

ASPEN  SNOWMASS[®]

2015 | **MASTER
DEVELOPMENT
PLAN**

July 2015



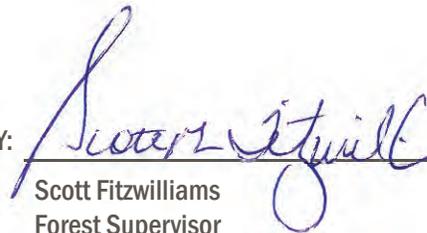
ASPEN  SNOWMASS.®

2015 | MASTER
DEVELOPMENT
PLAN



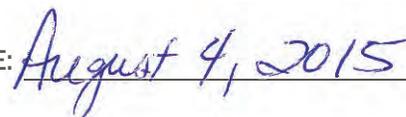
July 2015

ACCEPTED BY:



Scott Fitzwilliams
Forest Supervisor
White River National Forest

DATE:



PREPARED BY:

 **SE GROUP**



File Code: 2720
Date: August 4, 2015

David Corbin
Vice President, Planning and Development
Aspen Skiing Company, LLC
Post Office Box 1248
Aspen, Colorado 81612

Dear David,

This letter responds to the Aspen Skiing Company (ASC) July 8, 2015 Snowmass Mountain Master Development Plan (SMMDP) submittal and ASC's subsequent request for Forest Service acceptance of the SMMDP. My mountain sports staff completed its review of the recent submittal and appreciates the clarifications ASC has provided in response to the Forest's information requests of April 14, 2015 and July 22, 2015. My staff believes the SMMDP is a conceptual, 'forward looking' document, which helps refine Snowmass Mountain's market niche.

In recent years, ASC and the White River National Forest have invested much time and energy focusing on forest health challenges and solutions. While the Master Development Plan contains substantial glading treatment and limited, traditional, ski trail development, it does not include any short- or long-term forest health projects and is silent on any overlap of proposed trail development / glading treatment with forest health treatments prescribed in your company's Forest Health Environmental Assessment (2011) and associated Decision Notice. In moving forward, site-specific proposals for developed skiing terrain will be considered in tandem with long-term forest health needs at Snowmass Mountain.

I would like to reiterate the Forest's previous concerns about the staleness of the 1994 Environmental Impact Statement (EIS) Record of Decision (ROD). Several projects included in the SMMDP's Chapter V were analyzed and authorized in the 1994 EIS and ROD. However, because project implementation has not occurred in the ensuing 21 years, additional environmental review will likely be necessary on any remaining elements of the 1994 ROD not yet implemented. Please work closely with my mountain sports staff to plan for projects listed in Chapter V, and allow for adequate lead time for requisite environmental reviews where the previous environmental processes are no longer deemed adequate.

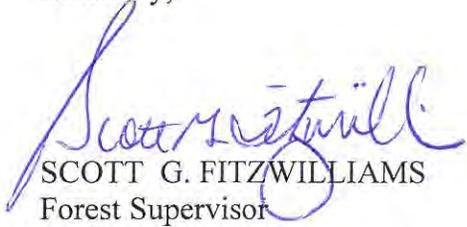
After careful document review, and consultation with the Forest's mountain sports staff, I accept ASC's SMMDP. I have concluded the SMMDP is consistent with the White River National Forest Land and Resource Management Plan, and national direction tied to the Ski Area Recreational Opportunity Enhancement Act of 2011. However, no project contained in the SMMDP is authorized as a result of this document acceptance. Each of the proposed projects listed in the SMMDP must go through National Environmental Policy Act (NEPA) analysis and decision making prior to implementation. I am eager to work with Snowmass Mountain's



management team to ensure the provision of high quality recreation experiences for all forest visitors.

If you have questions concerning any element of this acceptance letter, please direct your questions to Scott Kaden, the Aspen-Sopris Ranger District's Mountain Sports Lead. Kaden is reachable by email at scottakaden@fs.fed.us or by telephone at (970) 404-3159.

Sincerely,



SCOTT G. FITZWILLIAMS
Forest Supervisor

cc: Karen Schroyer; Roger Poirier; Scott Kaden; Monte Lutterman

CONTENTS

I. INTRODUCTION	I-1
A. LOCATION	I-2
B. LAND OWNERSHIP	I-2
C. CURRENT RESORT OPERATIONS SUMMARY	I-2
1. <i>Winter</i>	I-3
2. <i>Summer</i>	I-4
D. BACKGROUND	I-4
1. <i>Chronology of Development</i>	I-5
E. ABSTRACT OF PLANNED MASTER DEVELOPMENT PLAN	I-5
1. <i>Winter</i>	I-5
2. <i>Summer</i>	I-6
F. PAST PLANNING AND ENVIRONMENTAL DOCUMENTATION	I-6
G. VISION AND DESIGN PHILOSOPHY	I-7
H. STATEMENT OF GOALS AND OBJECTIVES	I-8
1. <i>Winter</i>	I-8
2. <i>Summer</i>	I-8
I. ACCEPTANCE BY THE FOREST SERVICE	I-9
J. PUBLIC/MUNICIPAL REVIEW	I-9
II. DESIGN CRITERIA	II-1
A. DESTINATION RESORTS	II-1
B. REGIONAL DESTINATION RESORTS	II-1
C. NATIONAL AND INTERNATIONAL DESTINATION RESORTS	II-2
D. BASE AREA DESIGN	II-2
E. MOUNTAIN DESIGN	II-3
1. <i>Trail Design</i>	II-3



2. <i>Lift Design</i>	II-4
3. <i>On-Mountain Guest Services</i>	II-4
F. CAPACITY ANALYSIS AND DESIGN	II-4
G. BALANCE OF FACILITIES	II-5
H. MULTI-SEASON RECREATION ACTIVITIES	II-5
III. SITE INVENTORY	III-1
A. TOPOGRAPHY AT SNOWMASS	III-1
B. SLOPE GRADIENTS AT SNOWMASS	III-1
C. SOLAR ASPECT AT SNOWMASS	III-2
IV. EXISTING CONDITIONS	IV-1
A. SUMMARY OF THE EXISTING GUEST EXPERIENCE	IV-1
B. EXISTING LIFT NETWORK	IV-2
C. EXISTING TERRAIN NETWORK	IV-4
1. <i>Terrain Variety</i>	IV-4
2. <i>Developed Alpine Trails</i>	IV-4
3. <i>Undeveloped and Gladed Terrain</i>	IV-9
4. <i>Terrain Parks</i>	IV-11
5. <i>Snow Tubing</i>	IV-12
D. EXISTING CAPACITY ANALYSIS	IV-13
1. <i>Comfortable Carrying Capacity</i>	IV-13
2. <i>Density Analysis</i>	IV-14
3. <i>Lift and Terrain Network Efficiency</i>	IV-14
E. EXISTING GUEST SERVICES FACILITIES, FOOD SERVICE SEATING AND SPACE USE ANALYSIS	IV-16
1. <i>Guest Services</i>	IV-16
2. <i>Space Use Analysis</i>	IV-16
3. <i>Food Service Seating</i>	IV-17
F. EXISTING PARKING CAPACITY	IV-19
G. EXISTING RESORT OPERATIONS	IV-19
1. <i>Ski Patrol/First Aid</i>	IV-19
2. <i>Snowmaking Coverage</i>	IV-19
3. <i>Grooming</i>	IV-20
4. <i>Maintenance Facilities</i>	IV-20
5. <i>Power and Other Utilities</i>	IV-20
6. <i>Culinary Water and Sewer</i>	IV-21
H. RESORT CAPACITY BALANCE AND LIMITING FACTORS	IV-22
I. SUMMER OPERATIONS	IV-23
1. <i>Summary of the Existing Summer and Multi-Season Guest Experience</i>	IV-23
2. <i>Existing Summer and Multi-Season Facilities</i>	IV-23
3. <i>Lifts</i>	IV-24
4. <i>Mountain Biking</i>	IV-25
5. <i>Hiking</i>	IV-27

6. <i>Miscellaneous Activities</i>	IV-29
7. <i>Summer and Multi-Season Guest Service Facilities Use</i>	IV-29
8. <i>Existing Resort Summer Operations</i>	IV-29
V. PREVIOUSLY-APPROVED PROJECTS, NOT YET IMPLEMENTED	V-1
A. LIFTS	V-1
1. <i>High Alpine Lift Replacement</i>	V-1
2. <i>Burnt Mountain Lift</i>	V-2
3. <i>Naked Man Lift</i>	V-2
B. TERRAIN	V-2
1. <i>Burnt Mountain Trails/Glading</i>	V-2
2. <i>2015 Glading Projects</i>	V-2
3. <i>Elk Camp Lower Bypass</i>	V-2
4. <i>Level 3 Trail</i>	V-2
C. SNOWMAKING	V-2
1. <i>Green Cabin and Trestle Snowmaking</i>	V-2
2. <i>Adam's Avenue Snowmaking</i>	V-2
3. <i>Additional Snowmaking</i>	V-2
D. MEADOWS SNOW TUBING	V-2
E. MOUNTAIN BIKING TRAILS	V-3
1. <i>Vapor Trail Reroute</i>	V-3
2. <i>Meadows Skills Center</i>	V-3
F. FOREST HEALTH PROJECTS	V-3
G. PREVIOUSLY-APPROVED PROJECTS MATRIX	V-4
VI. UPGRADE PLAN	VI-1
A. SUMMARY	VI-1
B. UPGRADED LIFT NETWORK	VI-2
1. <i>High Alpine Lift</i>	VI-2
2. <i>Burnt Mountain Lift</i>	VI-4
3. <i>Naked Man Lift</i>	VI-4
4. <i>Detachable-Grip Lift Upgrades</i>	VI-4
C. UPGRADED TERRAIN NETWORK	VI-4
1. <i>Terrain Variety</i>	VI-4
2. <i>Developed Alpine Trails</i>	VI-4
3. <i>Planned Trail Grading Projects</i>	VI-10
4. <i>Undeveloped and Gladed Expert Terrain</i>	VI-10
5. <i>Terrain Parks</i>	VI-11
6. <i>Snow Tubing</i>	VI-11
D. PLANNED CAPACITY ANALYSIS	VI-11
1. <i>Comfortable Carrying Capacity</i>	VI-11
2. <i>Density Analysis</i>	VI-11
3. <i>Lift and Terrain Network Efficiency</i>	VI-12



E. UPGRADED GUEST SERVICES FACILITIES, FOOD SERVICE SEATING AND SPACE USE ANALYSIS	VI-14
1. <i>Guest Services</i>	VI-14
2. <i>Space Use Analysis</i>	VI-14
3. <i>Food Service Seating</i>	VI-15
F. PLANNED PARKING CAPACITY	VI-17
G. PLANNED RESORT OPERATIONS	VI-17
1. <i>Ski Patrol/First Aid</i>	VI-17
2. <i>Snowmaking Coverage</i>	VI-17
3. <i>Grooming</i>	VI-17
4. <i>Maintenance Facilities</i>	VI-17
5. <i>Utilities</i>	VI-17
6. <i>Communications</i>	VI-17
7. <i>Culinary Water and Sewer</i>	VI-18
H. RESORT CAPACITY BALANCE AND LIMITING FACTORS	VI-18
I. SUMMER OPERATIONS	VI-19
1. <i>Summer and Multi-Season Offerings – Zones Concept</i>	VI-19
2. <i>Summer and Multi-Season Activities and Facilities</i>	VI-26

APPENDICES	A-1
<i>Appendix A. Snowmass Creek Instream Flows</i>	A-3
<i>Appendix B. Snowmass Mountain Biking Plan</i>	A-5
<i>Appendix C. Snowmass Forest Health Projects – Proposed Treatment Projects Map</i>	A-7
<i>Appendix D. Forest Health Prescriptions</i>	A-9
<i>Appendix E. Boundary Management Plan</i>	A-17

FIGURES

<i>Figure I-1. Vicinity Map</i>	
<i>Figure I-2. Property Boundaries</i>	
<i>Figure III-1. Slope Analysis</i>	
<i>Figure IV-1. Existing Conditions</i>	
<i>Figure IV-2. Existing Snowmaking</i>	
<i>Figure IV-3. Existing Summer Use</i>	
<i>Figure VI-1. Upgrade Plan</i>	
<i>Figure VI-2. Planned Snowmaking</i>	
<i>Figure VI-3. Proposed Summer Zoning</i>	
<i>Appendix B. Snowmass Mountain Biking Plan</i>	
<i>Appendix C. Snowmass Forest Health Projects – Proposed Treatment Map</i>	

LIST OF TABLES

<i>Table I-1. Annual Skier Visits (2004–2014)</i>	I-3
<i>Table I-2. Terrain Quantity by Pod</i>	I-3
<i>Table II-1. Terrain Gradients</i>	II-3
<i>Table II-2. Skier Ability Breakdown</i>	II-3
<i>Table II-3. Skier Density per Acre</i>	II-3
<i>Table IV-1. Lift Specifications – Existing Conditions</i>	IV-3
<i>Table IV-2. Terrain Specifications – Existing Conditions</i>	IV-6
<i>Table IV-3. Terrain Distribution by Ability Level – Existing Conditions</i>	IV-10
<i>Table IV-4. Undeveloped Terrain – Existing Conditions</i>	IV-11
<i>Table IV-5. Comfortable Carrying Capacity – Existing Conditions</i>	IV-13
<i>Table IV-6. Density Analysis – Existing Conditions</i>	IV-15
<i>Table IV-7. Industry Average Space Use – Existing Conditions</i>	IV-18
<i>Table IV-8. Recommended Restaurant Seating</i>	IV-18
<i>Table IV-9. Parking Capacity – Existing Conditions</i>	IV-19
<i>Table IV-10. Snowmaking Operations – Existing Conditions</i>	IV-19
<i>Table IV-11. Maintenance Facilities – Existing Conditions</i>	IV-21
<i>Table IV-12. Domestic Water System – Existing Facilities</i>	IV-21
<i>Table IV-13. Mountain Biking Trails Trail Distribution by Ability Level – Existing Conditions</i>	IV-26
<i>Table IV-14. Mountain Biking Trails Ability Level Distribution – Existing Conditions</i>	IV-26
<i>Table IV-15. Hiking Trails Trail Distribution by Ability Level – Existing Conditions</i>	IV-28
<i>Table IV-16. Hiking Trails Ability Level Distribution – Existing Conditions</i>	IV-28
<i>Table V-1. Previously-Approved Projects, Not Yet Implemented</i>	V-4
<i>Table VI-1. Lift Specifications – Upgrade Plan</i>	VI-3
<i>Table VI-2. Terrain Specifications – Upgrade Plan</i>	VI-6
<i>Table VI-3. Terrain Distribution by Ability Level – Upgrade Plan</i>	VI-9
<i>Table VI-4. Undeveloped Expert Terrain – Upgrade Plan</i>	VI-10
<i>Table VI-5. Terrain Summary – Upgrade Plan</i>	VI-10
<i>Table VI-6. Comfortable Carrying Capacity – Upgrade Plan</i>	VI-12
<i>Table VI-7. Density Analysis – Upgrade Plan</i>	VI-13
<i>Table VI-8. Industry Average Space Use – Upgrade Plan</i>	VI-16
<i>Table VI-9. Recommended Restaurant Seating</i>	VI-16
<i>Table VI-10. Zone Characteristics</i>	VI-24
<i>Table VI-11. Snowmass Summer Use Zones</i>	VI-25

LIST OF CHARTS

<i>Chart IV-1. Terrain Distribution by Ability Level – Existing Conditions</i>	IV-10
<i>Chart IV-2. Resort Balance – Existing Conditions</i>	IV-22
<i>Chart VI-1. Terrain Distribution by Ability Level – Upgrade Plan</i>	VI-9
<i>Chart VI-2. Resort Balance – Planned Conditions</i>	VI-18



I. INTRODUCTION

This 2015 Master Development Plan for Snowmass updates the existing 2003 Snowmass Mountain Master Plan Amendment (SMMP), as amended. This Master Development Plan (MDP) provides a detailed assessment of existing facilities and operations at Snowmass, as well as a comprehensive overview of planned elements within the Snowmass special use permit (SUP) area. The MDP discusses planned year-round activities, including both winter and summer components slated for implementation over the next ten to fifteen years. Forest Service acceptance of this MDP is consistent with the requirements of the Snowmass SUP, but does not approve any projects contained within the document. The MDP is designed to be dynamic, and may be amended periodically to reflect new developments in facilities and recreation.

