trees above Tom Cat (ski trail). The trail will then merge with the green flow/ upper blue flow before they descend to Danny's Bridge. The existing trails should have drainage improvements and minor realignments to manage drainage. All existing wooden features should be assessed for safety.
- (s) **To Slickrock**- This trail allows for access to the lower section of Slickrock (n) without having to climb to the start of the old Slickrock (3). It passes through rocky terrain that is conducive to advanced, technical riding.
- (t) **Center Advanced**- There are three sections to this trail. The upper section leaves the Berma service road and uses switchbacks and benching to descend through the woods between the Wilmington Trail and Boreen. These woods are well drained and have interesting rock features that can be incorporated into the trail. After crossing Boreen, the middle section of this trail descends in the tree island between Brookside and Boreen. This portion has water from numerous ski trail waterbars that will make any bike trail prone to erosion without significant drainage solutions. The Lower section of this trail crosses Boreen again and follows the existing bike trail, Opiate (12). This section only needs minor drainage solutions and realignments to

make it sustainable. Existing wooden features should be assessed for safety. This trail ends on the multi-direction green trail that returns to the Bear Den base area.

Pedal Access Above Legacy - Advanced

(u) Freedom (24)- This trail is the lower section of existing trail Freedom (24) and begins near the top of the Face Lift and descends between Upper Valley and Broadway. Moderate drainage solutions would alleviate areas of erosion especially at the top, immediately after entering the woods. Wooden features should be assessed for safety. With improvements, this trail could serve as pedal accessed descent.

(v) Evil Empire (27)- This is the lower section of Evil Empire (27). The opportunity for a trail here is excellent due to the open forest and minimal boulders. Moderate drainage solutions and realignments would make this trail less erosion prone and maintain the steep technical nature that it already has. There is the potential to lengthen the trail by extending the switchbacks significantly and creating a sustainable, more “flowy” advanced trail.

Summary of Stream and Wet Area Crossings

To the greatest extent possible streams and drainages are crossed on existing Alpine Ski Trail infrastructure. However, 11 additional major stream crossings are needed to develop the trails as proposed.

All stream crossings shall follow all NYS DEC guidance and shall avoid sedimentation of streams and fragmentation of stream ecosystems. In particular, all major stream crossings shall be clear span bridges with the crossing opening at least 1.25 times the *stream width*. Stream width shall be the average width (measured at 3 separate locations) as measured bank to bank at the ordinary high water level.

the *stream width*. Stream width shall be the average width (measured at 3 separate locations) as measured bank to bank at the ordinary high water level.

No disturbance to the stream bed will occur, all disturbance will occur above the ordinary high-water level. This includes for the construction of bridge abutments.

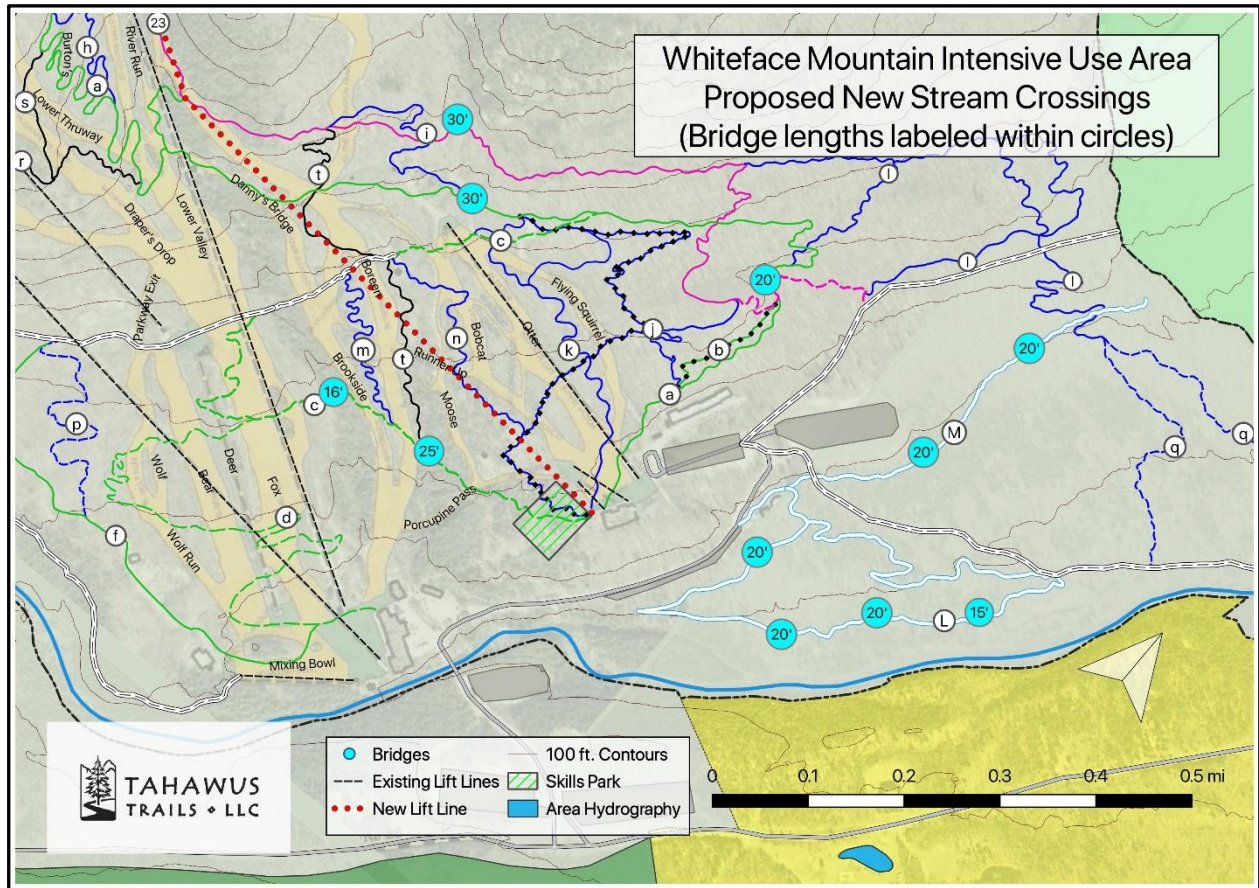
Minor drainages and seasonal streams (unclassified and un-mapped) are crossed either with stepping stones (for hiking trails), stone paved armored crossings, or culverts. If culverts are to be used, they must be appropriately sized and placed so as to prevent scouring, erosion, clogging, ponding, and shall be imbedded so the substrate and bedding is similar to the surround natural drainage.

