



**WATERVILLE
VALLEY RESORT**

Master Development Plan

November 2019

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Glossary of Terms and Acronyms

Comfortable Carrying Capacity (CCC) – The level of utilization that provides a pleasant experience without overburdening the infrastructure on a daily basis. CCC is a combination of the uphill hourly capacity of the lifts, the downhill capacity of the trail system and the total vertical rise of the lift system. Additional factors are the total amount of time spent in the lift line, on the lift itself and in the downhill descent. The **Average Aggregate CCC** calculation takes these external factors into account as it is derived by calculating the average of the trail CCC calculation and the lift CCC calculation.

DMDP – Draft Master Development Plan

EA – Environmental Assessment

Glades – A forest management prescription that is more intensive than tree skiing allowing for thinner stand by removing undergrowth, limbs and trees plus larger trees as needed to meet the perceived need.

MDP – Master Development Plan

NTS – Nordic Trail System

Pod – A planning term for a group of trails serviced by one or more lifts in a defined area.

Rider – Snowboarder

SUP – Special Use Permit

Tree Skiing – A forest management prescription that removes undergrowth, limbs, and trees under 4” diameter at breast height (DBH) but not all trees.

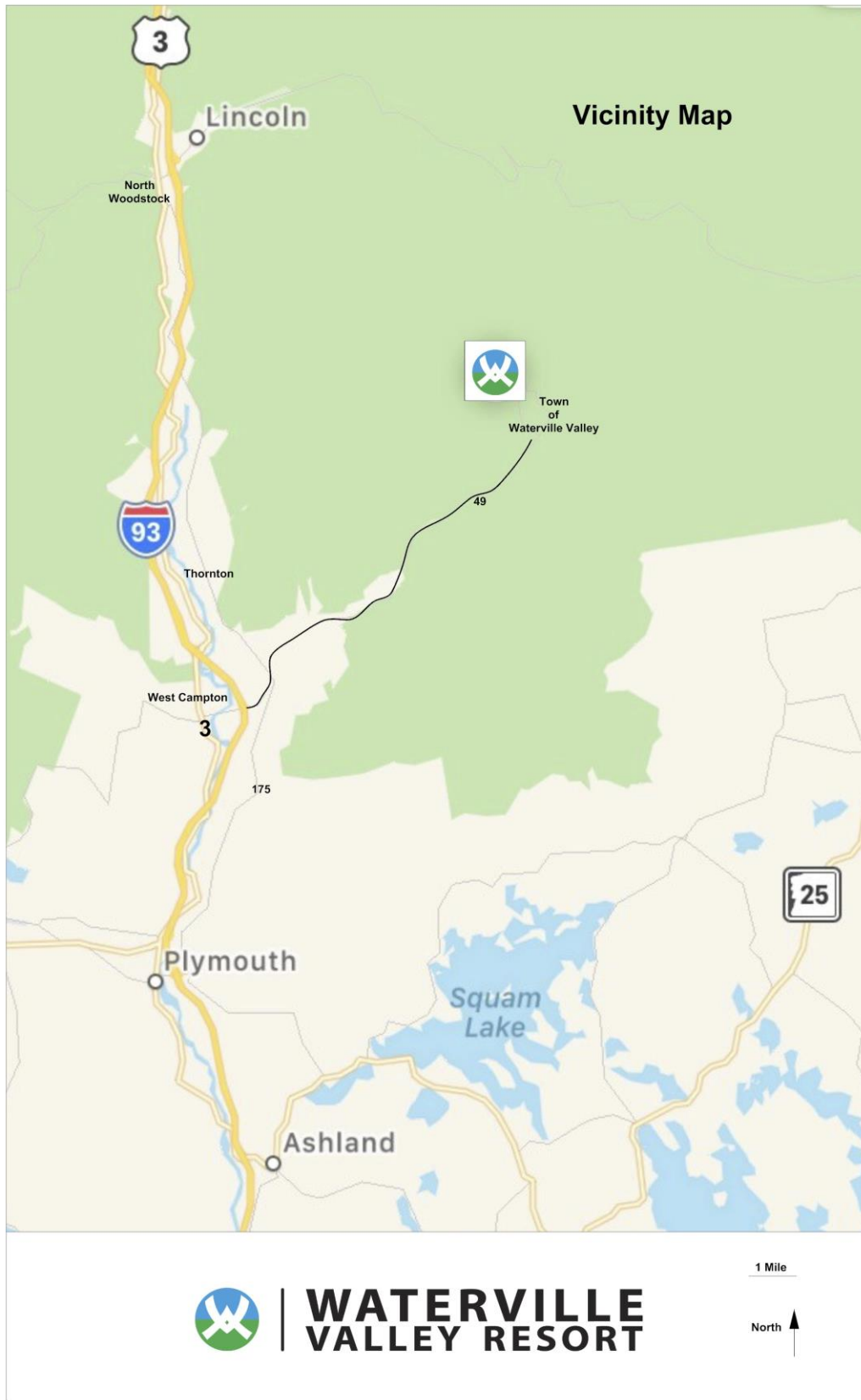
USDA – United States Department of Agriculture

USFS – United States Forest Service

VTF – Vertical Transport feet per hour

WMNF – White Mountain National Forest

WVR – Waterville Valley Resort



Introduction

The operations and assets of Waterville Valley Resort (WVR) are located on both private and public lands. Lands that are located on White Mountain National Forest (WMNF) are managed under a Special Use Permit (SUP) authorized by the US Forest Service (USFS).

This Master Development Plan (MDP) will provide WVR, the USFS, and other Stakeholders a development roadmap that the resort intends to follow for the next 10 years, assuming approvals for specific elements are received through subsequent submissions. This MDP provides an assessment of existing facilities and an overview of planned elements and improvements.

While the emphasis is on projects to be authorized under the SUP on USFS lands, some of the contemplated projects are also on private land. Transportation links and uphill capacity elements incorporated into the MDP are envisioned on both private and public lands. Projects entirely on private lands are not included in the scope of this document.

The MDP map calculations are generated by utilizing CAD mapping and differ from marketed numbers generated by other means.

USFS / WMNF Goals

The role of the WMNF is expressed through goals that align with the legal framework establishing the Forest and the social and ecological setting of the WMNF. These goals are described in the WMNF Forest Plan. The goals of the Forest Plan include managing to sustain a healthy forest and providing recreation and other opportunities, experiences, and benefits, some of which are not readily available elsewhere.

Recreation is identified in the Forest Plan as an accepted use of WMNF lands. Winter sports recreation lands are unique and are limited. The USFS is mandated through the Forest Plan to maintain and provide quality alpine skiing and related opportunities through partnerships with the private sector.

Management of these partnerships is accomplished through a SUP that recognizes the importance of the local economies, experiences and health benefits of recreation. The USFS manages the areas identified for operation and expansion in an accepted and required Master Development Plan (MDP). Special use requests are reviewed by the WMNF for compatibility with Forest Plan management prescriptions. Under these reviews, the proposed environmental values, economic feasibility and determination of social and economic benefits are considered and evaluated. WVR is an established winter sports recreational site and has been a partner with the USFS for over fifty years.

Master Development Plan (MDP) Intention, Process and Goals

This document will replace the existing and outdated MDP for WVR, which was submitted to the USFS in 1999. This 2019 MDP respects the original planning vision of Waterville Valley, history of the area, and the planning work of previous ownership. This document recognizes new technology, environmental regulation, and current guest experience expectations.

The MDP recognizes market trends, technological advances, phasing, projected visitor growth, and environmental considerations in creating a viable and profitable operation. The intention of this MDP is to project responsible expansion and growth over a 10 year period.

The MDP is a conceptual document developed by WVR with input from staff, public officials, the general public, and ski area design consultants.