The *White River National Forest Land and Resource Management Plan – 2002 Revision* (2002 Forest Plan) provides the following direction for the preparation and utilization of ski area MDPs:

“A Master Development Plan is part of each ski area’s special use permit. MDPs are prepared by the permit holder and accepted by the Forest Service. They describe the improvements and facilities that are authorized at each resort and are the guiding document used to describe the expected future condition for the resort. These plans encompass all the area authorized for use by the special use permit

including areas that are, at present, undeveloped. Areas allocated are managed to avoid deterioration of site conditions that may detract from planned uses.”¹

The Snowmass experience remains one of the key reasons guests visit the Aspen/Snowmass area. With more than 3,000 skiable acres, Snowmass offers “something for everyone,” from the very first time beginner to the most adventurous extreme skiers and snowboarders. The children’s ski school program is world-renowned and contributes to Snowmass’ reputation as a perfect destination for families. The primary objective of the Snowmass experience is to bring all guests closer to nature by providing a unique, fulfilling, and invigorating recreational experience in an alpine setting. This MDP utilizes innovative mountain planning techniques that will enhance the guest experience while maintaining appropriate skier densities and respecting the uniqueness of Snowmass’ natural environment.

Since 2003 Snowmass and the Town of Snowmass Village (TOSV) have undergone a major transformation. The mountain has seen the replacement of antiquated lift systems with state-of-the-art lift technology. In addition, a major transformation has taken place at the base of the mountain with the construction of the Base Village complex that includes new lodging and retail

¹ White River National Forest Land and Resource Management Plan, 2002 Revision, p. 3-81



opportunities for guests visiting Snowmass, and the White River National Forest (WRNF), for winter and summer recreation.

Nationally, the ski industry set an all-time record in annual skier visits in 2007/08 and 2010/11, with approximately 60.5 million visits. Over the last ten seasons (2004/05–2013/14), the average number of visits recorded nationally was 57.3 million. Skier visits during the 2007/08 and 2010/11 seasons were 5.2% above this ten year average. Despite the distinct national economic downturn in 2009, the 2008/09 ski season displayed the remarkable resilience of the ski industry.² The 2011/12 season saw a significant downturn, but skiers visits have since rebounded. These years of generally consistent growth can be seen as a strong indicator of the industry's durability in challenging economic times.

Exceeding the 60 million visit threshold during the 2007/08 and 2010/11 seasons was a significant milestone for the ski industry. These years highlight an era of strong performance within the U.S. ski industry that has been ongoing since the 2000/01 season, in which visits have reached 56 to 60 million in good years and 54 to 55 million in poor years—both significantly above the levels recorded in previous decades.³

Given the growth in the national skier market, it is important for resorts to constantly evaluate their offerings to serve the demand for Alpine skiing. This MDP seeks to proactively address future trends in both winter and summer recreation at Snowmass. Understanding that guests' preferences are constantly changing, this MDP will address those trends in proactive and creative ways. In so doing, the plan will reinforce the values of the TOSV community, the business objectives of Aspen Skiing Company (ASC), and the natural resource and recreational goals of the WRNF.

In addition to its consistency with the 2002 Forest Plan, this MDP is consistent with the Ski Area Recreational Opportunity Enhancement Act of 2011 (SAROE) and subsequent Forest Service guidance, which permit additional seasonal and year-round activities and

facilities on National Forest System (NFS) land that meet the setting and support snow sports as a primary driver for recreation and revenue at Snowmass.

A. LOCATION

Snowmass is located on lands managed by the Aspen-Sopris Ranger District of the WRNF, and by TOSV. Snowmass is located approximately 200 miles west of Denver, 40 miles southeast of Glenwood Springs, and 6 miles west of Aspen. The resort is accessed by Brush Creek Road or Owl Creek Road, both of which connect to Colorado State Highway 82. Refer to Figure I-1 for a map of the vicinity.

The SUP area encompasses approximately 4,745 acres of land within the Brush Creek and Spring Creek drainages. The ski area is contained within Sections 1-3, 10-15, 22-24, and 26, Township 10S, Range 86W, and within Sections 6, 7, and 17-20, Township 10S, Range 85W. The elevation ranges from approximately 8,100 feet above mean sea level (amsl) at the base, to 12,500 feet amsl at the summit.

B. LAND OWNERSHIP

The ski area sits on 5,606 acres—4,745 acres are within the Forest Service-administered SUP area and 861 acres are located on private land. Not all private lands within the ski area are ASC-owned, but ASC retains easements on those lands not under their ownership. All private lands, regardless of owner, are located within the TOSV "REC" Zone District. Refer to Figure I-2 for a Property Ownership map.

C. CURRENT RESORT OPERATIONS SUMMARY

The facilities and infrastructure at Snowmass are owned and operated by ASC, a privately-held corporation that also owns/operates Aspen Mountain, Aspen Highlands, and Buttermilk Mountain. As one of ASC's four resorts, it enjoys wide-spread renown as one of the world's premier destination resorts. It attracts a wide national and international destination market, but is also a regional destination, and thus sees significant visitation from local markets.

² National Ski Areas Association. 2014. Kottke National End of Season Survey 2013/14. August.

³ Ibid.

As shown in Table I-1, Snowmass' annual visitation over the past ten seasons has averaged 750,000 with fluctuations resulting from varying snowfall and economic conditions. However, since the period's low mark of 694,773 in 2008/09, there has been a strong upward trend, with a 15% growth in annual skier visits between 2008/09 and 2013/14. Snowmass averages 142 operational days per season.

1. Winter

Snowmass offers 3,342 acres of total skiable terrain spread amongst five distinct skiing pods: Elk Camp/Two Creeks, Big Burn, Sam's Knob, Campground, and Alpine Springs. Of this total, approximately 1,486 acres are developed ski runs. An additional 1,101 acres fall into the category of lift-accessed and/or hike-to terrain that is controlled (gated) but minimally maintained (including bowls, glades, chutes, and hike-to terrain). The remaining 755 acres represents the natural forest stands and above-timber areas between and around the developed terrain. The total terrain quantity within each pod is approximately shown in Table I-2.

Two lifts serve as the primary mountain access options from the main Snowmass Village base area. The Village Express accesses the Sam's Knob, Big Burn, and Campground pods while the Elk Camp Gondola accesses the Elk Camp/Two Creeks and Alpine Springs pods. An additional access option is provided by the Two Creeks lift, with parking, bus drop-off, food service, etc. Mountain access is also available from the Snowmass Creek valley via the Campground lift.

Snowmass is currently served by 20 lifts:

- 1 eight-passenger detachable gondola
- 1 six-passenger pulse gondola
- 1 six-passenger detachable chairlift
- 7 detachable quad chairlifts
- 2 fixed-grip quad chairlifts
- 2 fixed-grip double chairlifts
- 1 detachable platter lift
- 1 fixed-grip platter lift
- 4 conveyor lifts

Table I-1. Annual Skier Visits (2004–2014)

Season	Visitation
2013/14	799,614
2012/13	754,819
2011/12	731,786
2010/11	737,066
2009/10	725,709
2008/09	694,773
2007/08	771,455
2006/07	769,572
2005/06	768,010
2004/05	747,304
Ten-Year Average	750,011

Table I-2. Terrain Quantity by Pod

Pod	Acreage
Elk Camp/Two Creeks	942
Big Burn	616
Sam's Knob	336
Campground	210
Alpine Springs	1,238
Total	3,342



The following programs and uses are a part of Snowmass' winter resort operations:

- Alpine skiing, snowboarding, nordic downhill, snowshoeing, ski biking, backcountry tours, and other snow sports activities supported by chairlifts
- Learning activities and lessons for all listed activities
- Construction and maintenance of terrain parks for all levels of skiers and snowboarders
- Nastar racing and special events/competitions in all of the noted program uses
- Filmmaking for in-house marketing/advertising needs
- A wide variety of children's programs
- Nature tours both inside and outside (by permitted outfitters/guides) the ski area boundaries
- Snow tubing during daytime and evening hours
- On-mountain food service, retail opportunities and performance centers
- On-mountain concerts and festivals on private lands (additional review per Forest Service Manual [FSM] 2340 required for such activities on NFS lands)
- Nighttime activities and dining opportunities at on-mountain facilities with access via lifts or snowcats
- Snowmaking and snow grooming activities
- Vehicle and lift maintenance activities

2. Summer

Current *summer* resort operations at Snowmass primarily include dispersed activities, specifically lift-served hiking and mountain biking via the Elk Camp gondola and chairlift, as well as multiple-use trails on the western side of the mountain around Sam's Knob. Non-lift-served activities are also popular at Snowmass. Trails within the SUP area connect with a well-established trails network outside the Snowmass SUP area on NFS lands and on private lands within TOSV.

Additional summer resort operations include various recreational opportunities, some of which have been offered at Snowmass since the 1990s. These activities are particularly important to the community and resort guests because they provide opportunities to participate in unique mountain experiences on NFS lands in a comfortable setting. Existing uses and facilities include:

- Scenic chairlift rides providing mountain activity access via the Elk Camp gondola and chairlift
- Food and beverage services at Elk Camp Restaurant
- Hiking trails
- Mountain Biking trails (both cross-country and gravity)
- Fishing pond
- Climbing wall
- Disc golf courses
- Guided nature walks
- Children's playground
- Overnight camping and more

Summer use at Snowmass is generated primarily by visitors staying in Snowmass Village, but the resort's proximity to Aspen and the Roaring Fork Valley is a major factor in summer visitation. While many attractions exist in Aspen and surrounding areas, the nature-based activities provided at Snowmass offer unique experiences for guests.

D. BACKGROUND

As mentioned, Snowmass is primarily situated on land managed by the Aspen-Sopris Ranger District of the WRNF. Snowmass is owned by ASC, and operates under a SUP from the United States Forest Service (Forest Service). The SUP requires the development of an MDP, which identifies management direction and opportunities for future management of the ski area on NFS lands. Portions of the lower mountain, and all commercial and residential areas, are located on private lands within the town limits of TOSV. The portion of Snowmass within TOSV is designated a Specially Planned Area (SPA). All zoning and land use

issues within the SPA are regulated by the TOSV, and projects require a Planned Unit Development (PUD) Amendment prior to implementation.

1. *Chronology of Development*

The initial permit to prepare a proposal for development of Snowmass was issued to the Janss Corporation by the Forest Service in 1964. The ski area was purchased from the Janss Corporations by Darcy Brown, and later by ASC. The Baldy Mountain and Burnt Mountain portions of the ski area were initially permitted for development in the 1960s, opening for the first time in 1967.

Over the next two decades, the most significant environmental reviews for Snowmass took place in 1983 and 1994, after which subsequent development of ski terrain and facilities occurred.

Summer recreation has taken place within the Snowmass SUP area and on adjacent private lands since before the development of the ski area. Historic hiking and pack trails, such as the Government Trail, traversed the mountain and provided access for uses such as hunting and fishing. In recent years, trends in summer recreation, such as scenic lift rides, downhill mountain biking trails, disc golf, and paintball have begun to gain popularity.

In the late-1980s, the popularity of mountain biking began to increase. In the mid-1990s, Snowmass and TOSV collaborated to begin summer operation of the Burlingame lift, offering guests scenic lift rides accessing on-mountain activities, such as hiking and mountain biking. In the summer of 2010, operations were relocated to the Elk Camp area, as was intended by the 1994 Environmental Impact Statement (EIS) and Record of Decision (ROD).

E. ABSTRACT OF PLANNED MASTER DEVELOPMENT PLAN

This MDP is divided into six chapters, with Chapter 1 providing an introduction to the document. Chapter II describes the design criteria used for mountain planning specific to Snowmass. Chapter III provides a site inventory of the resort, including topography, slope analysis, and information relating to the SUP boundary and surrounding land ownership. Chapter IV describes existing resort facilities for both winter and summer,

and evaluates the current balance of resort operations, facilities, and infrastructure. This includes lifts, terrain, guest services, snowmaking, and parking. This chapter also provides the baseline conditions which drive the upgrade plan. Chapter V discusses projects previously approved through Forest Service analysis, but not yet implemented. The final chapter (Chapter VI) details proposed upgrades and improvements to the experience at Snowmass.

This MDP includes several previously approved projects that have not yet been implemented:

- Burnt Mountain lift
- Naked Man lift
- High Alpine lift replacement
- Burnt Mountain trails
- Glading projects totaling 84 acres
- Two ski runs in the Elk Camp area
- Additional snowmaking coverage
- Vapor trail reroute, and mountain biking skills park

Newly-planned projects included in this MDP include the following:

1. *Winter*

- Two additional snowmaking storage ponds
- Various terrain park grading
- Lift upgrades to newer technology
- Addition to Sam's Smokehouse Restaurant
- Various cell tower and data equipment sites
- Proposed changes on private land to the Lynn Britt Cabin and the Spider Sabich Picnic/Race Arena
- Expanded evening activities to include snowcat tours and others in the Elk Camp area
- Remodeled and/or expanded operational, guest service, and food and beverage facilities, including on-mountain huts that offer guests overnight experiences



As a result of proposed and previously-approved changes, the Comfortable Carrying Capacity (CCC) for Snowmass will increase from 12,360 guests to 13,600 guests (an increase of 10%).

2. *Summer*⁴

- Alpine Coaster
- Challenge Course
- Zip Line/Canopy Tour
- 20 or more miles of mountain biking trails across portions of the SUP area
- Permanent climbing wall
- Various gathering/special events sites
- Hiking trail system enhancements

F. PAST PLANNING AND ENVIRONMENTAL DOCUMENTATION

Since its inception, Snowmass has undergone several iterations of planning and numerous environmental analyses for site-specific project proposals. The following list provides a summary of these planning and analysis phases:

- 1964 – Original MDP submitted by Janss Corporation and accepted by the Forest Service
- 1967 – Snowmass Ski Area opens
- 1973 – Burnt Mountain development proposal submitted and accepted
- 1974 – SUP Boundary adjusted to include Burnt Mountain
- 1978 – Revised Baldy and Burnt Mountain MDP submitted and accepted by the Forest Service
- 1984 – Baldy and Burnt Mountain revised MDP proposed but not accepted by the Forest Service
- 1994 – Forest Service completes Snowmass Ski Area Environmental Impact Statement and issues Record of Decision

- 1999 – Snowmass Ski Area Natural Resource Management Plan accepted by the Forest Service
- 2000 – Categorical Exclusion (CE) completed and Decision Memo (DM) issued for relocated Burnt Mountain lift bottom terminal
- 2003 – Snowmass Mountain Master Plan Amendment submitted and accepted by the Forest Service
- 2005 – Supplemental Information Report (SIR) authorizes Elk Camp Gondola construction
- 2006 – Environmental Assessment (EA) completed and Decision Notice/Finding of No Significant Impact (DN/FONSI) issued for Burnt Mountain Trails and Traverse
- 2006 – EA completed and DN/FONSI issued authorizing Elk Camp Beginner Park and Multiple Use Summer Trails
- 2007 – EA completed and DN/FONSI issued authorizing Snowmass Winter Terrain Park relocation
- 2010 – Snowmass Mountain Summer MDP Amendment submitted and accepted by the Forest Service
- 2010 – Snowmass Summer Activities DN/FONSI issued authorizing Disc Golf and Overnight Camping
- 2011 – EA completed and DN/FONSI issued authorizing Aspen Skiing Company Forest Health Projects
- 2011 – EA completed and DN/FONSI issued authorizing Snowmass Ski Area Summer Trails
- 2013 – EA completed and DN/FONSI issued authorizing Burnt Mountain Egress Trail construction
- 2014 – CE completed and DM issued authorizing new and realigned bike trails
- 2014 – CE completed and DM issued authorizing Winter Evening Activities
- 2015 – Snowmass Ski Trail Enhancements and High Alpine Lift Replacement EA and DN/FONSI

⁴ Summer activities will be centralized in the Elk Camp area, unless otherwise noted.

issued, authorizing High Alpine lift replacement, glading, snowmaking, and two new ski trails

G. VISION AND DESIGN PHILOSOPHY

Clarifying a vision and design philosophy is essential in the mountain planning process, as it helps to establish an overall theme and direction for all projects. Snowmass has always provided a high-quality experience for guests in a way that develops awareness of the mountain environment and the incredible natural resources that are found within and surrounding the resort. More recently, Snowmass has expanded its offerings to summer and multi-season activities, particularly since visitation by families and larger groups is especially evident in summer months.