A summary of the major drainages are listed below and shown on the following map:

1. **Cliffside Multi-use Trail “L” aka Northeast Single Track** - Drainage from Sugar Valley Glades— 30 foot bridge
2. **Green Downhill Trail “a” and Lower Blue Flow “i”**— Drainage from Sugar Valley Glades at existing washed out culvert – 30 foot bridge
3. **Dual-direction Trail “c” and Stag Brook Hiking Trail** – Stag Brook – 16 foot bridge replacement of existing bridge

4. **Dual-direction Trail “c”** – Minor Drainage between Boreen and Moose – 25 foot bridge, replacement of existing bridge
5. **Green Downhill Trail “a”** – Minor drainage east of Flying Squirrel – 20 foot bridge
6. **Accessible Trail to Eastern Drainage**– Below Bear Den Lot – 20 foot bridge
7. **Accessible Trail to Eastern Drainage**– Near eastern drainage – 20 foot bridge

8-11. **West Branch Ausable River Accessible Trail** - along trail loop – four bridges and boardwalks 3 @ 20 ft and 1 @ 15’



Summary of Tree Cutting

The estimated total number trees needed to be cut to develop this trail system is based on actual tree counts along randomly selected plots throughout the proposed trail system.

A total of 10 (ten) randomly selected 1/10th of an acre plots were used for the tree counts. The plot size was measured linearly along each chosen location for 544 feet assuming an 8 foot wide corridor on bike trails. The total tree tallies were then calculated by factoring these plots over the total trail system length.

These tallies are only estimates based on the plot samples taken and will vary from the actual tree cutting needs for construction.

Total Trees to be Removed for Entire Trail System (1" DBH and larger): 8,850

Total Trees to be Removed 1" to 3" DBH: 6,114

Total Trees to be Removed >3" DBH: 2,736

Average DBH of Trees to be Removed: 4 inches

Trees to be Removed by Species and DBH (inches) for Entire Trail System:

Species	American Beech	Red Maple	Sugar Maple	White Ash	Red Oak	Striped Maple	Paper Birch	Hemlock	Hop Hornbeam	Basswood	White Pine	Balsam Fir	Red Spruce
DBH Class													
1.0 to 3"	2125	46	1009	122	183	764	168	31	749	122	107	688	0
>3.0"	703	92	550	76	138	46	260	107	199	31	107	397	31
TOTALS	2828	138	1559	199	321	810	428	138	948	153	214	1085	31