After acceptance of the MDP implementing the MDP will begin with submittals of project proposals within the MDP to the US Forest Service for analysis and approval. Because acceptance of the MDP does not constitute a decision these project submittals will have associated decisions rendered when analysis is complete. Project proposals will be submitted when implementation is likely within a reasonable timeframe. Projects that have been approved but not implemented for an extended period of time may need to have additional analysis conducted before implementation can begin.

Elements of this MDP will require an adjustment to Forest Plan Management Areas as well as the official SUP Area. This boundary adjustment is proposed in parallel with the submission of an applicable project proposal.

Only a portion of project-level detail is provided with the largely conceptual MDP. Site-specific environmental analysis following the National Environmental Policy Act (NEPA) and engineering documents will be addressed when phased development plans are finalized and submitted as a project proposal with an appropriate level of detail.

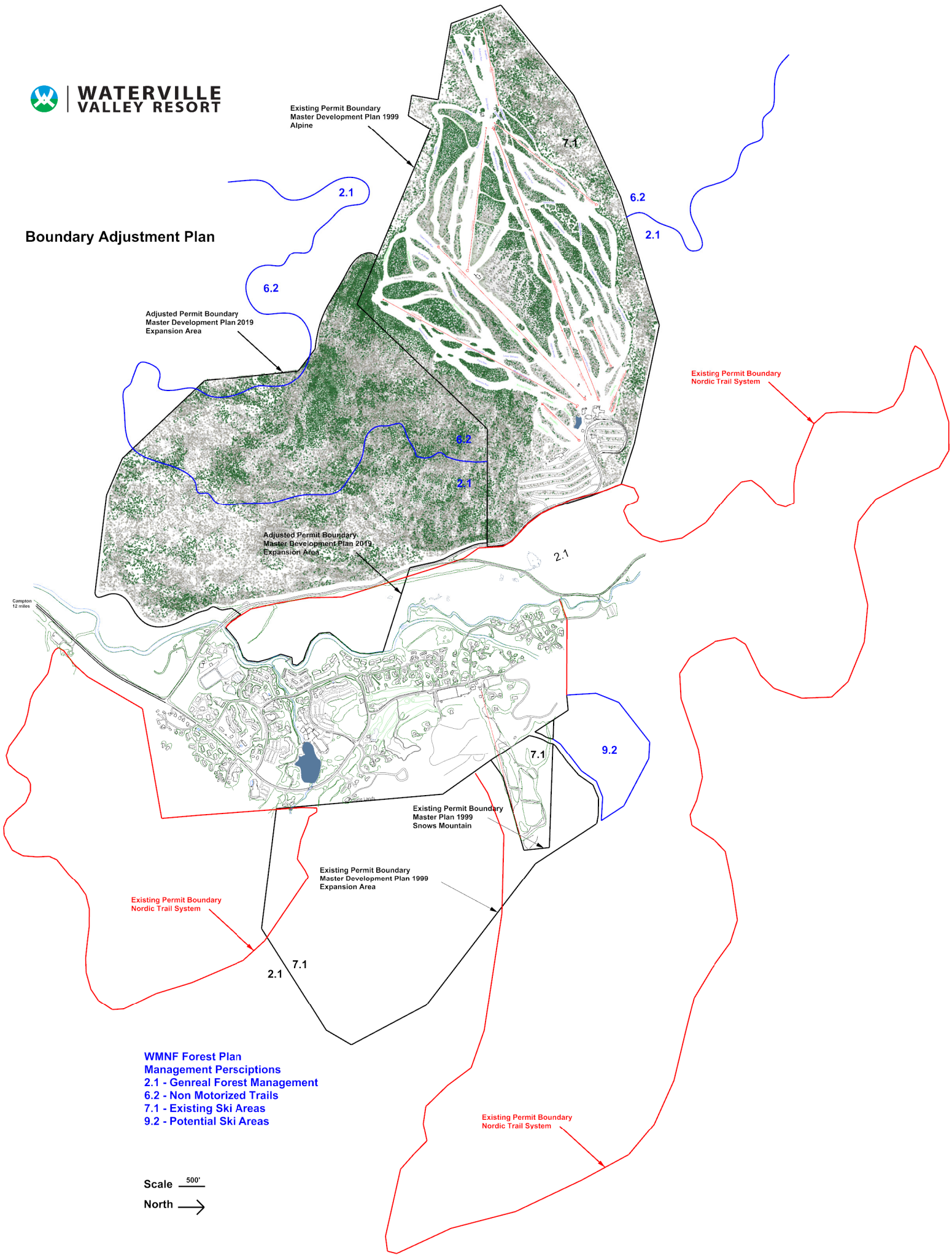
The Goals of the MDP

- To identify areas of expansion and improvements to the existing facilities in a conceptual process.
- To display the vision in text, tables, and mapping.
- To position the WVR and the Town of Waterville Valley for growth.

Development Strategies

- To implement SUP boundary adjustments, including an administrative exchange of Forest Plan Management Area designations, so that previously identified ski area expansion lands are exchanged for lands directly adjacent to existing development at the alpine ski area.
- Develop a direct transportation link from the Town of Waterville Valley to the Waterville Valley Resort.
- Improve aging infrastructure and add new infrastructure as needed.

Boundary Adjustment Plan



**WMNF Forest Plan
Management Percsptions**
 2.1 - Genreal Forest Management
 6.2 - Non Motorized Trails
 7.1 - Existing Ski Areas
 9.2 - Potential Ski Areas

Scale $\overline{500'}$
 North \rightarrow

Background

WVR and the Town of Waterville Valley are at “the end of the road”, 12 miles up Route 49 from Exit 28 off Interstate 93. It is approximately 2 hours from Boston, MA and 80 minutes from Manchester, NH.

“Waterville” was a summer resort long before it became a winter destination. The town of Waterville was incorporated in 1829. In the 1930s, skiing was developed with a lift at Snows Mountain adjacent to the Waterville Inn. A walk-up “Tecumseh” alpine race was held each winter on Mt. Tecumseh.

In the 1960s Tom Corcoran, a former Olympic Skier, acquired much of the private land in Waterville and added “Valley” to the town’s name. The Town of Waterville Valley consists of approximately 500 acres of private land on the Valley floor and is surrounded by the WMNF. There are approximately 150 single-family homes, 1100 condominiums/apartments, and 160 hotel rooms (without kitchens) in the Town of Waterville Valley.

In 1966, with the approval of the WMNF, the Waterville Company began the development of lift served skiing on Mt. Tecumseh. Five lifts and base buildings were constructed for that first winter season under a SUP. As a condition of the SUP, a MDP was developed in 1976. The 1976 MDP outlined the proposed improvements of the resort facilities on both Mt Tecumseh and Snows Mountain lift-served recreational sites.

In 1996, the Resort assets in the WMNF and in the Town were purchased by Booth Creek Resorts. The 1976 MDP was revised and updated in 1999.

In 2010, Booth Creek’s assets in the Town of Waterville Valley and WVR were sold to a new ownership group, Waterville Valley Holdings, LLC. The assets included WVR, the Nordic Trail System (NTS) skiing operations, a Convention Center, and the Town Square commercial, retail and lodging center.

Within the Town of Waterville Valley, there is a commercial center with restaurants, stores, and other businesses. In addition, there are other significant amenities and community facilities in the Town of Waterville Valley including a library, public school (K-8), recreation center, indoor skating rink, world renowned tennis center with 18 outdoor clay courts, a nine-hole golf course, ski academy and an athletic center. Since 2010, WVR has expanded both its winter and summer offerings.

The NTS is used by skiers, mountain bikers, and hiking enthusiasts year-round.

Town Square, WVR and the Conference Center all host special events throughout the year. WVR acquired the permit for a previously separate Nordic skiing network in 2013, increasing the SUP acreages.