Winter recreation at Snowmass is the primary reason the resort is a premier destination for guests not just from around the state, but from around the world. The Snowmass experience remains one of the key reasons guests visit the Aspen/Snowmass area. With more than 3,000 skiable acres, Snowmass offers “something for everyone,” from the very first time beginner to the most adventurous extreme skiers and snowboarders.

The primary objective of the Snowmass experience is to bring all guests closer to nature by providing the most unique, fulfilling and invigorating recreational experience in an alpine setting. The emphasis is on utilizing innovative mountain planning techniques that will enhance the guest experience while maintaining appropriate skier densities and respecting the uniqueness of the resort’s natural environment.

This MDP seeks to proactively address future trends in winter recreation at Snowmass over the next ten to fifteen years. Understanding that guest’s preferences are constantly changing, this MDP will address those trends in proactive and creative ways. By so doing, the plan will reinforce the values of the TOSV community, the business objectives of ASC, and the natural resource and recreational goals of the WRNF.

Summer recreation is fast becoming an opportunity for tourism growth in mountain resort communities across the country. Snowmass and the Aspen/Snowmass area are experiencing more demand as a major summer

destination for guests than in the past. Since the introduction of on-mountain summer activities in the Elk Camp area five years ago, Snowmass is rapidly experiencing increased use by summer guests. General summer survey data for Colorado indicate that summer visitation by families (with children under 18) nearly doubles winter family visitation. Also, in the summer months, larger group visits (e.g., larger families, youth groups, etc.) occur when compared to winter visits.

The development philosophy for Snowmass’ summer programs is to offer unique opportunities for guests to experience the National Forest through recreational activities that are both enjoyable and educational. Snowmass’ location and niche market allow it to provide a more intimate experience for summer guests, with a focus on interpretation of the natural environment and a high level of quality interaction between guests and staff. This philosophy is apparent in the design of planned summer activities, which benefit from varying vegetation, elevation, and habitat types. Additionally, Snowmass plans to incorporate experiential education as fundamental to the operation of these activities.

Summer recreational opportunities popular in mountain resort communities have evolved in the past several decades beyond “traditional” activities, such as hunting, fishing and camping, to include a significant variety of activities that allow guests to experience the natural environment while still feeling comfortable in their surroundings, such as mountain biking, disc golf, and other activities. NFS lands managed under ski area SUPs are well-situated to provide these forms of recreation due to their existing infrastructure, base area facilities, and dedicated staffing. Snowmass’ approach is to provide a sense of adventure and interaction with the setting while eliminating some of the barriers that often prevent guests (particularly families, the elderly/aging or those with disabilities) from participating in outdoor recreational activities.

Consistent with SAREOA (refer to Chapter II), planned projects and activities have been designed to harmonize with the natural environment to heighten the user’s experience with their natural surroundings on the WRNF.



H. STATEMENT OF GOALS AND OBJECTIVES

1. *Winter*

a. Winter Goals

- Capitalize and improve upon the family experience at Snowmass. The success of the children's program at Snowmass is evident as students of the ski school thirty years ago now bring their own children to ski and ride Snowmass. This alone speaks to the value of the existing experience.
- Continue to improve the physical and functional relationship between the mountain, on-mountain facilities and the community enhancing visitor circulation, guest amenities, and lift planning.
- Ensure the on-mountain facilities continue to compliment the Snowmass Base Village as the unfinished elements of the base area are completed.
- Continue to improve the natural character of the mountain terrain by improving skier flow, lift planning, and access to the varied and unique terrain the mountain offers.
- Continue to improve the learning experience for beginners to snow sports that will create life-long enthusiasts and eventual returning guests.
- Create a quality working environment for staff who will, in turn, seek to provide consistent outstanding service.
- Strive to place Snowmass in a position of leadership in the marketplace.
- Provide financial viability for capital improvement spending that is consistent with ASC's Guiding Principles.

b. Winter Objectives

- Complete the Base Village complex so as to benefit our guests and our community.
- Enhance and improve the on-mountain dining experience by modernizing aging facilities.

- Enhance the upper mountain terrain access and user flow by adding and/or modifying existing lift systems and trails.
- Maintain state-of-the-art terrain parks to satisfy the need of that specific demographic to ensure repeat visits.
- Provide improved early season snow conditions in key areas of the middle portions of the mountain.
- Expand the winter activity offerings as guest expectations warrant and new technologies become available to expand the range and enjoyment of winter experiences.

2. *Summer*

a. Summer Goals

- Create programs of natural resource-based recreational opportunities designed to "introduce" many new visiting families to the mountain environment.
- Promote educational and interpretive opportunities through the development of interactive and adventurous natural resource-based recreational opportunities.
- Establish Snowmass as a premier mountain biking destination.
- Provide a wide array of activities that encourage summer visitors to explore the National Forest in a more complete way.
- Develop activities on NFS lands that introduce visitors to the mountain environment without requiring specialized skill or knowledge.
- Provide viewpoints and scenic destinations that are immediately or easily reached by short walks or hikes from lifts and other accessible locations for less active or physically-able visitors.
- Successfully introduce new/young riders to downhill mountain biking.
- Strengthen the overall year-round economy for individuals and the community.

b. Summer Objectives

- Expand beginner/novice level downhill mountain biking opportunities for overall enjoyment and skill improvement.
- Expand the offerings of advanced downhill trails to challenge the most accomplished riders.
- Enhance the mountain biking experience by connecting to the already popular network of cross country trails on Snowmass, and the entire Roaring Fork Valley, both on public and private lands.
- Provide other gravity powered rides (Alpine Coaster and Canopy Tour/Zip Line) to offer non-bike riding guests a similar sensation of traveling through the forest.
- Create a system of “Challenge Courses” to provide unique personal challenge and team building opportunities within the forest setting.
- Provide additional opportunities for exercise and personal challenge with state-of-the-art climbing walls.
- Create event platforms, gathering spots and seating areas to provide venues for unique events that would be enhanced by the surrounding Forest setting.
- Expand and enhance hiking trails and on-mountain opportunities, taking advantage of high alpine terrain and views.

I. ACCEPTANCE BY THE FOREST SERVICE

This MDP is the result of an iterative and collaborative process between Snowmass and Forest Service staff. Forest Service “acceptance” is consistent with the requirements of the Snowmass SUP and the 2002 Forest Plan. This MDP will also undergo analysis and review by TOSV and Pitkin County as necessary to ensure that the goals and objectives presented herein are consistent with those of all other agencies with jurisdiction over the facilities at Snowmass.

Note that Forest Service acceptance of this MDP does not imply authorization to proceed with any of the

projects identified herein. None of the projects identified in this MDP have been reviewed or approved under the requirements of the National Environmental Policy Act (NEPA), and all will require site-specific analyses before a decision can be made, or any projects are approved. Site-specific environmental analysis may result in a modification to planned projects. Furthermore, beyond NEPA analysis, implementation of projects identified in this MDP may be dependent upon approval of detailed plans contained in Snowmass’ annual operations/ construction plans.

J. PUBLIC/MUNICIPAL REVIEW

Because the area included within the Snowmass SUP boundary has historically been annexed into TOSV’s town limits, a Land Use Approval review process will be required by TOSV. This process will involve official notice of public meetings held by TOSV Town Council and will allow ample opportunity for public comments on all aspects of this MDP.

This review process by TOSV will comply with Forest Service requirements to publicly share the vision, goals and objectives of the resort and to seek a mutual understanding of the MDP presented here.



II. DESIGN CRITERIA

Establishing design criteria is an important component in mountain planning. The following is an overview of the basic design criteria upon which the Snowmass MDP is based.

A. DESTINATION RESORTS

One common characteristic of destination resorts is that they cater to a significant vacation market and thus offer the types of services and amenities vacationers expect. At the same time, some components of the destination resort are designed specifically with the day-use guest in mind (e.g., day-use parking). Additionally, the employment, housing, and community services for both full-time and second-home residents created by destination resorts all encourage the development of a vital and balanced community. This interrelationship is helpful to the long-term success of the destination resort.

Destination mountain resorts can be broadly defined by the visitation they attract, which is, in most instances, either regional or national/international. Within these categories are resorts that are purpose-built and others that are within, or adjacent to, existing communities. Snowmass and the incorporated resort community of TOSV is an example of such a resort that exists adjacent to an existing community (Aspen) that is rich in cultural history, and provides a destination guest with a sense of the Mountain West and the mining and ski history of Colorado. This combination of a desirable setting

and history supplements the overall experience of a guest visiting Snowmass, which has become a regional, national, and international destination resort.

B. REGIONAL DESTINATION RESORTS

Regional destination resorts largely cater to a “drive” market. While day-use guests play a large role, the regional destination resort also appeals to vacationers. At some regional destination resorts, lodging is a component. However, due to the average length of stay, and perhaps more importantly a regional guest’s vacation budget, lodging and related services and amenities are usually less extensive than what is common for national/international destination guests. This is not the case at Snowmass. Where the regional destination resort has evolved from within, or adjacent to, an existing community, services are often supplied by proprietors in the existing community. Even though a portion of the services offered in Aspen, and even Carbondale and Basalt, cater directly to guests of the resort or summer vacationers to Pitkin County, proprietors within the towns also supply services to “locals,” which helps maintain the balanced lifestyle that permanent residents and second home owners enjoy.



C. NATIONAL AND INTERNATIONAL DESTINATION RESORTS

National and international destination resorts appeal and cater to a significant “fly-in” market, due to a combination of the unique character and level of services offered by the mountain facilities and/or base village (or the City of Aspen, in Snowmass’ case). Snowmass’ national/international guest expectations are higher than those of many of their regional destination guests. These guests expect abundant opportunities to participate in a variety of vacation experiences. This mindset stems from the expectation that their destination vacation will likely represent the apex of their skiing season, and hence their appetite for varied experiences will be great. In addition to a weeklong visit, guests may also desire to involve themselves in the resort and community on a more regular or permanent basis (through ownership of real estate and part-time residency).

There is a growing demand for mountain destination resorts to provide activities outside of snow sports. At some of the more mature mountain destinations, non-skiing wintertime guests account for a very substantial percentage of overall guest population. Furthermore, many of the guests who do ski will not use the mountain facilities every day of their visit. Thus, the ratio of total days skied to total room-nights can be as low as 1:2. Even for day-use guests at a destination resort, skiers are spending less of their day on the mountain. This is due to several factors, including: (1) shifting expectations of what a mountain vacation is about (participation in a variety of experiences, not just skiing); (2) the advent of high-speed lift technology (allows guests to satisfy their vertical demand in a shorter period of time); and (3) an aggregate population of guests, which is aging and requires lesser amounts of vertical demand. In the summer, the resort and community have very high summer utilization due to a dramatic increase in summer mountain vacations. All of these trends add up to a significant demand for attractions and amenities that complement a resort’s skiing facilities.

National and international destination resorts, including Snowmass and Aspen, offer a wide variety of lodging types, including hostels, motels, hotels, inns, bed and breakfast inns, townhomes, condominiums, and

single family chalets. Visitor participation in the real estate market has diversified substantially in the last two decades and includes ownership—either whole or fractional—as well as “usage,” which comes in forms like timeshare and club participation. Typically, where the mountain facility is a primary driver for visitation, lodging is clustered at or near the mountain’s base area. Amenities usually include a wide variety of restaurants, lounges, shops, conference facilities, and perhaps theatres or concert venues, recreation centers (e.g., swimming, fitness equipment, and indoor courts), etc. Aside from Alpine skiing, recreational activities may include snow tubing, Nordic skiing, snowshoeing, sleigh rides, snowmobiling, mountain and road biking, walking, golf, tennis, horseback riding, angling, swimming, spa treatments, etc.

A mountain resort that evolves at the edge of an existing community—particularly one that has a tourism-based economy—typically benefits from the significant infrastructure already in place (i.e., there is less need for a resort to develop infrastructure and create services at the base of the mountain). Some mountain facilities have evolved immediately adjacent to the town and hence have developed virtually none of their own destination services.

D. BASE AREA DESIGN

The relationship between planning at a resort’s base area developments and on-mountain lift and terrain network is critically important. This relationship affects the overall function and perception of a resort.

Design of the base lands at a mountain resort involves establishing appropriate sizes and locations for the various elements that make up the development program. The complexion and interrelationship of these elements varies considerably depending on the type of resort and its intended character. However, fundamental objectives of base area planning are to integrate the mountain with the base area for the creation of an attractive, cohesive, and functional recreational and social experience. This is essential to creating the feeling of a mountain community, and can only be achieved by addressing base area components such as (but not limited to): guest service locations, skier/rider circulation,

pedestrians, parking/access requirements, and mass-transit drop-offs.

Planners rely on resort layout as one tool to establish resort character. The manner in which resort elements are inter-organized, both inside the resort core and within the landscape setting, along with architectural style, help to create the desired character.

Skier service facilities are located at base area and on-mountain buildings. Base area staging locations, or portals, are “gateway” facilities that have three main functions:

- Receiving arriving guests (from a parked car, a bus, or from adjacent accommodations)
- Distributing the skiers onto the mountain’s lift and trail systems
- Providing the necessary guest services (e.g., tickets and rentals)

E. MOUNTAIN DESIGN

1. Trail Design

a. Slope Gradients and Terrain Breakdown

Terrain ability level designations are based on slope gradients and terrain features associated with the varying terrain unique to each mountain. In essence, ability level designations are based on the maximum sustained gradient calculated for each trail. While short sections of a trail can be more or less steep without affecting the overall run designation, a sustained steeper pitch may cause the trail to be classified with a higher difficulty rating.

The following general gradients are used to classify the skier difficulty level of the mountain terrain.

The distribution of terrain by skier ability level and slope gradient is compared with the market demand for each ability level. It is desirable for the available ski terrain to be capable of accommodating the full range of ability levels reasonably consistent with market demand. The market breakdown for the Rocky Mountain skier market is shown in Table II-2.

b. Trail Density

The calculation of capacity for a ski area is based in part on the target number of skiers and riders that can be accommodated, on average, on a typical acre of terrain at any one given time. The criteria for the target range of trail densities for North American ski areas are listed in Table III-2.