TREE REMOVALS IN BICKNELL THRUSH HABITAT

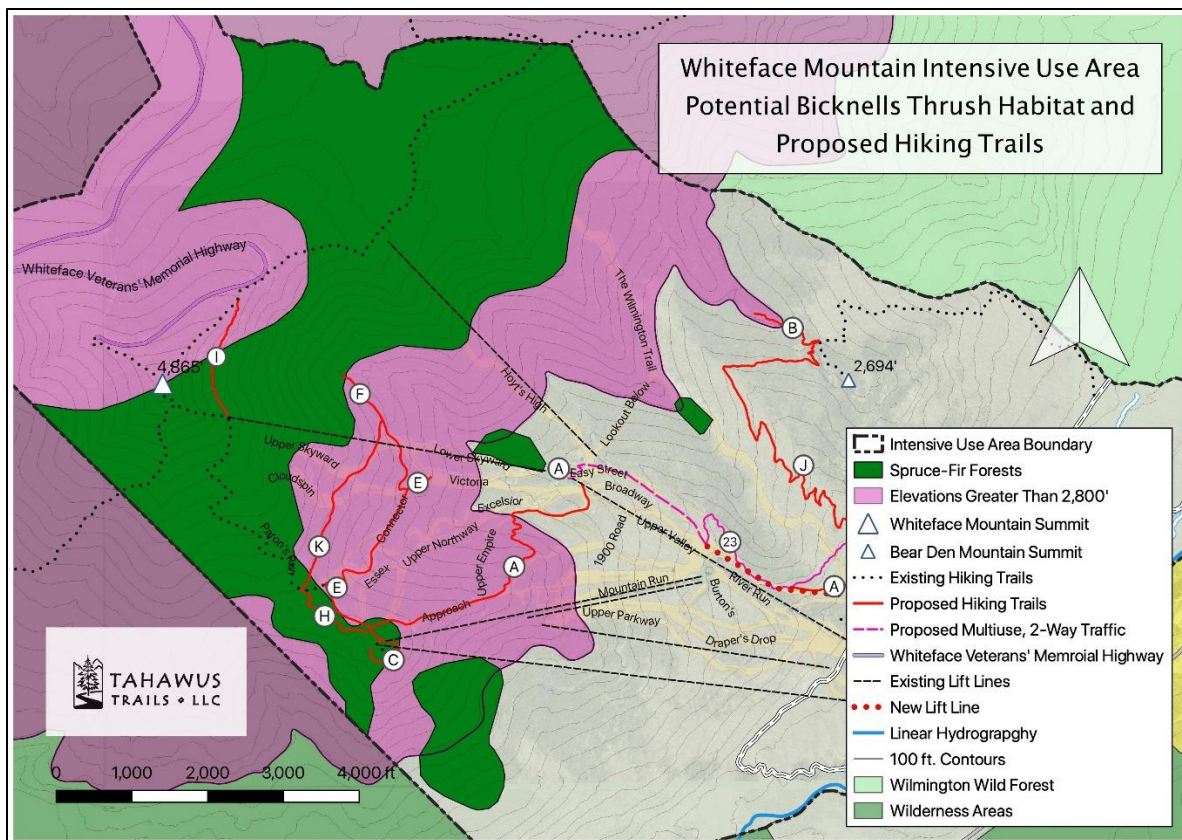
Total Estimated Trees to be Removed above 2,800 ft: 832

Estimated Trees 1" to 3" DBH to be Removed above 2,800 ft: 447

Estimated Trees >4" DBH to be Removed above 2,800 ft: 385

Estimated Trees to be Removed by Species and DBH (inches) above 2,800 ft:

SPECIES	Paper Birch	Balsam Fir	Red Spruce
DBH Class			
1.0" to 3.0"	53	394	0
>3.0"	140	228	17
TOTALS	192.5	621.25	17.5



TREE REMOVALS BY PHASE

PHASE ONE

Total Estimated Trees to be Removed in Phase 1	2,367
Estimated Trees 1" to 3" DBH to be Removed in Phase 1	1,626
Estimated Trees >3" DBH to be Removed in Phase 1	741

PHASE TWO

Total Estimated Trees to be Removed in Phase 2	1,499
Estimated Trees 1" to 3" DBH to be Removed in Phase 2	1,024
Estimated Trees >3" DBH to be Removed in Phase 2	475

PHASE THREE

Total Estimated Trees to be Removed in Phase 3	997
Estimated Trees 1" to 3" DBH to be Removed in Phase 3	321
Estimated Trees >3" DBH to be Removed in Phase 3	676

PHASE FOUR

Total Estimated Trees to be Removed in Phase 4	753
Estimated Trees 1" to 3" DBH to be Removed in Phase 4	507
Estimated Trees >3" DBH to be Removed in Phase 4	246

PHASE FIVE (Hiking and Pedestrian Trails, including all work above 2,800 ft)

Total Estimated Trees to be Removed in Phase 5	3,234
Estimated Trees 1" to 3" DBH to be Removed in Phase 5	2,290
Estimated Trees >3" DBH to be Removed in Phase 5	944