The Green Peak expansion was proposed for development and required an Environmental Assessment (EA) that was completed in 2011. In 2015, a supplemental EA was approved to modify the original EA in order to accommodate the relocation of an existing lift and abandon the purchase of a new lift for the new skiing pod.

Green Peak was opened in 2017 with the development and construction of new ski trails and the installation of the relocated fixed grip triple lift. Work continues in this pod with the installation of snowmaking and trail modifications.

A Project Proposal was submitted to the USFS in 2017 for the replacement and realignment of the High Country lift. The project proposal identified the purpose and need as well as the required forest plan amendment needed to address sensitive species and restricted wildlife habitat. Implementation of the approved plan began in the fall of 2017 with scheduled completion in the fall of 2019.

A Base Lodge remodel master plan was developed in the fall of 2017. New ticket sales and adaptive spaces was completed in 2017. A remodel of an existing deck to create interior space began construction in the fall of 2018 and is scheduled to be completed in the fall of 2019. The addition of second floor bathrooms and a reconfigured second floor entry is scheduled to be completed in late fall 2019.

Two conveyor lifts for the learning area were proposed, approved, built and opened in 2017. This project replaced an old surface lift. The new technology is much more user friendly for the beginner skier / rider.

An additional summer offering of disk golf was approved, constructed and operational in 2018 on Snows Mountain.

A Decision Memo was issued for the extension of the World Cup T-bar in 2011. This project has not been implemented, however the project remains desirable for the resort and local supporting organizations.

Purpose and Need

Technology and guest expectations industry-wide are progressing at a fast pace. WVR recognizes these trends and the need to react in a timely manner to remain competitive. WVR and the Town of Waterville Valley have experienced decades of declining market share.

An important catalyst for future development is a direct transportation link from the Town of Waterville Valley to WVR. Connecting these two locations will promote growth in the town and increase year-round accessibility to WVR, while reducing automobile traffic between the Town and the resort. As growth begins in the town, expansion and upkeep of existing facilities will follow simultaneously. Preliminary planning for this connection was started decades ago.

The majority of the land associated with the contemplated transportation link has been acquired by affiliates of WVR. WVR, the affiliated development group and the Town of Waterville Valley are preparing for the proposed upgrades and the approval process. The success of WVR and the Town of Waterville Valley rests on the implementation of this plan.

Existing Conditions

WVR operates 12 lifts on approximately 240 acres of developed lands for winter recreation on WMNF land on Mount Tecumseh and Green Peak. Additional acres of developed non-motorized recreational lands are located on Snows Mountain and throughout the Valley as part of the Nordic Trail System (NTS). The NTS has a variety of recreational uses. The lands and chairlift at Snows Mountain are located on both public and private land. Snows Mountain and NTS design parameters are evaluated separately from Mt. Tecumseh / Green Peak.

Comfortable Carrying Capacity (CCC) is defined as the optimum number of skiers and riders that can utilize a ski area in a day while providing a pleasant recreational experience and at the same time preserving the quality of the environment. Typically, 70% to 85% of guests will be active at any one time while the remainder will be inactive – eating lunch, using restrooms, milling around the base area, etc. The former CCC for Mt. Tecumseh as defined by the 1999 MDP was 5,740 guests. WVR's operations team believes that the Observed CCC is closer to 4,100 guests based on current skier trends, observations, and guest expectations. The CCC of WVR's current lift infrastructure is 5381 while the current trail configuration CCC is 3783, creating an Aggregated Average CCC of 4582 as shown on page 18. WVR terrain and uphill lift capacity are currently balanced. The lift capacity blends well with the trail capacity and the infrastructure that supports the operations. Exceptions to this balance have been in lodge space, but this shortfall is being addressed through current projects. The expansion and improvements of existing facilities are intended to enhance the established resort.

Facilities at WVR include ticket sales, the Adaptive Program, food service, administrative space, rental shop, ski club space, maintenance shops, snowmaking infrastructure and other ancillary functions. Most of the facilities are located near the base area. The NTS support facilities are located on private land with mechanical support located at the WVR maintenance shops. A microcell site exists within the base lodge. This site is administered through a SUP independent of the ski area permit. This site will be maintained. A communications site located at the top of the mountain exists. WVR maintains access to that site. A sugaring operation also exists within the existing Permit Boundary.

The NTS operates on both private and US Forest Service Lands. A total of 49 kilometers of existing trails is used for planning purposes. This figure is based on current mapping. The USFS has performed ground proofing that has produced a different total kilometer length of the system on both private and public lands for fee calculations over the summer of 2019. For the planning purposes we continue to use the figure produced during our desk top CAD analysis. These differences are currently unable to be identified at this time. The NTS provides access to nordic skiers, snow biking, snow shoeing, and walking. In some cases, dogs are allowed on the trails. The trail system is also used in non-winter seasons for recreation such as, but not limited to, hiking and biking. The biking system is approximately 32 kilometers (20 miles). Trails can be accessed from various locations in the valley. Proposed trails are identified on the following charts and maps for both NTS and snow free uses.