Table II-1. Terrain Gradients

Skier Ability	Slope Gradient
● Beginner	8 to 12% (5–7°)
● Novice	to 25% (15°)
■ Low Intermediate	to 35% (20°)
■ Intermediate	to 45% (25°)
◆ Advanced Intermediate	to 55% (30°)
◆ Expert	over 55% (30°)

Table II-2. Ability Breakdown

Skier Ability	Percent of Skier Market
● Beginner	5%
● Novice	15%
■ Low Intermediate	25%
■ Intermediate	35%
◆ Advanced	15%
◆ Expert	5%

Table III-2. Skier Density per Acre

Skier Ability	Trail Density
● Beginner	25–35 skiers/acre
● Novice	12–25 skiers/acre
■ Low Intermediate	8–20 skiers/acre
■ Intermediate	6–15 skiers/acre
◆ Advanced	4–10 skiers/acre
◆ Expert	2–5 skiers/acre
◆ Bowls/Glades	0.5 skier/acre



ASC strategically maintains low trail densities across its resorts to ensure the high quality experience expected by its destination guests. Therefore, this MDP will use the lower end of the ranges for planning purposes.

These density figures account for the skiers that are actually populating the trails and do not account for other guests who are either waiting in lift lines, riding the lifts, or using the milling areas or other support facilities. Empirical observations and calculations indicate that, on an average day, approximately 40% of the total number of skiers/riders at a typical resort are on the trails at any given time. Additionally, areas on the mountain such as merge zones, convergence areas, lift milling areas, major circulation routes, and egress routes experience higher densities periodically during the day.

c. Trail System

A resort's trail system should be designed to provide a wide variety of terrain to meet the needs of the entire spectrum of ability levels as well as the resort's particular market. Each trail should provide an interesting and challenging experience within the ability level for which the trail is designed. Optimum trail widths vary depending upon topographic conditions and the caliber of the skier/rider being served. The trail network should provide terrain for the full range of ability levels consistent with each level's respective market demand.

In terms of a resort's ability to retain guests, both for longer durations of visitation and for repeat business, one of the more important factors has proven to be terrain variety. This means providing developed runs for all ability levels: some groomed on a regular basis and some not—bowls, trees, and terrain parks and pipes.

In summary, a broad range of terrain satisfies skiers/riders from beginner through expert ability levels within the natural topographic characteristics of the ski area.

d. Terrain Parks

Terrain parks have become a vital part of most mountain resorts' operations, and are now considered an essential mountain amenity. The presence of terrain parks at mountain resorts has changed various operational and design elements. The demand for grooming can increase, as terrain parks often require specialized or dedicated

operators, grooming machines, and equipment (such as half-pipe cutting tools). Terrain parks typically require significant quantities of snow, either natural or man-made, often increasing snowmaking demand. Terrain parks can affect circulation on the mountain, as the parks are often points of destination.

2. *Lift Design*

The goal for lift design is to serve the available terrain in an efficient manner, i.e., having the minimum number of lifts possible while fully accessing the terrain and providing sufficient uphill capacity to balance with the available downhill terrain capacity. In addition, the lift design has to take into consideration such factors as wind, round-trip utilization of the terrain pod, access needs, the ability to connect with other lift pods, the need for circulation space at the lower and upper terminal sites, access to residential development, and the presence of natural resources (e.g., visual impacts, wetlands, and riparian areas). The vertical rise, length, and ride time of lifts across a mountain are important measures of overall attractiveness and marketability of any resort.

3. *On-Mountain Guest Services*

On-mountain guest service facilities are generally used to provide shelter, food service (cafeteria-style or table service), restrooms, and limited retail, as well as patrol/first aid and other guest services, in closer proximity to upper-mountain terrain. This eliminates the need for skiers and riders to descend to the base area for similar amenities. It has also become common for resorts to offer ski/board demo locations on-mountain, so skiers and riders can conveniently test different equipment throughout the day.

F. **CAPACITY ANALYSIS AND DESIGN**

In ski area planning, a "design capacity" is established, which represents a daily, at-one-time guest population to which all ski resort functions are balanced. The design capacity is a planning parameter that is used to establish the acceptable size of the primary facilities of a ski resort: ski lifts, ski terrain, guest services, restaurant seats, building space, utilities, parking, etc.

Design capacity is commonly expressed as “Comfortable Carrying Capacity,” “Skier Carrying Capacity,” “Skiers at One Time,” and other ski industry-specific terms. These terms refer to a level of utilization that provides a pleasant recreational experience, without overburdening the resort infrastructure. Accordingly, the design capacity does not normally indicate a maximum level of visitation, but rather the number of visitors that can be “comfortably” accommodated on a daily basis. Design capacity is typically equated to a resort’s 5th or 10th busiest day, and peak-day visitation at most resorts is at least 10% higher than the design capacity.

This MDP will use the term Comfortable Carrying Capacity (CCC) when referring to Snowmass’ design capacity. The accurate estimation of the CCC of a mountain is a complex issue and is the single-most important planning criterion for the resort. Related skier service facilities, including base lodge seating, mountain restaurant requirements, restrooms, parking, and other guest services are planned around the proper identification of the mountain’s true capacity.

CCC is derived from the resort’s supply of vertical transport (the vertical feet served combined with the uphill hourly capacities of the lifts) and demand for vertical transport (the aggregate number of runs desired multiplied by the vertical rise associated with those runs). The CCC is calculated by dividing vertical supply (VTF/day) by vertical demand, and factors in the total amount of time spent in the lift waiting line, on the lift itself, and in the descent.

G. BALANCE OF FACILITIES

The mountain master planning process emphasizes the importance of balancing recreational facility development. The sizes of the various guest service functions are designed to match the CCC of the mountain. The future development of a resort should be designed and coordinated to maintain a balance between accommodating guest needs, resort capacity (lifts, trails, and other amenities such as tubing), and the supporting equipment and facilities (e.g., grooming machines, day lodge services and facilities, utility infrastructure, access, and parking). Note that it is also important to ensure that the resort’s CCC balances with these other components,

and services at the resort. Since CCC is primarily derived from the resort’s lift network, it is possible to have a CCC that is effectively lower or higher than the other resort components.

H. MULTI-SEASON RECREATION ACTIVITIES

In light of the increasing challenges of operating a sustainable ski resort given the seasonal nature of the typical six-month operating season, there has recently been a great deal of interest within the industry in developing multi-season recreation facilities and activities for guests. As discussed in Chapter I, summer recreational activities tend to attract a more diverse range of new guests than does skiing. This comprehensive resort planning process assesses the best approach and program for adding multi-season activities and facilities in order to have the greatest potential for success given the unique characteristics that define Snowmass and its markets, and then will create a “road map” for their implementation.

A strategic approach must be taken to identify reasonable and realistic opportunities for multi-season recreational activities. This approach involves a case-by-case examination of several important criteria to determine the multi-season recreation elements that have the greatest potential for success. Criteria such as suitability of available land for recreation facilities and/or activities, operational compatibility with existing or proposed facilities, initial fiscal considerations, and visitation potential are all explored within this MDP. Undertaking such a comprehensive exercise leads to a multi-season recreation program comprised of recreation facilities and/or activities that are suitable for implementation and will align with operational goals and performance expectations.

Providing diverse opportunities to a spectrum of visitors is key to Snowmass’ summer activity goals. Non-skiing and multi-season activities are, and will continue to be, important guest offerings at Snowmass because summer recreational activities tend to attract a more diverse range of new guests than do skiing and snowboarding (e.g., more balanced gender demographics, older median age,



and more families), which is essential to the continued success of the resort.

As a four-season recreation destination, Snowmass has the opportunity to both provide and promote interactive, educational, natural resource-based recreation activities for all ages and demographics. Increasingly, there is potential to reach a wide range of ages and demographics, including those not currently being reached, through multi-season recreation activities. Activities such as mountain biking and hiking can appeal to the more fit and skilled user, while activities such as canopy tours and zip lines can appeal to less adventurous guests and persons with disabilities. Snowmass desires to facilitate exciting, challenging and appropriate use of NFS lands, and in the process, to introduce new user groups to the range of recreational opportunities that exist within their National Forests.

Currently, Snowmass provides a relatively narrow range of previously-authorized summer activities concentrated around the Elk Camp area. These activities include scenic lift rides, hiking, mountain biking, fishing, guided nature tours, disc golf, a climbing wall, playground, camping, and various summer camp-related activities. These activities and associated infrastructure currently provide few opportunities for summer guests and therefore provide only a limited introduction to the National Forest.

Snowmass has a tremendous opportunity to introduce guests, who often live in more urban and suburban environments, to the National Forest and a natural alpine environment in a fun and comfortable setting. Opportunities for environmental education, stewardship and overall public lands awareness are present across the Snowmass SUP area. Developed activities in an appropriate setting will promote these opportunities, thereby achieving the goal of encouraging guests to further explore their public lands while feeling comfortable doing so. The Forest Service has acknowledged a demonstrated need to encourage the public, particularly youth, to explore the lands within the National Forests. As an identifiable and accessible portal to NFS lands, Snowmass has a unique opportunity to meet this need through the provision of a range of

recreational opportunities experiences suitable to the diverse public groups that live in and visit the area.

The activities described in this MDP are designed to utilize existing ski area infrastructure (e.g., chairlifts and guest services facilities) to the extent possible in order to enhance existing snow sports activities with multi-season activities. In doing so, the projects included in this MDP will improve utilization of ski area infrastructure and ensure the long-term, year-round viability of Snowmass and the local economy, particularly during the summer months. Snow sports are, and will continue to be, the primary use of NFS within the Snowmass SUP area, and are the primary economic driver for TOSV.

At a macro level, the Snowmass SUP area is designated within the 2002 WRNF Forest Plan to have a Recreation Opportunity Spectrum (ROS) setting of “Rural,” which is described as:

“Predominantly a culturally modified setting where the natural environment has been substantially modified, i.e., structures are readily apparent, pastoral or agricultural or intensively managed, wildland landscapes predominate as viewed from visually sensitive roads and trails. Access is primarily via conventional motorized use on roads. Contact frequency with other users may be moderate to high in developed sites and moderate away from developed sites.”

As stated in the 2002 Forest Plan Final Environmental Impact Statement:

“Recreational benefits from ski areas include managed, convenient access to National Forest System lands for visitors participating in such activities as hiking, mountain biking, viewing scenery, skiing, and snowboarding. Ski areas provide year-round natural resource-based recreation. The number of recreation opportunities enhanced by lift served access generally is proportional to the number of acres allocated to the 8.25 management area.”

At a site-specific level, this MDP takes the existing setting, combined with the anticipated use of the area, to establish finer-grain prescriptions. The summer activity zones identified in the Chapter VI of this MDP are based on the existing setting and level of development.

Through the planning process, five distinct zones have been identified within the Snowmass SUP area. These zones consider several characteristics similar to the ROS, including:

- *Access* – the number and function of roads within the area
- *Remoteness* – how far removed an individual feels from human activity
- *Naturalness* – the extent and intensity of development and disturbance within the area
- *Infrastructure* – the amount of and proximity to the built environment

Each of these characteristics is to be considered within the context of Snowmass as a developed ski area. Existing summer recreation and maintenance occurs throughout developed portions of the ski area; therefore, no area within the developed ski area is off limits to administrative access and maintenance.

The Snowmass SUP area is characterized by diverse settings, from developed and modified areas to remote and more primitive areas. The settings that exist within the SUP mirror what a guest could see and experience in different locations across the WRNF, ranging from high alpine environments, to riparian and wetland ecosystems, to forested settings in remote locations. The Scenery Management System (SMS) Scenic Integrity Objective (SIO) of the SUP area is officially designated in the 2002 Forest Plan as Low and Very Low, which are defined as:

Low – The valued landscape character “appears moderately altered.” Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect, and pattern of natural openings, vegetative type changes or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.

Very Low – The valued landscape character “appears heavily altered.” Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect and pattern of natural opening, vegetative type changes or architectural styles within or outside the landscape being viewed. However, deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition.

To harmonize with these characteristics, planned activities within this MDP have been designed to correspond with the characteristics of these SIOs. Throughout implementation of the projects discussed in this MDP, ASC will work with the Forest Service to exceed these objectives as practicable.



III. SITE INVENTORY

Chapter III provides a brief overview of some of the unique physical characteristics of the SUP area that were taken into consideration in the preparation of this MDP.

A. TOPOGRAPHY AT SNOWMASS

The topography at Snowmass can be generally described as three separate peaks: Elk Camp, The Cirque, and Sam's Knob. The topography at Snowmass is typical of this portion of the Rocky Mountains, consisting of a series of ridges and glaciated bowls with relatively flat terrain in the valleys. The ski terrain lies in the mostly north-facing slopes of these peaks and bowls, with some terrain falling to the east and west off of the northward running ridges. This is an ideal topographic scenario for a ski area, as it provides a variety of aspects as well as efficient access and circulation to the terrain. Flatter areas in portions of the resort provide the most significant challenge to circulation within the ski area. Slopes range from near vertical in cliff zones to almost flat in the base area. This type of topography allows for a range of skiing opportunities.

The highest elevations at Snowmass are The Cirque at 12,510 feet amsl, and High Alpine at 11,775 feet amsl. The lowest elevation is at the bottom terminal of Two Creeks lift at 8,110 feet amsl. Thus, total vertical drop at Snowmass is approximately 4,400 feet. The base village is located at 8,606 feet amsl.

B. SLOPE GRADIENTS AT SNOWMASS

As discussed in Chapter II, terrain ability level designations are based on slope gradients and terrain features associated with the varying terrain unique to each mountain. Regardless of the slope gradient for a particular trail, if it feeds into a trail that is rated higher in difficulty, its ability level must be rated accordingly. Conversely, if a trail is fed only by trails of a higher ability level than the maximum slope of the trail would dictate, it also must be rated accordingly.

Slope gradients at Snowmass are depicted in Figure III-1.

- 0 to 8% (0 to 5 degrees): too flat for skiing and riding, but ideal for base area accommodations and other support facility development
- 8 to 25% (5 to 15 degrees): ideal for Beginners and Novices, and typically can support some types of development
- 25 to 45% (15 to 25 degrees): ideal for Intermediates, and typically too steep for development
- 45 to 70% (25 to 35 degrees): ideal for Advanced and Expert skiers/riders, and pose intermittent avalanche hazards



C. SOLAR ASPECT AT SNOWMASS

Slope aspect plays an important role in snow quality and retention. The variety of exposures at Snowmass present opportunities to provide a range of slope aspects that allow guests to respond to changes in sun angle, temperature, wind direction, and shadows. The following are typical constraints in relation to the various angles of exposure:

- *North-facing*: ideal for snow retention, minimal wind scour, minimal sun exposure
- *Northeast-facing*: ideal for snow retention, minimal wind scour, minimal sun exposure
- *East-facing*: good for snow retention, some wind scour, morning sun exposure
- *Southeast-facing*: fair for snow retention, moderate wind scour, morning and early afternoon sun exposure
- *South-facing*: at lower elevations, poor for snow retention, moderate wind scour, full sun exposure
- *Southwest-facing*: poor for snow retention, high wind scour, full sun exposure
- *West-facing*: good for snow retention, high wind scour, late morning and afternoon sun exposure
- *Northwest-facing*: good for snow retention, moderate wind scour, some afternoon sun

As described in the topography section, the majority of the skiing terrain at Snowmass faces north, with some eastward and westward facing aspects. This range of exposures is ideal, allowing for good snow retention while providing a variety of sun exposures and snow conditions. East facing slopes, such as some of the runs off of the Village Express and Sheer Bliss lift, provide decent snow retention and also have good sun exposure, particularly in the mornings. North-facing slopes provide better snow retention, and are found throughout the resort, such as in the Elk Camp, High Alpine, Alpine Springs, and Sam's Knob areas. These areas have consistently good snow conditions. The west-facing slopes off of the Campground lift and in portions of Elk Camp, are protected from the sun in the mornings but get sun exposure in the afternoons.

- >70% (>35 degrees): too steep for all but the highest level of skiing/riding. These areas are typically allocated as Expert-only and are closely managed by the resort operator for avalanche control.