WATERVILLE VALLEY RESORT

Existing Conditions Plan Alpine

Scale $\frac{1}{500'}$

North \rightarrow



Campton
12 miles

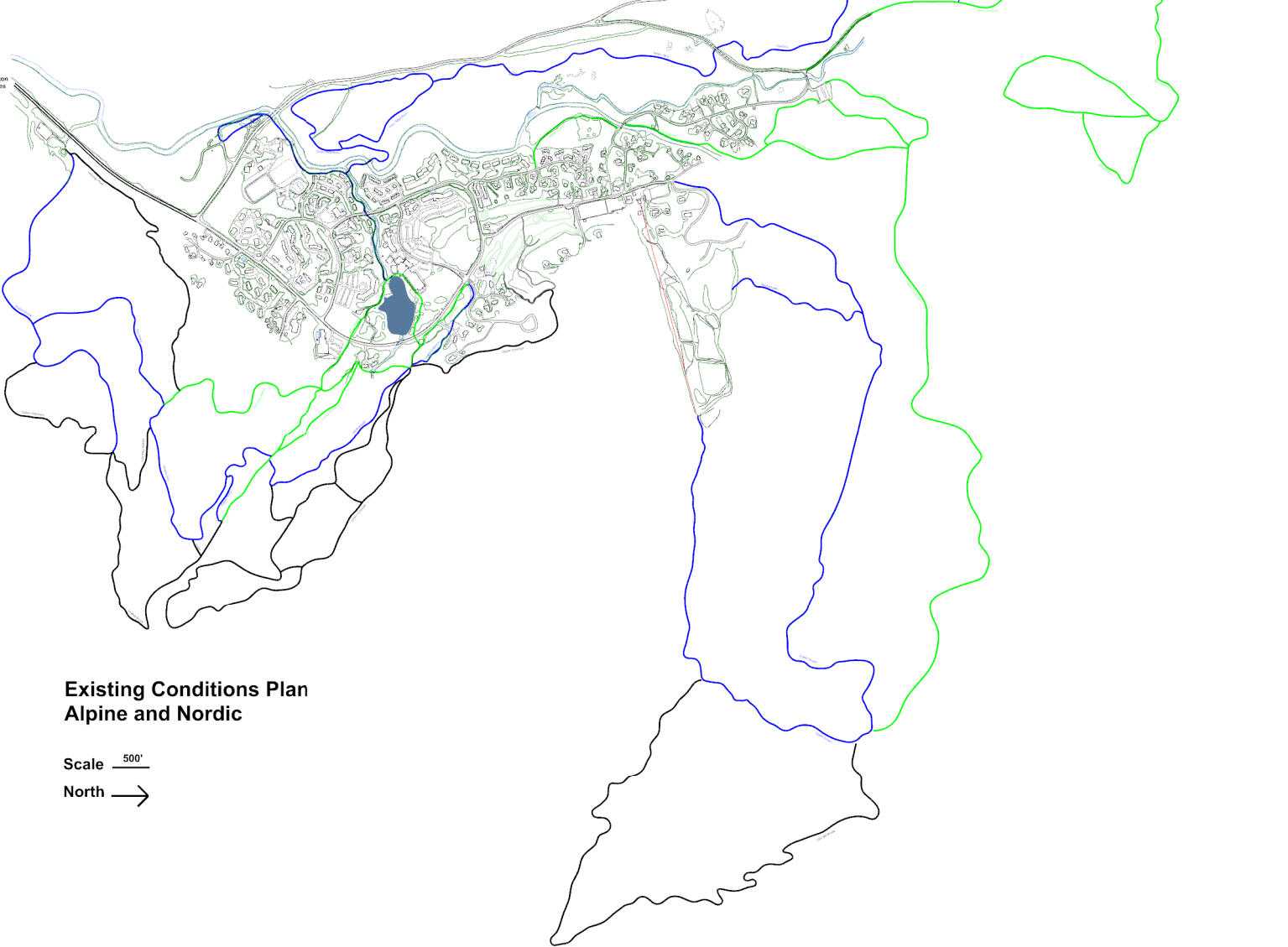




**WATERVILLE
VALLEY RESORT**



Campton
12 miles



**Existing Conditions Plan
Alpine and Nordic**

Scale 500'

North →

Proposed Expansion

SUP boundary adjustments of USFS lands are required to realize the vision of this MDP. The 1999 MDP identifies alpine ski trail expansion near Snows Mountain. This MDP proposes to remove those expansion plans and the associated administrative designation of the land through the Forest Plan as Management Area 9.2 – Alpine Ski Area Expansion and exchange them for lands adjacent to the existing resort. The permit area of the NTS will be adjusted to accommodate expansion.

The 2012 DMDP proposed expansion plans consisted of lifts, terrain and supporting infrastructure. Existing facilities, new lifts, trails and infrastructure expansions are further identified, described and mapped in the technical sections of this plan. Many components of this plan were identified decades ago with very strong public support. Preliminary engineering and planning is in progress to confirm the viability of those plans. This MDP identifies the general location and type of elements, including conceptual infrastructure needs.

Increasing visitation, development of private lands, year-round operational demands, energy efficiency programs, labor cost reductions, and recurring maintenance are all considerations in the planning process.

A number of projects are being developed that are within the developed ski area permit boundary. The World Cup T-bar Extension and the replacement of the White Peaks lift are two of these projects. Additional projects under development are the remodel of on mountain food service buildings, the replacement of the Sunnyside lift and the removal of the Northside lift. Improved snowmaking piping and pumps are also part of the ongoing development.

Development is described and mapped in this plan (see Plan Map). The priority of this expansion is the transportation link from the Town of Waterville Valley to the summit of Green Peak. The lift, like many other examples of transit systems, will be the catalyst that creates a vibrant center. This connection will dramatically affect WVR by creating a visual and physical connection linking WVR and the Town of Waterville Valley. The intention is to create a transportation link with a minimum amount of infrastructure. The transportation link is proposed to be an 8-person gondola/chondola. The lift would have two sections that could be operated separately if desired. Where the two sections connect, a mid-station would be constructed. This mid-station would be located at the base of a future skiing pod, would have excellent beginner terrain potential, and would be connected to the existing access road by new road construction. The new mid-station base area is proposed to house lodge facilities, parking, event space and ski school space at full build out.

A minimum of three ski trails with supporting snowmaking is required. These would be low angle beginner trails and would provide access to the base from the existing resort and parking lots.

The lift line would also be open for skiing if conditions permit without snowmaking.

The expansion of the NTS would connect fragmented sections of the trail network and reduce current and undesirable road crossings. NTS improvements would be proposed as soon as possible. The proposed connecting trails proposed are outside the current SUP for the NTS. The mid-station area also has terrain that could be suitable for Nordic skiing. If developed, the Nordic trails in this area may also have snowmaking.

Summer and fall business is a very important and growing segment of WVR operations. The existing offerings located at Snows Mountain will remain. Operating the gondola in summer will enable additional activities to be developed. Those developments will be proposed by project proposal.

Once minimum infrastructure is completed, additional terrain and lifts are proposed for this new skiing pod and would be developed as the market demands and resources allow. The development of additional terrain would require a snowmaking water storage pond or ponds. A restaurant at the top of Green Peak would be developed during this phase. Two conveyors currently installed would be relocated to the Gondola mid-station base area for beginner skiers. Ski School space would be relocated and the ski school facilities in the current base lodge would be remodeled.

Ski trail development is possible on South Ridge. This development is beyond the scope of this MDP. This expansion is identified for permit boundary adjustments but is intended to be started only after the ten-year time frame of the MDP.

Master Development Plan

- Improvements
- A. Gondola Alignment Zone
 - B. Chondola
 - C. Six Pack Lift
 - D. Alpine Skiing Trails 101 - 114
 - E. Lift Replacement
 - F. Lift
 - G. Lift Removal
 - H. Nordic System Trails (NST) Trails 201 - 204
 - I. Snowmaking Water Containment Pond
 - J. Future Skiing

Scale 500'

North →

South Ridge
Future Expansion

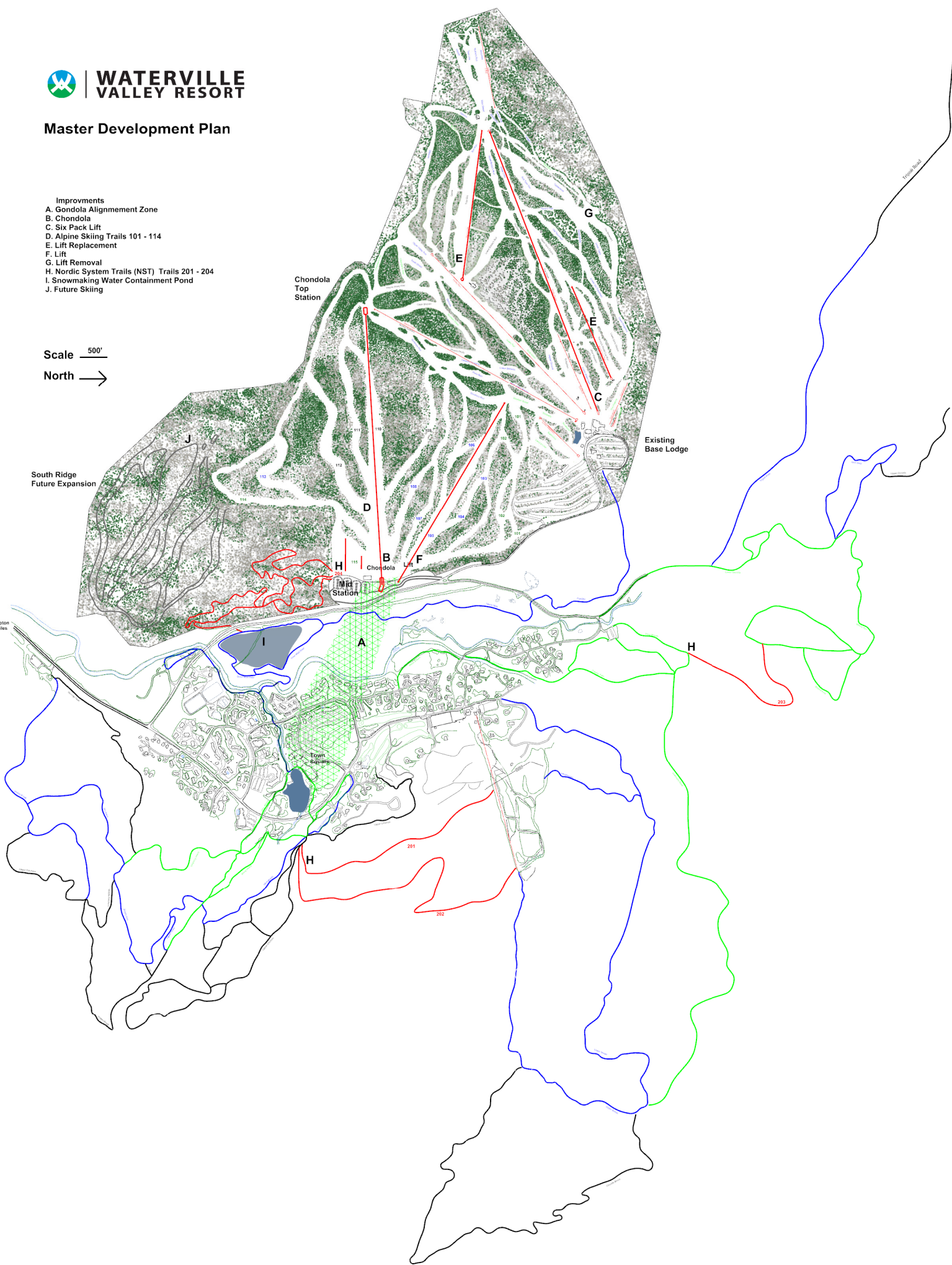
Chondola
Top
Station

Existing
Base Lodge

Chondola
Mid
Station

Four
Squares

Campton
12 miles





Google Earth Perspective Map



Comfortable Carrying Capacity (CCC)

The accurate estimation of the CCC is a complex issue. Lift capacities, desired trail densities, wait times, ride times, and facilities seating can all be considered when calculating CCC. This MPD provides lift and trail CCC. Other considerations are discussed in other sections of this plan.

Lift CCC is derived from the resort's supply of Vertical Transport Feet (VTF) combined with the hours of operation and Vertical Demand. VTF is the vertical feet combined with the hourly capacity of the lift. Vertical demand is an average amount of skiing per day.

Lifts CCC (existing) = **5395**

Lifts CCC (proposed) = **7866**

Total VTF = 11,705,761

Total VTF= 17,065,641

Average Hours per day = 7.4

Hours per day = 7.4

Vertical Demand = 16k/day

Vertical Demand = 16k/day

*Existing VTF assumes lifts run at full speed, all persons load lift at 100% and no stops.

Trail CCC is derived from WVR terrain in acres and the comfortable number of skiers per acre. The acceptable number of skiers per acre is dependent on the type of terrain. Beginner terrain for example can accommodate more skiers per acre than expert terrain. Beginners are going slower and therefore require less room than the speeds found on more advanced and steeper terrain.

Desired trail densities for terrain are as follows:

- 25 skiers per acre (Beginner)
- 16 skiers per acre (Intermediate)
- 9 skiers per acre (Advanced)
- 9 skiers per acre (Expert)

WVR recognizes, promotes and plans to expand skiable glades and tree skiing. Acres for glades are not recognized in the CCC calculations.

Terrain CCC (existing) = **3783**

Average aggregate CCC existing = 4582

Terrain CCC (full build out) = **5344**

Average aggregate CCC proposed = 6523

See following specification data for details on existing and proposed lifts and trails.

Reported Actual Lift Capacity			
Lift Name	Capacity/Hr	Vertical (Ft.)	VTF
White Peaks Quad	2800	1600	4,480,000.00
Green Peak Triple	1564	999	1,562,795.72
Sunnyside Triple	1620	996	1,613,520.00
Valley Run Quad	2600	682	1,774,240.00
North Side	1200	789	946,800.00
Lower Meadows	1080	161	173,880.00
High Country T-bar	1187	397	471,215.26
Platter Pull	540	346	186,840.00
Pasture Upper carpet	1800	72	129,600.00
Pasture Lower carpet	1800	26	46,800.00
T-Bar	1014	305	309,270.00
Magic Carpet	720	15	10,800.00
Total Existing	17,925		11,705,761
Town (Transportation Only)	1800	140	252,000
Green Peak	2800	1251	3,502,800
Gondola Pod Triple	1800	500	900,000
White Peaks (Replacement)	3000	1600	320,000
Sunnyside (Replacement)	2400	996	776,880
Northside (Removal)	-1200	789	(946,800)
World Cup	1000	555	555,000
Total Proposed	11,600		5,359,880
Total At Full Build Out			17,065,641
			VTF / Hour

Comfortable Carrying Capacity			
Day of Year / Season	Days of Operation	Hours Per Day	Total Hours Per Season
Operating Days Per Season	135		
Weekend Day	39	8	309
Holiday Weekdays Average	12	8	96
Midweek Days	84	7	591
Average Daily Operating Hours			7.4
			Hours / Day
Vertical Demand (Subjective)			16,000
			Ft / Day
Existing CCC	VTF * Hours / Vert	5395	
Proposed CCC	VTF * Hours / Vert	7866	
Average Aggregate	Average of Lift CCC and Trail CCC	4597	
Average Aggregate	Average of Lift CCC and Trail CCC	7071	

Existing Trails Calculations

Trail Name	Top Elev.	Bottom Elevation	Vert	Horiz. Length	Slope Length	Ave. Width	Acres	Ave. %	Ave Deg.	Max %	Skiers / acre	Total Skiers
Beginner												
Chandler's Way	2850	2470	380	2659	2686	106	7	14	8	18	25	163
Bourbon Street	2500	2000	500	2995	3036	155	11	16	9	20	25	270
Baseway	2000	1930	70	419	425	123	1	16	9	16	25	30
Kinderpark	1900	1858	42	445	447	62	1	9	5	10	25	16
Leroy's Loop	1970	1830	140	1251	1258	118	3	11	6	18	25	85
Revelation	1940	1830	110	812	820	59	1	14	8	22	25	28
Stemtation	1970	1830	140	990	1000	172	4	14	8	20	25	99
The Pasture	1970	1860	110	911	918	143	3	12	7	11	25	75
Valley Run	2550	1860	690	4088	4146	177	17	18	10	22	25	421
Intermediate												
And Tyler Too	3270	2800	470	1332	1413	132	4	18	10	30	16	69
Bail Out	3270	3200	70	299	307	23	0	23	13	15	16	3
Exhibition	2400	1880	520	1953	2021	164	8	27	15	32	16	122
Higher Ground	2200	1970	230	803	835	109	2	29	16	33	16	33
Grimes Way	3430	3350	80	570	576	45	1	25	14	12	16	10
Lower Old Tecumseh	2550	2160	390	1359	1414	67	2	29	16	25	16	35
Lower Periphery	2320	1880	440	2733	2768	61	4	16	9	30	16	62
Lower Stillness	2170	1870	300	1721	1747	128	5	18	10	18	16	82
Hassle	3800	3490	310	1161	1202	115	3	27	15	28	16	51
Mean Jean's Ravine	2140	2040	100	463	474	66	1	21	12	27	16	11
Governor's Run	2850	2100	750	3139	3227	147	11	23	13	27	16	174
Piano Man	2450	2150	300	870	920	124	3	34	19	31	16	42
Calvert's Crossing	2530	2150	380	1027	1095	97	2	36	20	32	16	39
Lower Tippecanoe	2650	2300	350	999	1059	93	2	34	19	30	16	36
Lower White Caps	2240	1850	390	1792	1834	125	5	21	12	30	16	84
Main Street	3500	3430	70	580	584	227	3	12	7	10	16	49
No Grit	3350	3120	230	1042	1067	53	1	21	12	21	16	21
Oblivion	3430	2700	730	3373	3451	106	8	21	12	30	16	134
Old Tecumseh	3000	2550	450	1470	1537	84	3	31	17	38	16	47
Palmer's Way	3450	3400	50	203	209	57	0	25	14	12	16	4
Periphery	3350	2660	690	2132	2240	63	3	32	18	38	16	52
Rock Island	2400	1950	450	2333	2376	138	8	19	11	27	16	120
Ruthie's Run	3810	3500	310	1093	1136	129	3	29	16	24	16	54
Scamble	3810	3490	320	1143	1187	80	2	29	16	26	16	35
Sidewinder	3450	3350	100	728	735	53	1	14	8	12	16	14
Siegle Street	2680	2570	110	422	436	53	1	27	15	22	16	8
South Street	2680	2470	210	759	788	164	3	27	15	28	16	47
Stillness	2540	2150	390	1990	2028	104	5	19	11	25	16	77
Sun Run	3450	3300	150	654	671	120	2	23	13	28	16	30
Tangent	3410	3120	290	1115	1152	49	1	27	15	30	16	21
Terry's Trail	2930	2850	80	331	341	64	1	25	14	22	16	8
Tippecanoe	3350	2650	700	2261	2367	161	9	30	17	38	16	140
Tree Line	3810	3490	320	1265	1305	76	2	25	14	28	16	36
Upper Bobby's	3450	2960	490	1881	1944	104	5	27	15	35	16	74
Upper Valley Run	2720	2550	170	620	643	174	3	27	15	31	16	41
White Caps	3440	2680	760	2621	2729	121	8	29	16	32	16	121