As displayed in Figure III-1, slope gradients covering all ability levels are present, but the majority of the terrain is characterized by novice- to intermediate-level gradients. As described in the topography section, the terrain at Snowmass is largely characterized by peaks and bowls, with some ridges and sub-ridges. The bottoms of the bowls and sub-bowls tend to be quite flat, in some cases even too flat for consistent skiing. The terrain dropping off the ridges and sub-ridges tends to be quite steep, in a few locations steeper than desired for skiing. In some cases, this presents challenges for consistent fall-line skiing, but the majority of the ski area has consistent grades. For example, consistently Intermediate-level slopes are found in the Elk Camp and Big Burn areas. The most consistent novice-level terrain is found off the mid-station of the Village Express and in the Two Creeks area. Consistent advanced-level gradients are very limited, with a few locations found in the Sam's Knob and Campground areas.

IV. EXISTING FACILITIES

This section contains an examination and analysis of existing facilities at Snowmass. Completion of a thorough resort inventory is the first step in the master planning process and involves the collection of data pertaining to the resort's existing facilities. This inventory includes lifts, trails, the snowmaking system, base area and on-mountain structures, guest services, other resort functions/activities, day-use parking, operations, and utilities/infrastructure. The analysis of the inventoried data involves the application of industry standards to existing conditions at Snowmass. This process allows for the comparison of the resort's existing facilities to those facilities commonly found at resorts of similar size and composition.

The overall balance of the existing resort is evaluated by calculating the capacities of various facility components and then comparing these capacities to the resort's CCC. This examination of capacities helps to identify strengths, weaknesses, opportunities, and constraints as a resort. The next step is the identification of any improvements which would bring the existing facilities into better equilibrium, and assist the resort in meeting the ever-changing expectations of its marketplace. Accomplishing these objectives will result in a well-balanced resort which provides an adequate array of services and experiences to satisfy guest expectations for a quality recreation experience.

The examination of existing facilities presented in this chapter correlates with Figure IV-1.

A. SUMMARY OF THE EXISTING GUEST EXPERIENCE

The overall infrastructure of lift installations, terrain offerings, snowmaking systems, on-mountain restaurants, and miscellaneous support buildings/facilities have been continually upgraded since 1967. However, the infrastructure improvements that have taken place in the past ten years have been the most significant allowing Snowmass to offer a superior guest experience consistent with its stated goals.

As a result, Snowmass has become a premier destination for guests not just from around the state, but from around the world, offering more than 3,000 skiable acres, with terrain choices for everyone from the very first time beginner to the most adventurous extreme skiers and snowboarders.

Determining the resort CCC is an important first step in evaluating the overall guest experience because it enables planners to understand the overall balance of the recreational facility. Empirical observations and a close examination of principal components at Snowmass reveal the existing mountain is fairly well-balanced.

A resort's CCC is computed by analyzing the resort's supply of, and demand for, vertical lift transport. The



existing CCC at Snowmass was determined to be 12,360 guests. From a terrain standpoint, the resort's trail network has a trail density of approximately 5 skiers-per-acre; this density is on the low side of industry averages. This is a desirable situation that ensures an uncrowded experience, even on peak days. The analysis indicates a close balance between lift capacity and developed terrain capacity.

B. EXISTING LIFT NETWORK

Snowmass currently operates 20 lifts: one eight-passenger detachable gondola, one six-passenger pulse gondola, one six-passenger detachable chairlift, seven detachable quad chairlifts, two fixed-grip quad chairlifts, two fixed-grip double chairlifts, one detachable platter lift, one fixed-grip platter lift, and four conveyor lifts. The resort's existing total uphill design lift capacity has been calculated at 26,992 people per hour (pph). Table IV-1 summarizes the technical specifications for the existing lifts, and Figure IV-1 illustrates the location of existing lifts.

Overall, the Snowmass lift network services the available terrain efficiently and effectively. There are no redundant lift alignments and the only portion of the ski area that is not lift accessible is Burnt Mountain.

A majority of the lifts have been built in the past fifteen years, indicating that widespread lift replacements likely will not be required for some time. The clear exception to this is the High Alpine lift, which is an original lift built in 1978. At 37 years old, the lift is past the average 35-year life expectancy of fixed-grip lifts. Other possible exceptions would be the two detachable lifts built in the 1980s—Big Burn and Coney Glade as well as second-generation detachable-grip lifts such as Alpine Springs and Sam's Knob.

Note that the Bear Bottom Sunkid conveyor lift is used for both skiing and snow tubing. Refer to Section C.5 for a description of the tubing operation. Both skiers and tubers ride the lift simultaneously, with skiing off east side of the conveyor and tubing off the west. Also note that the Treehouse Overflow conveyor is used only intermittently by the children's ski school programs.

Table IV-1. Lift Specifications – Existing Conditions

Lift Name, Lift Type	Top Elev. (ft)	Bottom Elev. (ft)	Verical Rise (ft)	Slope Length (ft)	Avg. Grade (%)	Actual Design Capacity (pers/hr)	Rope Speed (fpm)	Carrier Spacing (ft)	Year Installed
Two Creeks/DC4	9,810	8,110	1,700	9,874	18%	1,640	1,100	161	Poma/1995
Assay Hill/C4	8,523	8,325	197	1,438	14%	1,200	300	60	Poma/2007
Elk Camp Gondola Full/G8	9,803	8,432	1,371	8,659	16%	1,961	1,000	184	Poma/2006
Elk Camp Gondola Upper/G8	9,803	8,526	1,277	7,499	17%	654	1,000	184	Poma/2006
Elk Camp/DC4	11,320	9,779	1,540	7,559	21%	2,020	1,100	131	Poma/1995
Meadows/C4	9,927	9,815	112	1,304	9%	1,200	300	60	Poma/2007
Meadows Sunkid/C	9,837	9,816	21	235	9%	600	160	16	Sun Kid/2007
Bear Bottom Sunkid/C	9,997	9,947	50	440	12%	600	160	16	Sun Kid/2014
Alpine Springs/DC4	10,505	8,987	1,518	7,164	22%	2,400	1,100	110	Poma/1993
High Alpine/C2	11,790	10,400	1,389	4,808	30%	1,200	550	53	Riblet/1978
Cirque Lift/S	12,527	11,741	786	3,981	20%	450	700	93	Poma/1998
Sheer Bliss/DC4	11,857	9,650	2,207	9,283	25%	2,000	1,100	132	Poma/2008
Big Burn/DC4	11,842	9,854	1,989	7,793	26%	2,200	1,000	109	Poma/1987
Coney Glade/DC4	10,103	8,890	1,213	4,931	26%	2,000	1,000	120	Poma/1986
Village Express Full/DC6	10,614	8,461	2,154	10,041	22%	1,876	1,050	201	Poma/2005
Village Express Lower/DC6	9,661	8,461	1,200	6,234	20%	924	1,050	135	Poma/2005
SkyCab/G6	8,601	8,454	146	1,069	14%	530	1,000	135	Poma/2005
Treehouse Sunkid/C	8,601	8,606	5	80	6%	720	80	7	Sun Kid/1997
Treehouse Overflow Sunkid/C	8,553	8,548	5	80	6%	720	80	7	Sun Kid/1995
Scooper Lift/S	9,365	9,137	227	876	27%	428	350	49	Poma/2000
Sam's Knob/DC4	10,619	9,419	1,199	3,869	33%	1,800	1,000	133	Poma/2005
Campground/C2	9,659	8,224	1,435	4,730	32%	664	550	99	Poma/2003

Source: SE Group

c = carpet conveyor s = surface lift

C2 = fixed-grip double chairlift / C4 = fixed-grip quad chairlift

DC4 = detachable quad chairlift / DC6 = detachable six-passenger chairlift

G6 = six-passenger gondola / G8 = eight passenger gondola



C. EXISTING TERRAIN NETWORK

1. Terrain Variety

Terrain variety is the key factor in evaluating the quality of the actual skiing and riding guest experience (as opposed to lift quality, restaurant quality, or any other factor). In Ski Magazine's Reader Resort Ratings, "terrain variety" is consistently ranked as the second most important criterion in readers' choice of a ski destination, behind only snow quality, and ahead of such other considerations as lifts, value, accessibility, resort service, and others. This is a relatively recent industry trend, representing an evolution in skier/rider tastes and expectations. The implication of the importance of terrain variety is that a resort must have a diverse, interesting, and well-designed developed trail system, but also must have a wide variety of alternate-style terrain, such as mogul runs, bowls, trees, open parks, in-bounds "backcountry-style" (i.e., hike-to) terrain, and terrain parks and pipes. At resorts across the nation, there is a growing trend favoring these more natural, unstructured, "semi-backcountry" types of terrain, since the availability of this style of terrain has become one of the more important factors in terms of a resort's ability to retain guests, both for longer durations of visitation and for repeat business.

To provide the highest quality guest experience, resorts should offer groomed runs of all ability levels and some level of each of the undeveloped terrain types. Undeveloped terrain is primarily used by advanced and expert level skiers/riders during desirable conditions (e.g., periods of fresh snow, spring corn, etc.). Even though some of these types of terrain only provide skiing/riding opportunities when conditions warrant, they represent the most intriguing terrain, and typically are the areas that skiers/riders strive to access. Terrain variety is increasingly becoming a crucial factor in guests' decisions on where to visit.

As such, this analysis accounts for three separate types of terrain at Snowmass, totaling 3,342 acres:

- Lift-accessed developed trails for beginner, intermediate, and expert skiers/riders—accounting for 1,486 acres.
- Lift-accessed and/or hike-to terrain that is controlled (gated) but minimally maintained—accounting for 1,101 acres (these areas include bowls, chutes, glades, and other natural terrain that exists above treeline in accessible high alpine areas).
- Undeveloped, densely-treed and/or inaccessible areas within the ski area boundary. This consists primarily of the natural (non-thinned or maintained) forested areas between the defined skiing areas and ski runs, and also accounts for some of the less-accessible open areas in the upper parts of the mountain—these areas total 755 acres of terrain.

2. Developed Alpine Trails

The existing developed Alpine terrain network at Snowmass is depicted on Figure IV-1. This developed, or formalized, terrain network consists of the resort's named, defined, lift-serviced, maintained trails. Despite the importance of undeveloped, alternate-style terrain, formalized runs represent the baseline of the terrain at any resort, as they are where the majority of guests ski/ride. Additionally, developed terrain is usually the only place to ski/ride during the early season, periods of poor or undesirable snow conditions, avalanche closures, and in certain weather conditions. As such, the developed trail network represents an accurate picture of the acreage utilized by the average skier/rider on a consistent basis, as well as that used by virtually all guests during the aforementioned conditions. Therefore, the full capacity of the resort must be accommodated by the total acreage of the developed terrain network, rather than relying on undeveloped terrain (which is not always available).

At Snowmass, it can be difficult to differentiate between the developed terrain and the undeveloped terrain, much of which is either above treeline or just generally open and skiable. Since there is not a distinct edge to many of the trails, it is difficult to define a fixed area for developed trails. This influences the actual usage patterns for the ski area; skiers are found skiing across the entire width of any given area. In quantifying the acreage of developed terrain, a distinct area can be used where trails are defined by tree edges. In open areas where the trails

are not defined by tree edges, a greater width with less-distinct boundaries is used.

Based on the rationale presented in the preceding paragraphs, and for the purposes of this analysis, the developed trail network is calculated by accounting for defined trails within the Snowmass SUP area. As stated, it does not include open bowls, glades, chutes, densely-treed, inaccessible, or hike-to areas. This developed trail network is the basis for the trail acreage calculations, skier/rider classification breakdown, trail capacity, and density formulas. If this analysis were to account for terrain outside of the developed trail network, it would have a misleading effect on those calculations, i.e., lower trail densities, higher capacities, and an incorrect skier/rider classification breakdown. However, terrain outside of the developed network (in this case, open bowls, glades, chutes, and hike-to terrain) is crucial to terrain variety and the overall quality of the guest experience, and thus is addressed later in this section.

The developed trail network accommodates beginner-through expert-level guests on 78 lift-served, named trails or trail segments spanning approximately 1,486 acres. Most beginner and intermediate runs are groomed on a regular basis.

Key aspects of terrain at Snowmass are explored in the following discussions.

a. Beginner and Teaching Terrain

Much of the teaching terrain and programming at Snowmass is in the Elk Camp area, at the top of the Elk Camp gondola. As such, guests ride the gondola up to Elk Camp and can purchase rentals and participate in ski school programs at that location. Additional beginner and teaching terrain is available in the Assay Hill area and associated with the Treehouse Kids' Adventure Center. The vast majority of novice-level terrain is accessed off the mid-unload station on the Village Express.

b. Intermediate/Cruiser Terrain

Snowmass is justifiably well known for its intermediate-level cruising terrain, as there is a large quantity and good variety of this type of terrain. Significant amounts of this type of terrain are found off of the Elk Camp, Big Burn, top of the Village Express, and Alpine Springs lifts.⁵ These areas represent the majority of the intermediate terrain at Snowmass, and are well used. Additionally, intermediate-level terrain is found off of the Two Creeks lift, but this tends to be underutilized due to the low angle of the lower portion of these trails.

c. Maintained Expert Trails

Most of the developed, maintained expert-level trails are found off of the Sam's Knob and Campground lifts. These trails, for the most part, only have short steep sections that make them challenging, with long, relatively flat, run-out sections.

Table IV-2 lists the specifications for all the maintained terrain at Snowmass, including bowls, chutes, glades, and hike-to areas. The table includes all developed trails, glades, and extreme terrain. While most of the traditional formalized trails are readily accessible, Snowmass also contains a large network of lesser developed "gated" terrain, which is discussed later in this section. For purposes of this table, any trail defined as beginner, novice, low intermediate, intermediate, advanced, or expert is a part of the Developed Alpine Trails, as previously discussed. Any trail defined as Chutes/Bowls (Gated), Bowls/Glades (Gated), Chutes/Glades (Gated), Advanced/Expert Glades (Gated), Intermediate Glades, or Hike-to is a part of the Undeveloped but Maintained terrain, as discussed later in this section. Undeveloped/Inaccessible terrain is not addressed in this table.

⁵ Cruiser terrain is described as relatively long ski trails with enough vertical drop that skiers/riders are able to continuously link varying radius turns with minimal interference from cross traffic or breaks in the fall-line. These trails are relatively wide with very good visibility and are groomed on a routine basis.