Trail Name	Top Elev.	Bottom Elevation	Vert	Horiz. Length	Slope Length	Ave. Width	Acres	Ave. %	Ave Deg.	Max %	Skiers / acre	Total Skiers
Advanced												
Ciao	3300	2530	770	2153	1935	110	5	36	20	48	9	44
Gema	3200	2470	730	1870	1986	110	5	38	21	50	9	45
Lower Sel's Choice	2470	1990	480	1658	1726	135	5	29	16	43	9	48
Psyched	2970	2430	540	1652	1738	90	4	32	18	42	9	32
The Boneyard	2650	2270	380	1278	1334	122	4	30	17	38	9	34
The Chute	2750	2240	510	1439	1527	117	4	36	20	46	9	37
Tommy's World Cup	2550	1960	590	1974	2060	117	6	30	17	42	9	50
Upper Sel's Choice	2860	2550	310	1022	1068	130	3	32	18	40	9	29
Utter Abandon	2550	1930	620	2133	2221	100	5	29	16	42	9	46
Preston's Path	3300	2750	550	1693	1783	32	1	47	25	42	9	12
Clean Shaven	2810	2440	370	1001	1067	125	3	36	20	42	9	28
Pfosi's Pfolly	2600	2250	350	1158	1210	144	4	30	17	47	9	36
Ruffled Feathers	2730	2560	170	876	892	105	2	19	11	42	9	19
Psyched Out	2870	2850	20	275	276	41	0	7	4	30	9	2
Expert												
Lower Bobby's	2970	2510	460	1361	1437	158	5	34	19	57	9	47
True Grit	3300	2520	780	2075	2075	233	11	38	21	55	9	100
Wayne Wong Way	2830	2580	250	538	593	115	2	47	25	50	9	14
Existing Total							241					3798

Proposed Trails Calculations

Trail Name	Top Elev.	Bottom Elevation	Vert	H. Length	S. Length	Ave. Width	Acres	Ave. %	Ave Deg.	Max %	Skiers / acre	Total Skiers
Beginner												
101	2050	1600	450	4379	4402	80	8	11	6	17	25	202
102	2100	1660	440	3008	3034	80	6	14	8	24	25	139
114	2850	1620	1230	9654	9732	150	34	12	7	12	25	838
115	1650	1580	70	800	803	603	11	9	5	10	25	278
Intermediate												
103	2005	1630	375	2605	2632	80	5	14	8	25	16	77
104	1850	1680	170	1266	1277	82	2	14	8	27	16	38
105	2100	1630	470	3039	3075	128	9	16	9	30	16	145
106	2300	1630	670	3447	3512	91	7	19	11	30	16	117
107	2400	1650	750	2986	3079	92	7	25	14	34	16	104
108	1900	1700	200	1092	1110	130	3	18	10	35	16	53
113	2400	1910	490	1650	1721	175	7	31	17	26	16	111
Advanced												
109	2450	1830	620	2090	2180	90	5	31	17	44	9	41
110	2850	1750	1100	3812	3968	170	15	29	16	42	9	139
111	2650	1760	890	2837	2973	130	9	31	17	40	9	80
112	2520	1800	720	2429	2548	220	13	31	17	42	9	116
Proposed Total							140					2478
Trails Calculations Summary												
Trail Name	Acres	Total Skiers										
Existing Trails												
Beginner	48	1188										
Intermediate	124	1988										
Advanced	51	462										
Expert	18	161										
Total	241	3798										
Proposed Trails												
Beginner	58	1457										
Intermediate	40	645										
Advanced	42	376										
Total	140	2478										
Full Buildout Summary												
Trail	Acres	Total Skiers										
Existing Trails Total	241	3798										
Proposed Trails Total	140	2478										
Total	381	6276										

Nordic Trail System

(NTS)

The WVR NTS and operations are considered one of the best in New England. Trails are located throughout the valley on both private and public lands. Snowmaking is located on private lands and is very limited.

The NTS and bike trail system requires maintenance and updating. The variety of terrain and proximity to Town of Waterville Valley is a natural fit for the Valley. Trails are multi-use, offering traditional “classic” track skiing, skate skiing, snowshoeing, trail running, walking, fat-tire biking, and other uses such as dog sledding and dog walking.

The heart of the system is its bridges. Some bridges have been replaced while others are maintained. Relocation of short sections of NTS trails is commonly done to reduce resource impacts and enhance visitor experiences. WVR will strive to address reasonably foreseeable issues before they impact visitors or the environment in unacceptable ways. WVR performs trail maintenance to prevent erosion and address safety issues throughout the year. However, the system is fragmented. The south and north end trails are in need of new connecting trails. Proposed are connector trails and an additional 4 kilometers of new trails near the proposed mid station. The mid station trails will have snowmaking. The proposed snowmaking water containment pond will require rerouting existing Nordic trails.

All new trails will be designed for both Nordic skiing and mountain biking where feasible. Trail access points are numerous, with the primary points being Town Square and a developed USFS parking lot on the north end. Trails capacity is not calculated or in the MDP.

Mountain biking, trail running, and hiking are the primary summer uses of the NTS during times of no snow. However, the trail system does not utilize all of the available trails and many have erosion problems along with wet areas. WVR has begun to increase maintenance on the existing trails and has proposed realigning others. All non-special event summer lift access will remain at Snows Mountain until demand for expansion. Trail development would conceptually be located on Green Peak once the lift from town is operational. Proposed trail improvements have been submitted to the WMNF on Snows Mountain and could be implemented once a decision is made.

Additionally, electric mobility equipment is in use on trails that cross private land. The expansion of this system is ongoing on private lands. Resort Boards, One Wheel, and e-Bikes are examples of this equipment. Efforts to include this use on the WMNF will be pursued if regulations permit.