Table IV-2. Terrain Specifications – Existing Conditions

Trail Area/Name	Top Elev. (ft)	Bottom Elev. (ft)	Vertical Rise (ft)	Slope Length (ft)	Avg. Width (ft)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Creekside	9,686	8,110	1,576	9,760	163	36.4	16%	47%	Intermediate
Cascade	9,609	8,861	748	3,523	127	10.3	22%	38%	Intermediate
West Fork	9,350	8,550	800	5,625	90	11.6	14%	32%	Low Intermediate
Assay Hill	8,514	8,324	190	1,499	194	6.7	13%	15%	Novice
Lone Star	9,810	9,623	187	1,235	131	3.7	15%	29%	Low Intermediate
Bottoms Up	9,639	9,364	275	1,017	178	4.2	28%	36%	Intermediate
Funnel Upper	9,766	9,363	403	2,781	273	17.4	15%	37%	Intermediate
Funnel Lower	9,363	8,460	903	6,359	326	47.6	15%	24%	Novice
Funnel Bypass	9,616	9,488	128	1,418	59	1.9	9%	15%	Novice
Funnel Bypass	9,370	9,320	51	537	51	0.6	9%	14%	Novice
No Name	9,236	9,001	235	1,452	86	2.9	17%	25%	Novice
Eddy Out	9,148	8,661	487	2,586	65	3.8	19%	41%	Intermediate
Slider	9,847	8,974	873	5,238	179	21.6	17%	33%	Intermediate
Bull Run	11,323	9,926	1,396	6,654	473	72.2	21%	35%	Low Intermediate
Grey Wolf	11,310	10,155	1,155	4,904	304	34.2	24%	37%	Intermediate
Bear Bottom	11,303	9,932	1,371	6,443	211	31.1	22%	38%	Intermediate
Gunner's View	10,987	10,070	917	4,611	180	19.1	20%	34%	Low Intermediate
Sandy Park	11,315	9,852	1,462	8,285	201	38.3	18%	44%	Intermediate
EC Meadows	9,928	9,804	124	1,517	405	14.1	8%	14%	Beginner
Naked Lady	10,438	8,996	1,442	7,155	310	50.9	21%	36%	Intermediate
Lodge Pole	10,221	9,720	501	2,126	155	7.6	24%	38%	Intermediate
Log Deck	10,471	9,741	729	3,405	182	14.2	22%	39%	Intermediate
Tom's Trace	9,789	9,353	435	1,829	269	11.3	25%	51%	Advanced Intermediate
Lunkerville	9,866	8,990	876	4,652	233	24.9	19%	36%	Intermediate
Adam's Avenue Lower	9,214	8,638	577	3,726	161	13.7	16%	28%	Low Intermediate
Adam's Avenue Middle Upper	9,396	9,330	65	371	48	0.4	18%	20%	Low Intermediate
Adam's Avenue Middle Lower	9,280	9,240	40	480	81	0.9	8%	13%	Low Intermediate
Adam's Avenue Upper	9,646	9,455	191	1,670	128	4.9	12%	18%	Low Intermediate
Coffee Pot	10,391	9,095	1,295	6,446	158	23.3	21%	38%	Intermediate
Granite	10,298	9,786	513	2,435	118	6.6	22%	43%	Intermediate
Green Cabin Lower	10,453	8,942	1,512	7,987	212	39.0	19%	38%	Intermediate
Green Cabin Upper	11,782	10,264	1,518	6,597	193	29.2	24%	44%	Intermediate
Reidar's	11,774	10,475	1,300	4,390	191	19.3	31%	57%	Expert
Reidar's Glade	10,950	10,450	500	1,230	520	11.7	41%	52%	Expert Glade-Gated
Showcase	11,791	10,527	1,264	4,129	221	20.9	32%	46%	Advanced Intermediate
The Edge	11,797	10,472	1,324	4,488	231	23.8	31%	45%	Advanced Intermediate
Roberto's	11,920	11,427	492	1,483	209	7.1	36%	73%	Chute/Bowl-Gated
Frog Pond Glade	11,448	10,380	1,068	3,472	990	78.9	33%	50%	Expert Glade-Gated
Baby Ruth	11,357	10,738	619	1,462	200	6.7	47%	77%	Chute/Bowl-Gated
Big Spruce	11,211	10,430	781	1,875	286	12.3	46%	74%	Chute/Bowl-Gated
Cassidy's	10,817	10,394	424	991	236	5.4	48%	66%	Expert Glade-Gated
Willy's	10,662	10,242	420	968	425	9.4	49%	75%	Bowl/Glade-Gated
Cookies	10,996	10,545	451	1,104	305	7.7	45%	58%	Expert Glade-Gated
Turkey Trot	10,592	9,802	790	4,928	160	18.1	16%	42%	Intermediate
Turkey Trot Upper	10,490	10,431	59	718	26	0.4	8%	12%	Intermediate
Rocky Mtn. High	12,497	11,795	702	3,860	360	31.9	19%	25%	Low Intermediate
AMF	11,945	11,369	576	1,720	355	14.0	36%	77%	Chute/Bowl-Gated
Cirque Headwall	12,344	11,677	667	2,119	922	44.8	33%	58%	Chute/Bowl-Gated
East Wall	12,192	11,683	509	1,910	356	15.6	28%	82%	Chute/Bowl-Gated
High Traverse	12,501	11,812	689	6,273	149	21.5	11%	55%	Chute/Bowl-Gated
Adios Ridge	11,644	11,209	435	1,085	460	11.5	44%	54%	Chute/Bowl-Gated

Table IV-2. Terrain Specifications – Existing Conditions

Trail Area/Name	Top Elev. (ft)	Bottom Elev. (ft)	Vertical Rise (ft)	Slope Length (ft)	Avg. Width (ft)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Ladder Lower	11,224	10,813	411	859	269	5.3	56%	89%	Chute/Bowl-Gated
Ladder Upper	11,441	11,241	201	414	99	0.9	56%	75%	Chute/Bowl-Gated
Dikes	11,669	10,241	1,428	5,923	949	129.1	25%	60%	Bowl/Glade-Gated
Gowdy's	11,842	11,267	575	1,827	308	12.9	34%	108%	Chute/Bowl-Gated
KT Gully	11,307	11,104	202	466	175	1.9	50%	77%	Chute/Bowl-Gated
Rock Island	11,137	10,675	462	988	493	11.2	54%	88%	Chute/Glade-Gated
Buck Skin	10,715	10,149	566	1,723	330	13.1	35%	73%	Expert Glade-Gated
Sheer Bliss	11,833	9,674	2,158	8,926	497	101.8	25%	44%	Intermediate
Camp 3	10,113	9,690	424	1,489	165	5.6	30%	47%	Advanced Intermediate
Garrett Gulch	10,775	9,852	923	3,460	116	9.2	28%	48%	Advanced Intermediate
West Face	10,928	10,679	249	677	667	10.4	40%	50%	Chute/Bowl-Gated
Free Fall	10,617	10,359	258	526	591	7.1	56%	64%	Expert Glade-Gated
Glissade	10,205	9,940	264	568	104	1.4	53%	60%	Expert
Whispering Jesse	10,901	9,900	1,001	3,390	191	14.9	31%	39%	Intermediate
Trestle	9,880	9,695	185	1,598	83	3.1	12%	38%	Intermediate
Timberline	11,725	9,918	1,807	6,721	204	31.4	28%	40%	Intermediate
Wineskin	11,837	9,972	1,865	6,875	162	25.5	28%	47%	Advanced Intermediate
Dallas Freeway	11,585	10,125	1,461	5,240	179	21.5	29%	42%	Intermediate
Micks' Gully	11,821	10,167	1,654	6,263	230	33.1	27%	42%	Intermediate
Powerline Glades	11,440	10,440	1,000	3,552	676	55.1	29%	43%	Intermediate Glade
Sneaky's	11,837	10,572	1,265	5,931	193	26.2	22%	29%	Low Intermediate
Sneaky's Glade	11,513	10,708	805	3,467	332	26.4	24%	31%	Intermediate Glade
Jack of Hearts	10,719	10,523	197	689	160	2.5	30%	30%	Intermediate
Powderhorn	10,565	8,253	2,312	9,081	146	30.4	27%	56%	Expert
Lower Banzai	9,820	8,895	926	3,865	217	19.2	25%	42%	Intermediate
Cabin	9,766	8,933	833	3,414	274	21.5	25%	45%	Intermediate
Coney Glade	10,096	9,748	348	1,288	466	13.8	28%	39%	Intermediate
Blue Grouse	9,667	8,855	812	3,650	299	25.0	23%	44%	Intermediate
Velvet Falls	9,614	8,857	757	3,348	225	17.3	23%	38%	Intermediate
Nor Way	9,201	9,073	127	756	63	1.1	17%	25%	Low Intermediate
Hal's Hollow	9,580	8,980	600	2,514	195	11.2	25%	40%	Intermediate
Scooper	9,507	9,008	499	2,333	214	11.5	22%	37%	Intermediate
Dawdler	9,638	8,714	924	6,685	194	29.7	14%	28%	Novice
Fanny Hill	8,899	8,462	437	3,175	251	18.3	14%	17%	Novice
Lunchline	10,117	9,428	689	4,784	144	15.9	15%	34%	Low Intermediate
Moonshine	10,191	9,416	775	3,436	205	16.2	23%	47%	Advanced Intermediate
Ute Chute	10,334	9,710	624	1,846	168	7.1	36%	45%	Advanced Intermediate
Fast Draw	10,435	10,036	399	1,103	120	3.0	39%	44%	Intermediate
Max Park	10,579	9,858	721	4,145	423	40.3	18%	43%	Intermediate
Sunnyside	10,609	9,943	666	2,600	122	7.3	27%	44%	Intermediate
Banzai Ridge	10,575	9,854	721	3,267	146	11.0	23%	32%	Low Intermediate
Monks Hood	9,895	9,544	351	2,002	84	3.8	18%	30%	Low Intermediate
Promenade	10,561	9,562	998	2,997	253	17.4	36%	46%	Advanced Intermediate
Zugspitze	10,552	9,420	1,133	3,694	181	15.4	32%	47%	Advanced Intermediate
Slot Upper	10,603	9,443	1,160	3,534	276	22.4	35%	45%	Advanced Intermediate
Slot Lower	9,437	8,228	1,209	5,390	285	35.2	23%	47%	Advanced Intermediate
Wildcat	10,484	9,124	1,360	4,959	145	16.5	29%	45%	Intermediate
Howler Upper	10,009	9,593	416	1,184	84	2.3	38%	47%	Advanced Intermediate
Howler Lower	9,488	9,450	38	367	52	0.4	10%	17%	Advanced Intermediate
Bearclaw	10,046	8,226	1,820	6,546	256	38.5	29%	51%	Advanced Intermediate
Campground	10,621	8,223	2,398	8,510	201	39.2	30%	53%	Advanced Intermediate



Table IV-2. Terrain Specifications – Existing Conditions

Trail Area/Name	Top Elev. (ft)	Bottom Elev. (ft)	Vertical Rise (ft)	Slope Length (ft)	Avg. Width (ft)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Split Tree	11,260	9,909	1,351	4,854	659	73.5	29%	58%	Hike-To
Rio	11,309	9,976	1,334	4,671	483	51.8	30%	51%	Hike-To
A-Line	11,281	9,105	2,176	10,736	302	74.4	21%	48%	Hike-To
Long Shot	11,325	8,121	3,204	16,529	286	108.4	20%	47%	Hike-To
Black Saturday Bowl	10,912	10,343	569	1,952	484	21.7	31%	66%	Chute/Bowl-Gated
Burns Cliffs	11,060	10,793	267	551	415	5.3	57%	83%	Chute/Glade-Gated
Buttermilk	10,953	10,484	469	1,484	490	16.7	34%	65%	Expert Glade-Gated
Cirque Cornice	12,219	11,836	383	1,422	570	18.6	28%	44%	Chute/Bowl-Gated
Coyote Hollow	11,716	10,850	866	3,461	497	39.5	26%	42%	Expert Glade-Gated
Coyote Knob	11,865	11,698	168	390	567	5.1	48%	54%	Chute/Bowl-Gated
East 1 & 2	11,765	11,299	466	1,515	461	16.0	33%	54%	Chute/Bowl-Gated
Glade 1	10,534	10,213	320	632	250	3.6	59%	65%	Expert Glade-Gated
Glade 2	10,482	10,197	285	569	190	2.5	58%	62%	Expert Glade-Gated
Glade 3	10,412	10,172	240	485	221	2.5	57%	61%	Expert Glade-Gated
Hanging Valley Headwall	11,888	11,520	368	1,088	217	5.4	37%	83%	Chute/Bowl-Gated
Hanging Valley Runout	10,273	10,094	179	1,213	308	8.6	15%	22%	Chute/Bowl-Gated
Little Headwall	12,027	11,863	164	543	564	7.0	32%	58%	Chute/Bowl-Gated
North Woods	10,914	10,619	295	975	999	22.4	32%	43%	Chute/Bowl-Gated
Old Man Basin	11,403	11,149	255	791	248	4.5	34%	50%	Chute/Bowl-Gated
Pitch in the Valley	11,129	10,806	323	1,012	317	7.4	34%	56%	Expert Glade-Gated
Possible	11,591	11,503	88	339	65	0.5	28%	40%	Chute/Bowl-Gated
Possible Basin	11,460	11,096	364	745	374	6.4	57%	86%	Chute/Bowl-Gated
Ptarmigan Draw	12,089	11,772	317	1,292	299	8.9	25%	33%	Chute/Bowl-Gated
Rayburn's Chute and Bowl	11,040	10,835	206	598	312	4.3	37%	45%	Chute/Bowl-Gated
Strawberry Patch	10,944	10,567	377	701	157	2.5	64%	75%	Chute/Bowl-Gated
Sun Kiss Glades	11,276	10,910	366	916	373	7.9	44%	66%	Chute/Glade-Gated
Sunspot	10,731	10,453	278	906	501	10.4	32%	41%	Chute/Glade-Gated
Union	10,756	10,295	461	1,211	324	9.0	42%	68%	Bowl/Glade-Gated
Valley Valley	11,173	10,801	372	910	284	5.9	45%	58%	Chute/Bowl-Gated
Wall 1	11,166	10,307	859	2,282	314	16.4	41%	83%	Chute/Bowl-Gated
Wall 2	11,058	10,649	409	736	132	2.2	67%	73%	Chute/Bowl-Gated
Waters	10,555	10,155	400	1,201	278	7.7	36%	66%	Expert Glade-Gated
West 1&2	11,896	11,527	369	968	165	3.7	42%	73%	Chute/Bowl-Gated
TOTAL				411,134		2,587			

d. Terrain Distribution by Ability Level

This terrain distribution analysis considers the 1,486 acres within the developed terrain network at Snowmass (note that Table IV-2 also includes 1,101 acres of chutes, bowls, glades, and hike-to terrain not included in the developed terrain network, but included in the following discussion). The terrain distribution through the full range of ability levels is relatively close to the ideal breakdown for the regional destination skier/rider market. The terrain classification breakdown of the existing resort is set forth in Table IV-3 and Chart IV-1. The last column in the table represents what can be considered the skill level distribution in the relevant skier/rider market and provides a comparison with the actual skier/rider distribution at Snowmass.

Chart IV-1 illustrates a relatively close match between existing terrain distribution at Snowmass and the market demand for beginner-, novice-, and low intermediate-ability levels. The fact that the amount of intermediate terrain exceeds the national market average reflects Snowmass' reputation for having a significant amount of intermediate-level terrain. The slight deficiency of developed advanced- and expert-level terrain is offset by the large amount of undeveloped terrain available, as discussed in the following sections.