Nordic Ski Trail Specifications

(Classified by difficulty with proposed in red)

Trail Name	Km USFS	Km private	Total Km	Miles USFS	Miles Private
Beginner					
Livermore Road	3.4		3.4	2.1	
Pond Loop	0.37	1.08	1.45	0.23	0.67
Connector	0.37	0.58	0.95	0.23	0.36
Lower Fletchers	0.9		0.9	0.56	
Snows Brook	1.17		1.17	0.73	
Road Side		0.33	0.33		0.21
Lower Osceola	1.4		1.4	0.89	
Moose Run	2.7		2.7	1.7	
Wicked Easy	0.64		0.64	0.4	
Greeley Path	0.6		0.6	0.37	
Deep Woods	0.61		0.61	0.38	
Intermediate					
Lower Snows	5.31		5.31	3.3	
Pipeline	1.26		1.26	0.78	
Swans Way	1.35		1.35	0.84	
Outer Mad River	0.79		0.79	0.49	
Village Trail		1.43	1.43		0.89
Swazeytown	0.63		0.63	0.39	
Drakes Brook	1.7		1.7	1.06	
Dry Jones	0.88		0.88	0.55	
Lower Criterion		0.45	0.45		0.28
HB Highway	0.9		0.9	0.56	
Sloppy Joes	0.96		0.96	0.6	
Figure Three	0.53		0.53	0.33	
Tripoli Road	2		2	1.29	
John Deer	1.5		1.5	0.91	
Inner Mad River	0.85	0.09	0.94	0.53	0.06
Expert					
Cascade Brook	3.55		3.55	2.21	
Upper Criterion	3.89	1.07	4.96	2.42	0.67
Jennings Peak	1.3		1.3	0.81	
Middle Fletchers	0.48		0.48	0.3	
Upper Fletchers	0.91		0.91	0.57	
Drakes Brook	1.39		1.39	0.86	
A Hill	0.08		0.08	0.05	
Tripoli Road	1.1		1.1	0.74	
Upper Osceola	0.67		0.67	0.42	
Bean Bender	0.56		0.56	0.35	
Totals	45	5	50	28	3
		Beginner	29%		
		Intermediate	42%		
		Expert	29%		
Proposed Trails					
101	1.34		1.34	0.83	
102	2.03		2.03	1.26	
103	0.7		0.7	0.43	
104	4		4	2.4	

Bike Trail Specifications

(existing with proposed expansion on nordic trails)

Trail Name	Km USFS	Km private	Total Km	Miles USFS	Miles Private
Beginner					
Livermore Road	3.4		3.4	2.1	
Pond Loop	0.4	1.1	1.5	0.2	0.9
Connector	0.4	0.6	1.0	0.2	0.4
Snows Brook	1.2		1.2	0.7	
Road Side		0.3	0.3	0.2	
Greeley Path	0.6		0.6	0.4	
Deep Woods	0.6		0.6	0.4	
Mikes Dream		0.3	0.3		0.5
Intermediate					
Snows	5.2		5.2		
Pipeline	1.3		1.3	0.8	
Swans Way	1.4		1.4	0.8	
Village Trail		1.4	1.4		0.9
Swazeytown	0.6		0.6	0.4	
Figure Three	0.5		0.5	0.3	
Inner Mad River	0.9	0.1	0.9	0.5	0.1
Expert					
Bean Bender	0.6		0.6	0.4	
Elephant Rock	0.8		0.8	0.5	
Totals	17.7	3.8	21.5	8.0	3
		Beginner	41%		
		Intermediate	53%		
		Expert	6%		

Multi Season recreational summer Activity Zones.

Summer activities are extremely important to the success of a ski area's year-round recreational opportunities. The MDP ten year vision is to develop the amenities to support existing and future growth.

Existing activities include scenic chair rides, disc golf, hiking, biking and special events on WMNF lands. Future development will expand on existing activities, will be natural resource based and be in compliance with the Ski Area Recreational Opportunities Enhancement Act.

Activity Zones (see map) are areas within the proposed SUP of existing and anticipated recreation activity. Remoteness, level of disturbance, infrastructure and naturalness are considered in defining guest experience and activity zones. There are 5 total activity zones that differ in landscapes across the entire SUP. Areas in zone 5 are considered the most remote and undeveloped while areas in zone 1 are considered fully developed. Upper elevations with wildlife habitat restrictions are included in Zone 5. Wetlands, riparian zones, sensitive tree islands and steep grades are some of the restrictive considerations to the activity zones ranking those sensitive areas higher in value. Careful consideration of the setting and the proximity to infrastructure are recognized in each zone.

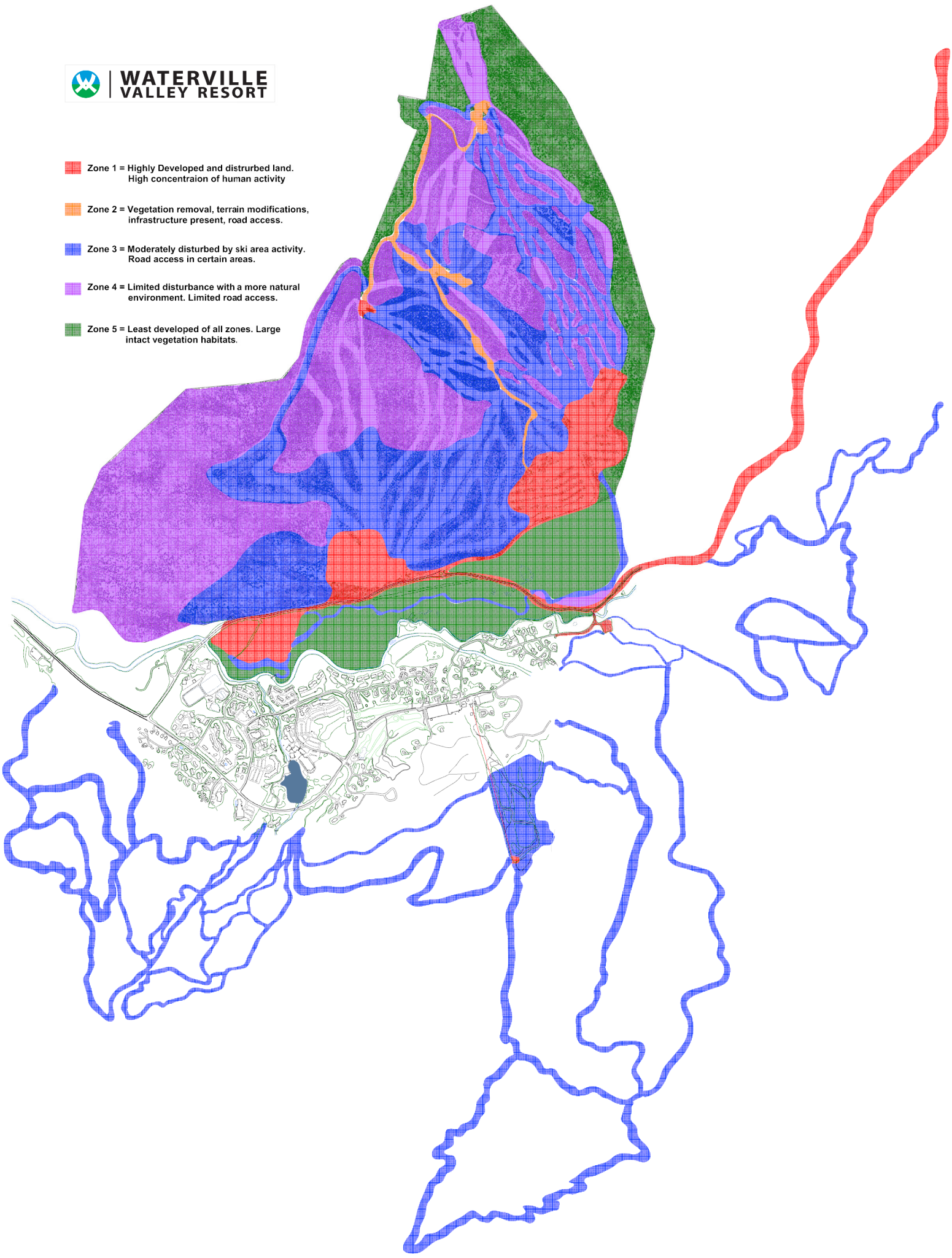
All existing and proposed Nordic system trails are included in zone 3. Alpine trails of moderate slope, both existing and proposed are in zone 3. The vision of activity allowed in Zone 3 is to maintain and in many cases reestablish multi season trails within the Nordic trail system as well as develop zones on the alpine area. Zone 4 activities could be developed for hiking trails and lands adjacent to the Nordic trail system are intended to be in zone 4 (not mapped)

It is important to recognize that summer and multi-seasonal activities are continually being developed and activities that do not currently exist may be popular within the next several years. Flexibility should come with the zone boundaries, since it is impossible to foresee exactly what new activities will be developed over time and how those activities will be incorporated into the activity zones.