3. *Undeveloped and Gladed Terrain*

Snowmass contains a significant amount of maintained undeveloped terrain as well; the topography within the SUP area includes steeps, chutes, bowls, and glades intermingled within, and outside of, the developed and maintained terrain network. The undeveloped terrain at Snowmass fall into two categories: lift accessed undeveloped, but maintained, terrain; and densely-treed, less accessible areas.

a. Undeveloped, but Maintained, Terrain

This type of terrain accounts for 1,101 acres. These areas are detailed in Table IV-2 and include controlled open bowls, glades, chutes, and hike-to terrain. Much of this terrain is “gated,” which allows Snowmass Ski Patrol to control access in the early season, periods of poor or undesirable snow conditions, avalanche closures, and in certain weather conditions. Each of the terrain pods at Snowmass include “gated” areas in addition to formalized

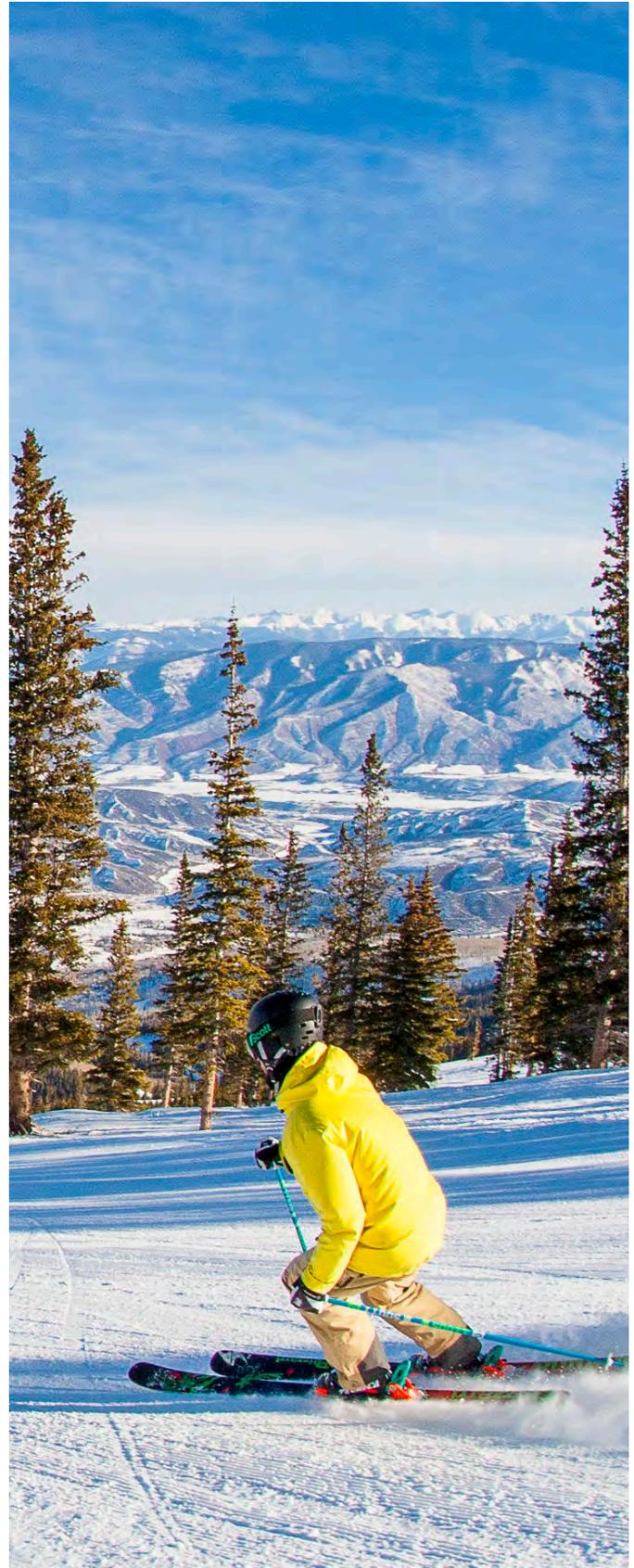


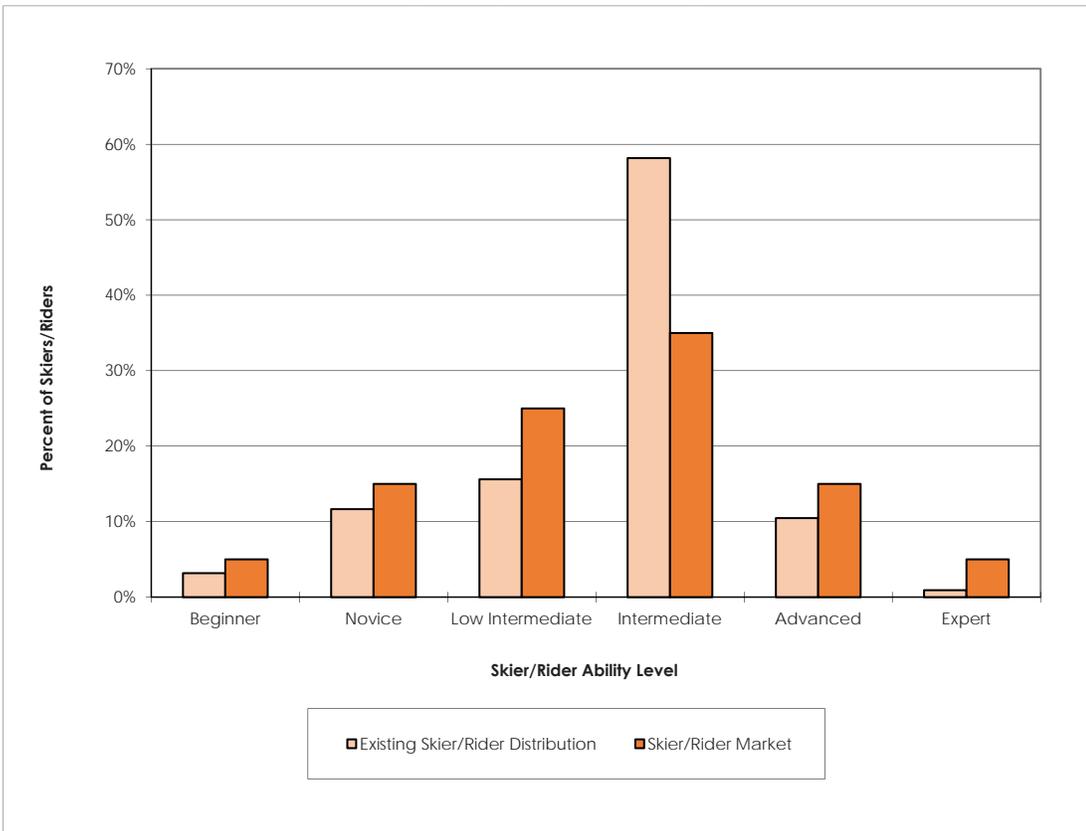


Table IV-3. Terrain Distribution by Ability Level – Existing Conditions

Skier/Rider Ability Level	Trail Area (acres)	Skier/Rider Capacity (guests)	Actual Skier/Rider Distribution (%)	Relevant Skier/Rider Market (%)
Beginner	14	353	3%	5%
Novice	108	1,292	12%	15%
Low intermediate	216	1,732	16%	25%
Intermediate	806	6,452	58%	35%
Advanced	291	1,162	10%	15%
Expert	51	102	1%	5%
TOTAL	1,486	11,092	100%	100%

Source: SE Group

Chart IV-1. Terrain Distribution by Ability Level – Existing Conditions



Source: SE Group

trails. A significant area, for instance, is served by the Cirque lift and exists above, but is part of, the Big Burn pod.

Most of the “gated” terrain (open bowls, chutes, and glades) are accessed off of the Cirque, Sheer Bliss, and High Alpine lifts. Accessing some of these areas either requires taking the High Pass Traverse from the top of Cirque lift, or a short walk. The Burnt Mountain area also offers intermediate gladed terrain that requires a hike from the Elk Camp chairlift.

As discussed previously under “Developed Alpine Trails,” for the purposes of this analysis, the developed trail network does not include open bowls, glades, chutes, and hike-to terrain. Were this analysis to account for terrain outside of the developed trail network, it would have a misleading effect on all of the terrain distribution calculations, as previously discussed. However, terrain outside of the developed network is very important to terrain variety and the overall quality of the guest experience.

Table IV-4 summarizes the maintained, undeveloped terrain at Snowmass.

b. Densely-treed and Less Accessible Areas

This consists primarily of the natural (non-thinned or maintained) forested areas between the defined skiing areas and ski runs, and also accounts for some of the less accessible open areas in the upper parts of the mountain. These areas total 755 acres of terrain.

4. *Terrain Parks*

Terrain parks have become a vital part of most mountain resorts’ operations, and are now considered an essential mountain amenity. Popularity of terrain parks continues to increase, and is dependent on regional location of the resort, demographics of the resort’s target guests, and, significantly, the quality of the parks. A key component to a resort’s overall terrain park strategy is progression, which refers to increasing levels of difficulty in the parks.

To offer skiers and riders of all abilities the chance to improve their freestyle skills, Snowmass currently builds, operates, and maintains numerous terrain parks, with a good progression for first-time park users to experts. The

Table IV-4. Undeveloped Terrain - Existing Conditions

Terrain Type	Trail Area (acres)
Chutes/Bowls (Gated)	325
Bowls/Glades (Gated)	148
Chutes/Glades (Gated)	35
Advanced/Expert Glades (Gated)	204
Intermediate Glades	82
Hike-to	308
TOTAL	1,101

parks are currently located off the Village Express and Coney Glade lifts. Current parks include:

- *Lowdown Park* – Located on Lower Blue Grouse along Village Express lift, this is the introductory park. It consists of beginner- and low intermediate-level features.
- *Makaha Park* – Also located on Lower Blue Grouse along Village Express lift. This is the next progression step up, and consists of all low intermediate- and intermediate-level features.
- *Snowmass Park* – Located below the Coney Glade lift. This park consists of advanced- and expert-level features and also includes the Snowmass Pipe and Superpipe.

It should be noted that several areas of the existing 30-acre Snowmass Park require significant amounts of man-made snow to remove existing cross-slopes and/or create the larger “hits” in the expert portion of the park. Some earthwork/grading would significantly reduce the amount of energy and water required to create these features. The specific areas that could be improved with grading are the 3.5 acres on Banzai Ridge above the Lunchline Overpass and 4.5 acres on Lower Banzai below the Lunchline Overpass.

Snowmass constantly evaluates optimum locations and varies park elements and locations frequently. Snowmass will continue this practice as conditions warrant, in locations that are appropriate based on the evolving needs of park users.



5. Snow Tubing

Snow tubing is available daily in Elk Camp Meadows throughout the ski season. The existing tubing operation at Elk Camp includes three lanes served by the Bear Bottom conveyor lift, as previously noted. Both skiers and tubers ride the lift simultaneously, with the skiers going to the east side to ski the Level 3 teaching terrain found there and the tubers accessing the tubing lanes on the west side of the conveyor. The lanes are all approximately 500 feet long, including the run-out. Tubing is offered from 1:30 p.m. to 4:00 p.m. on most weekdays, and 1:30 p.m. to 6:00 p.m. on weekends and holidays. Depending on weather conditions, each lane serves an average of 240 person-rides per hour, for a total of 720 person-rides per hour across the entire venue. To minimize crowding, ASC limits ticket sales to 100 tickets per one hour session. Up to 50 tickets are sold every half hour, for the total of 100 guests tubing at any given time.

Ullr Nights takes place at Elk Camp each Friday night throughout the winter season. Activities include live music, s'mores, hot chocolate, and a la carte food offerings at Elk Camp Restaurant. Snow tubing and snow biking under the lights are also offered during Ullr Nights, and during holidays and other special events.

Tubing is offered as an amenity for existing guests, and it is estimated that around 80% of the tubers are also skiers. Very few guests come to Snowmass for the sole purpose of tubing.

D. EXISTING CAPACITY ANALYSIS

1. Comfortable Carrying Capacity

The reader is referred to Chapter II (Section 4) for a detailed discussion of capacity analysis and design, defined as CCC.

A detailed calculation of CCC was completed for this MDP, as shown in the Table IV-5. The CCC of Snowmass was calculated at 12,360 guests per day.

Note that the CCC for the Bear Bottom conveyor lift accounts for both skiing and tubing.

Note also that the Treehouse overflow conveyor is not included in the CCC calculation, as, due to the way it is utilized (intermittently and only for specific programming), it does not contribute to an increase in overall resort CCC.

Table IV-5. Comfortable Carrying Capacity – Existing Conditions

Lift Name, Lift Type	Slope Length (ft)	Vertical Rise (ft)	Actual Design Capacity (guests/hr)	Oper. Hours (hrs)	Up-Mtn. Access Role (%)	Misload/ Lift Stop (%)	Adjusted Hourly Cap. (guests/hr)	VTF/ Day (000)	Vertical Demand (ft/day)	CCC (guests)
Two Creeks/DC4	9,874	1,700	1,640	7.00	50	5	738	8,784	13,378	660
Assay Hill/C4	1,438	197	1,200	7.00	0	10	1,080	1,493	3,626	410
Elk Camp Gondola Full/G8	8,659	1,371	1,961	7.00	50	5	883	8,471	9,523	890
Elk Camp Gondola Upper/G8	7,499	1,277	654	7.00	20	5	490	4,381	10,117	430
Elk Camp/DC4	7,559	1,540	2,020	6.50	0	5	1,919	19,215	14,150	1,360
Meadows/C4	1,304	112	1,200	6.50	0	15	1,020	745	2,222	340
Meadows Sunkid/C	235	21	600	6.50	0	5	570	79	1,453	50
Bear Bottom Sunkid/C	440	50	600	6.50	0	5	570	185	3,356	60
Alpine Springs/DC4	7,164	1,518	2,400	6.50	10	5	2,040	21,678	15,590	1,390
High Alpine/C2	4,808	1,389	1,200	6.50	0	15	1,020	9,212	21,015	440
Cirque Lift/P	3,981	786	450	5.50	0	10	405	1,911	14,875	130
Sheer Bliss/DC4	9,283	2,207	2,000	6.50	10	5	1,700	26,262	21,337	1,230
Big Burn/DC4	7,793	1,989	2,200	6.50	0	5	2,090	29,093	18,515	1,570
Coney Glade/DC4	4,931	1,213	2,000	6.50	0	5	1,900	16,132	20,028	810
Village Express Full/DC6	10,041	2,154	1,876	7.00	40	10	938	14,141	15,319	920
Village Express Lower/DC6	6,234	1,200	924	7.00	0	10	832	6,987	9,354	750
SkyCab/G6	1,069	146	530	7.50	100	0	-	0	5,029	-
Treehouse Sunkid/C	80	5	720	7.00	0	5	684	24	358	70
Scooper Lift/P	876	227	428	7.00	0	10	385	613	7,073	90
Sam's Knob/DC4	3,869	1,199	1,800	6.50	0	5	1,710	13,331	25,736	520
Campground/C2	4,730	1,435	664	6.00	0	10	598	5,146	21,371	240
TOTAL	101,510		26,992				21,564	187,650		12,360

Source: SE Group



2. Density Analysis

An important aspect of resort design is the balancing of uphill lift capacity with downhill trail capacity. Trail densities are derived by comparing the uphill, at-one-time capacity of each individual lift pod (i.e., CCC) with the trail acreage associated with that lift pod.

At any one time, skiers and riders are dispersed throughout the resort, using guest facilities and milling areas, waiting in lift mazes, riding lifts, or descending on ski terrain. For the trail density analysis, 25% of each lift's CCC is presumed to be "inactive"—i.e., using guest service facilities or milling areas and otherwise not actively skiing or riding lifts.

The active skier/riders population can be found in lift lines, on lifts, or on trails. The number of people waiting in line at each lift is a function of the uphill hourly capacity of the lift and the assumed length of wait time at each lift. The number of people on each lift is the product of the number and capacity of uphill carriers. The remainder of the skier/riders population (the CCC minus the number of guests using guest facilities, milling in areas near the resort portals, waiting in lift mazes, and actually riding lifts) is assumed to be descending.

Trail density is calculated for each lift pod by dividing the number of guests on the trails by the amount of trail area that is available within each lift pod. The trail density analysis compares the calculated trail density for each lift pod to the desired trail density for that pod (i.e., the product of the ideal trail density for each ability level and the lift's trail distribution by ability level).

Again, it is important to point out that the trail density analysis considers only the acreage associated with the developed trail network. Since Snowmass attracts a large number of advanced- and expert-level skiers, it is typical to see a large portion of the skiers at the resort utilizing the hike-to, backcountry, glades, and other types of undeveloped terrain. However, it is important for a resort to have enough developed terrain to accommodate the full capacity of the resort, as there are many days that skiing the undeveloped terrain is undesirable due to snow levels or weather conditions. As a result, the density analysis presented here looks at the capacity of the developed terrain.

The density analysis for Snowmass is illustrated in Table IV-6. This table shows that the average trail density at Snowmass is 5 skiers-per-acre, a density that is on the low end of the industry standard range.⁶ This situation is certainly desirable from the perspective of the recreational experience, as low skier/riders densities are a defining factor in the quality of the recreational experience.