WATERVILLE VALLEY RESORT

-  Zone 1 = Highly Developed and disturbed land. High concentration of human activity.
-  Zone 2 = Vegetation removal, terrain modifications, infrastructure present, road access.
-  Zone 3 = Moderately disturbed by ski area activity. Road access in certain areas.
-  Zone 4 = Limited disturbance with a more natural environment. Limited road access.
-  Zone 5 = Least developed of all zones. Large intact vegetation habitats.



Snowmaking

WVR currently covers approximately 85% (2018) of its terrain with snowmaking. As the ski area expands, the objective is to have the ability to cover 100%. In order to achieve reasonable coverage objectives within a reasonable number of years, a combination of water storage, water withdrawal, pumping capacity, snow gun types and piping sizes need to be balanced to be as efficient as possible.

Snowmaking infrastructure installation on existing Green Peak trails is anticipated to be completed in 2019.

After minimum uphill transportation infrastructure is completed, additional trails will require additional snowmaking capacity. This will be accomplished by the development of a 33 million gallon impoundment pond.

A Record of Decision for Waterville Valley Ski Resort Development of Snowmaking Water Impoundments and Environmental Impact Statement was signed by the WMNF Forest Supervisor in September 1997.

The location and size of the proposed pond is one of four ponds approved in 1997 but not built by previous ownership. The intent is to update the outdated plans to address new regulations and technology associated with the impoundments.

Infrastructure improvements including additional, upgraded, or repaired compressors, pumps, pipe lines, hydrants and guns are performed annually. Full build out will require additional infrastructure such as an additional pump-house. Site specific engineering plans will be developed as needed.

Power

New Hampshire Electric Cooperative provides power and transmission to WVR. The Coop confirms that they have sufficient power coming into Waterville Valley to meet future electric power demands. Snowmaking is by far the largest use of electric power. Actions to increase the efficiency of the snowmaking system have been implemented with the purchase of low energy consumption snow guns.

Domestic Water

Water is supplied to the base area and on-mountain restaurants from individual wells. Proposed facilities located at the mid station and the top of Green Peak are also planned to be serviced by wells.

Sewer

Facilities on the mountain, at the base area, and shops at the base area are equipped with holding tanks that are maintained as needed. Proposed facilities will be equipped in a similar manner.

Buildings

WVR recognizes that many parts of the existing infrastructure are over 50 years old. The original design, location, and functions are for the most part still valid today. Upgrades and the relocation of functions have been ongoing for many years. The primary need for additional seating in the main lodge is currently being addressed. Other buildings are in need of maintenance, repair and / or remodel. New buildings will be located at the gondola mid station and the summit of Green Peak. Size, location and architectural style will be addressed and approved by a formal project proposal. Locations of utilities will remain generally the same. Shop buildings repairs and expansions are projected. Relocating the ski school will enable additional renovations to the main base lodge.

The Town of Waterville Valley center (Town Square) will become a primary access point. Many functions including administration, ticket sales, restaurants, rentals, lockers and more will be housed in this location. Green Peak summit is a unique location for food service and special events. The gondola mid-station area has excellent topography for beginners and therefore, the beginner ski school location. The mid-station will also have parking and services with the potential for event space.

Proposed facilities combined with the addition of Town Square will be sufficient for the full buildout expansion plan. At the time the South Ridge pod is developed, the ability to provide additional parking and services will be evaluated.

Industry average square foot space requirements for a CCC of 5395 are as follows.

Industry Average comparisons:

	Existing	Low Average	High Average
Seating	22,441	21,900	31,280
Kitchen / scramble	7,862	8,070	9,380
Bar	3,660	3,750	4,690
Rest Rooms	3,770	4,380	5,010
Ski School	5,230	2,760	3,160
Childcare	4,821	4,760	5,170
Rental/ Repair	5,578	5,170	5,880
Retail	3,749	3,130	4,380
Ticket Sales	1,966	1,150	1,720
Public Lockers	4,432	3,040	4,020
Patrol	2,748	2,300	2,870
Administration	5,039	3,730	4,310
Lockers	2,200	1,150	1,720
Mechanical	1,822	630	1,150
Storage	7,372	6,310	6,950
Circulation	6,805	7,230	8,610
Totals	89,495	79,460	100,300

Parking and Transportation

Existing parking lots currently require a long uphill walk to the base area. During the busiest times, a shuttle “trolley” operates to remote lots. There are currently approximately 1800 spaces for parking. This is above industry standards for a CCC of 5395.

About 20% of all Mt. Tecumseh’s guests (1,079) arrive by the resort shuttle bus system with five buses circulating throughout the private inns and residences in the valley and transporting people to the mountain. As a result, the existing parking requirements at Mt. Tecumseh are estimated at 1,599 guest/car spaces (4,316 guests), 90 employee spaces (271 employees) and 5 bus spaces (193 guests). Existing lots are well suited to these numbers and exceed existing demand.

Future driving and traffic patterns would change dramatically with the new transportation gondola, trail access from the existing parking lots, and mid station development. The addition of the mid station and the trails from the existing resort to the mid station would allow direct skier access from the parking areas downhill to the mid station. This would alleviate some of the need for remote parking shuttles. Additional parking could be developed at the gondola base, providing better access for customers. Expanded parking in the Town Square area, along with new beds, retail and other services would also allow for less traffic congestion at the resort.

Resort shuttles could circulate around the valley floor bringing people to the gondola base terminal. Shuttles could also be used from the gondola mid station to the base area or town if necessary. Charter buses would have multiple options of drop off areas. These transportation changes would help reduce congestion at the base lodge, improve direct access to the ski terrain at the resort, improve traffic flow within the Town and lower the individual traffic counts between the Town and the resort. Administrative functions could be more dispersed with some offices located in the village. This would not only reduce parking at the existing base area but also provide future public spaces.

Summary

The MDP is the result of a detailed and collaborative process between WVR staff and ownership, resort and financial consultants, US Forest Service staff, and others. The result of this process is a ten-year visionary plan that builds on the success of the past with a vision to the future. A scope of 10 years to accomplish the outlined expansion plans is ambitious. The goal of the MDP is to articulate the vision for WVR's future, and provide the foundation for subsequent planning, design and eventual implementation of numerous capital improvements and expansion of the resort.

Generally speaking, each successive MDP builds upon past efforts, carrying forward projects that are still valid, dropping those that are not, and adding new ideas. Over time, the focus of the MDP shifts in response to the changes in ownership, the impacts of recent capital improvements and the evolving nature of the industry and marketplace.

Planned improvements on the existing mountain improvements are: The replacement of the White Peaks Lift, replacement of the Sunnyside Lift, the removal of the Northside lift, upgrading infrastructure as needed, and expand public space where possible.

A transportation lift /chondola from the Town of Waterville Valley to a mid-station with a continuing segment to the summit of Green Peak is contemplated. Beginner skiing, facilities and parking would be located at the mid-station with a second intermediate lift connecting skiers to the lower sections of the existing mountain. The summit of Green Peak lift would have food service and public space facilities, and the segment connecting the mid-station to the Town of Waterville Valley could operate as a transportation-only connection.

The NTS network of trails could be connected and expanded and facilities throughout the resort and valley will improve.