The density figures included in the Table IV-6 show that, for all of the individual lift/trail systems at Snowmass, the actual trail densities are at or below the target design criteria, meaning that trails are generally less crowded than at most resorts. As stated, the low densities are desirable from the standpoint of the quality of the skiing experience.

However, the low density numbers can also indicate underutilization of the existing terrain, meaning that there could comfortably be more skiers/riders on the terrain at any one time than there are at current visitation levels. This situation indicates that the amount of effort required to properly maintain the quantity of terrain could be disproportionately high when compared to the overall number of skiers/riders on the mountain.

3. Lift and Terrain Network Efficiency

Overall resort efficiency is becoming an increasingly important factor in the ski industry. This relates not only to energy and operational efficiency, but also to efficiency of the design and layout of the resort. The idea behind ski area design efficiency is to have a well-balanced lift and trail network (i.e., the uphill lift capacity balances with the downhill trail capacity that it serves) that is efficiently served by the fewest number of lifts possible, while maintaining desired CCC rates, circulation routes, and service to the full spectrum of skier ability levels and types.

a. Lift Network Efficiency

Within the context of ski area design efficiency, the term "Lift Network Efficiency" refers to the amount of effort and cost required to operate and maintain the lift network, as compared to the number of guests served by

⁶ Specific trails, particularly the egress trails towards the end of the day, can consistently have high densities.

Table IV-6. Density Analysis – Existing Conditions

Lift Name, Lift Type	Daily Lift Capacity	Guest Dispersal				Density Analysis				Density Index (%)
		Support Fac./Milling (guests)	Lift Lines (guests)	On Lift (guests)	On Terrain (guests)	Terrain Area (acres)	Terrain Density (guests/ac)	Target Trail Density (guests/ac)	Diff. (+/-)	
Two Creeks/D4	660	165	25	110	360	46.6	8	8	0	100
Assay Hill/C4	410	103	54	86	167	20.9	8	12	-4	67
Elk Camp Gondola Full/G8	890	223	44	169	454	69.5	7	10	-3	70
Elk Camp Gondola Upper/G8	430	108	25	245	52	18.9	3	10	-7	30
Elk Camp/D4	1,360	340	160	220	640	194.9	3	8	-5	38
Meadows/C4	340	85	51	74	130	12.7	10	25	-15	40
Meadows Sunkid/C	50	15	10	14	11	0.7	16	25	-9	64
Burlingame Sunkid/C	60	15	10	26	9	0.7	13	25	-12	52
Alpine Springs/D4	1,390	348	102	221	719	208.3	3	8	-5	38
High Alpine/C2	440	110	43	149	138	106.1	1	5	-4	20
Cirque Lift/P	130	33	20	38	39	35.8	1	8	-7	13
Sheer Bliss/D4	1,230	308	85	239	598	139.9	4	7	-3	57
Big Burn/D4	1,570	393	105	271	801	172.5	5	7	-2	71
Coney Glade/D4	810	203	95	156	356	47.6	7	8	-1	88
Village Express Full/D6	920	230	78	149	463	136.2	3	8	-5	38
Village Express Lower/D6	750	188	28	249	285	79.9	4	10	-6	40
Treehouse Sunkid/C	70	18	23	11	18	1.8	10	12	-2	83
Scooper Lift/P	90	23	13	16	38	5.7	7	8	-1	88
Sam's Knob/D4	520	130	86	110	194	63.2	3	5	-2	59
Campground/C2	240	60	20	86	74	124.2	1	4	-3	25
TOTAL	12,360	3,098	1,077	2,639	5,546	1,486	5	9	-4	54

Source: SE Group

the lift network. The energy and costs related to the lifts include, but are not limited to: power use, operational labor, maintenance costs and labor, increased indirect administrative costs, and various direct and indirect costs associated with higher staff levels to perform these tasks. From this standpoint, the most efficient scenario is to have the fewest number of lifts possible that can comfortably and effectively serve the capacity and circulation requirements of the resort.

One way to analyze Lift Network Efficiency is to calculate the average CCC per lift at a given resort. While this calculation does not relate to the overall capacity of the resort, it can indicate if (1) the resort is not getting maximum utilization out of its lifts, or (2) if there are more lifts than necessary for the capacity levels of the resort. When calculating this average, conveyors used for teaching, as well as lifts that are used for access only, are not included. Optimally, and generally speaking, the average CCC per lift would likely be close to 1,000.

Industry-wide, the average CCC per lift is approximately 650. The average CCC per lift at Snowmass is 883. This rating is well above average, almost at the ideal target number, indicating that Snowmass ranks very well in terms of overall lift network efficiency. There are few, if any, resorts in the country that rate this high in terms of lift network efficiency.

b. Terrain Network Efficiency

To further the previous discussion, an offshoot of the terrain density analysis is an analysis that provides an indication of the efficiency of the terrain network as compared to the lift network serving it. In this usage, the term “Terrain Network Efficiency” refers to the amount of effort required to properly maintain the terrain (e.g., costs related to snowmaking, grooming, energy, ski patrol, summer trail maintenance, administration, etc.).

From this standpoint, the most efficient scenario is to have a quantity of terrain that closely meets the target



density requirements. This can be easily achieved by reviewing the density analysis (Section D.2), as a density index of 100% would imply that the resort had exactly the right amount of terrain to match target densities. Snowmass has an index of 54%, meaning that densities are 54% that of target densities. This reflects a policy by ASC to intentionally maintain lower trail densities than industry standards to ensure the higher quality experience expected by its destination guests. The implication of this is that Snowmass likely has somewhat higher operating costs associated with ski terrain maintenance per skier than other resorts, but this is a tradeoff that ASC makes to ensure a higher quality ski experience.

E. EXISTING GUEST SERVICES FACILITIES, FOOD SERVICE SEATING AND SPACE USE ANALYSIS

1. Guest Services

Guest services are provided both in the base village and on-mountain at Snowmass. Existing guest service facilities are identified on Figures IV-1.

a. Base Area Guest Services

Guest services are found in the Snowmass base area—in the Snowmass Village Mall, the Treehouse Kids’ Adventure Center, and various other facilities. A significant portion of the guest service facilities (particularly the food and beverage facilities) in the base village are not owned or operated by ASC. In fact, ASC does not own or operate any restaurants in the base village.

This existing space use analysis considers only base village space that is owned and operated by ASC. As a result, the comparisons to the total recommended amount of space will always be low, as the existing totals do not account for guest service space that is not owned by ASC. Examples of this are third-party rental shops in the base village, the private restaurants in the Village Mall, retail stores, etc. It is beyond the scope of this document to analyze third-party base village guest service space.

b. On-Mountain Guest Services

On-mountain skier services are extensive at Snowmass. There are nine on-mountain restaurants, as well as ski rental/repair facilities, ski school, ski patrol, and four additional warming hut/restroom facilities.

2. *Space Use Analysis*

Sufficient existing guest service space should be provided to accommodate the existing resort CCC of 12,360 guests per day. A logical distribution of the CCC to each facility location is utilized to determine guest service capacities and space requirements at base area and on-mountain facilities. The CCC is distributed between each guest service facility location according to the number of guests that would be utilizing the lifts and terrain associated with each facility. Since the on-mountain guest services are extensive, and returning to the base area for lunch is not necessary, the majority of skiers remain on the mountain when they require guest services.

In addition to distributing the CCC amongst the base area and on-mountain facilities, guest service capacity needs and the resulting spatial recommendations are determined through a process of reviewing and analyzing the current operations to determine specific guest service requirements that are unique to the resort.

Based upon a CCC of 12,360 skiers, Table IV-7 compares the current total space use allocations of the guest service functions to industry norms for a resort of similar market orientation and regional context as Snowmass. Square footages contained in this table are calculated to illustrate how Snowmass compares to industry averages, and should not be considered absolute requirements.

Service functions that were considered in the total square footage recommendations include the following:

Restaurant Seating: All areas designated for food service seating, including restaurants, cafeterias, and brown bag areas. Major circulation aisles through seating areas are designated as circulation/waste, not seating space.

Kitchen/Scramble: Includes all food preparation, food service, and food storage space.

Bar/Lounge: All serving and seating areas, often designated as restricted use, for the serving and

consumption of alcoholic beverages. Since used for food service, seats are included in seat counts.

Restrooms: All space associated with restroom facilities (separate women, men, and employees).

Guest Services: Services including resort information desks, kiosks, and lost and found.

Adult Ski School: Includes ski school booking area and any indoor staging areas. Storage directly associated with ski school is included in this total.

Kid's Ski School: Includes all daycare/nursery facilities, including booking areas and lunch rooms associated with ski school functions. Storage and employee lockers directly associated with ski school are included.

Rentals/Repair: All rental shop, repair services, and associated storage areas. The assumed target number of units in the rental fleet is 40% of CCC.

Retail Sales: All retail shops and associated storage areas.

Ticket Sales: All ticketing and season pass sales areas, and associated office space.

Public Lockers: All public locker rooms. Any public lockers located along the walls of circulation space are included, as well as the 2 feet directly in front of the locker doors. Includes seasonal and daily lockers.

Ski Patrol/First Aid: All first aid facilities, including clinic space. Storage and employee lockers directly associated with ski patrol are included in this total.

Administration/Employee Lockers & Lounge/Storage: All administration/ employee/storage space not included in any of the above functions.

A recommended amount of each function was calculated for each location, then totaled and compared to the total space for that location.

Table IV-7 shows that the total Snowmass guest use space is below, but only slightly, the recommended range. As previously noted, the existing base village space only reflects guest service space that is owned and operated by ASC, and so does not account for the private restaurants, ski rental shops, retail, and others. It is reasonable to assume that these third-party restaurants and stores

(which are outside the scope of this analysis) make up the difference.

3. Food Service Seating

Food service seating at Snowmass is provided in the base village and in nine separate locations on the mountain.

A key factor in evaluating restaurant capacity is the turnover rate of the seats. A turnover rate of 2 to 5 times throughout the day is the standard range utilized in determining restaurant capacity. Sit-down dining at resorts typically results in a lower turnover rate, while “fast food” cafeteria-style dining is characterized by a higher turnover rate. Furthermore, weather has an influence on turnover rates at resorts, as on snowy days guests will spend more time indoors than on sunny days. Based on observed operating characteristics at Snowmass, an average turnover rate of 3.5 was used for the various facilities in this MDP, as shown in Table IV-8.

This table summarizes the seating requirements at Snowmass. As with the total guest use space analysis, it is important to note that this analysis only accounts for restaurant seats that are owned and operated by ASC. Since ASC does not own or operate any of the food and beverage facilities in the base village, none of those seats are taken into account—Table IV-8 lists existing total base village seats at zero seats. It is reasonable to assume that this deficiency is easily made up by the numerous private restaurants in the base village.

Also shown in Table IV-8, Sam's Smokehouse has the greatest existing deficiency of seats. Also note the existing surplus of seats at the High Alpine Restaurant, indicating an underutilization of that facility.



Table IV-7. Industry Average Space Use – Existing Conditions

Service Function	Existing Total (sq. ft.)	Recommended Range (sq. ft.)	
		Recommended Low Range	Recommended High Range
Base Village	71,850	73,860	95,380
Two Creeks Café	10,379	5,800	7,384
Elk Camp Restaurant	15,523	20,520	26,120
Sam's Smokehouse	8,821	7,660	9,730
Ullrhof Restaurant	14,000	23,020	29,270
High Alpine Restaurant	28,000	23,020	29,270
Spider Sabich Picnic Area	6,348	12,360	15,720
Lynn Britt Cabin	1,770	2,840	3,620
Lizard Lodge	1,440	3,010	3,830
Up 4 Pizza	1,390	6,580	8,360
TOTAL RESORT	159,521	178,670	228,684

Source: SE Group

Table IV-8. Recommended Restaurant Seating

	Base Village	Two Creeks Café	Elk Camp Rest.	Sam's Smoke-house	Ullrhof Rest.	High Alpine Rest.	Spider Sabich Picnic Area	Lynn Britt Cabin	Lizard Lodge	Up 4 Pizza	Total Resort
Lunchtime Capacity (CCC + other guests)	3,575	495	1,749	1,128	1,960	1,960	1,052	242	257	560	12,978
Average Seat Turnover	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Existing Indoor Seats		81	395	150	230	600	0	70	60	60	1,646
Existing Outdoor Seats		56	150	50	250	150	250	50	50	40	1,046
Existing Total Seats	0	137	545	200	480	750	250	120	110	100	2,692
Required Seats	1,022	141	500	322	560	560	301	69	73	160	3,708
<i>Difference</i>	-1,022	-4	45	-122	-80	190	-51	51	37	-60	-1,016
Existing seating capacity (existing seats x turnover)	0	284	1,383	525	805	2,100	0	245	210	210	9,422

Source: SE Group

CCC + other guests is accounting for the non-skiing guests who come to Snowmass with larger groups or families that use the guest service facilities just as the skiing guest does. Other guests are being calculated at 5% of CCC.

F. EXISTING PARKING CAPACITY

Parking for Snowmass guests is available across multiple lots as detailed in Table IV-9.

Vehicle occupancy counts confirm that average car occupancy at Snowmass is 2.5 people per car, which is aligned with national averages of 2.3 to 2.8 people per car. Using this average vehicle occupancy, there is a parking capacity for 10,775 guests. This represents 87% of the existing CCC.

The majority of the rest of the arrival capacity is in the form of shuttles and buses. The Roaring Fork Transportation Authority (RTFA) provides a free skier shuttle bus to all four ASC ski mountains. RTFA also stops at several Park and Ride locations, providing free satellite parking—most notably at the Brush Creek Intercept Lot. The City of Aspen offers a free shuttle service from TOSV, and TOSV provides a free transit service within the community.

The combination of parking capacity and transit options provides sufficient access capacity to Snowmass.

G. EXISTING RESORT OPERATIONS

1. Ski Patrol/First Aid

Snowmass has Ski Patrol facilities located in the base area, as well as duty stations at the top of the Elk Camp, High Alpine, Sheer Bliss, and Sam’s Knob lifts. From these facilities, ski patrol has access to all points of the developed trail network. A well-appointed first aid clinic is located in the Village Mall.

2. Snowmaking Coverage

a. Snowmaking System

The snowmaking system at Snowmass has the ability to make snow on 242 acres of terrain (Figure IV-2). Typically starting in the beginning of November and operating through the end of December, the system has a capacity of 4,200 gallons per minute (gpm) of water.

Table IV-10 summarizes the snowmaking system’s statistics, averaged over the past five years of operation.

Table IV-9.
Parking Capacity – Existing Conditions

Parking Area	Spaces	Year Built
Base Village Parking Structure	375	2007
TOSV Numbered Lots	1000	1967–1975
Two Creeks Lot	400	1997
Town Park Lot	325	1975–2007
Rodeo Lot	100	1975–2007
Black Saddle Lot	150	2004
ASC Maintenance Facility	30	2001
Divide Lot	30	1997–2004
Lodging Units*	1500	1967–2007
RTFA Intercept P&R lot	400	2000
TOTAL	4,310	

Source: Snowmass

*parking associated w/1,000+ lodging units not associated w/numbered lots (approx. 1.5/unit)

Table IV-10.
Snowmaking Operations – Existing Conditions

	Five-Year Average (2009 to 2014)
Total operational hours	550–650
Water consumption (Gallons)	81,480,000
Power consumption (KWH)	1,796,000
Total acre feet produced	377
Acre feet produced for terrain park features	60–90



b. Water Supply

Snowmass obtains its snowmaking water supply from the 215-acre foot Ziegler Reservoir (a.k.a. Lake Deborah), owned and operated by the Snowmass Water and Sanitation District (SWSD). Ziegler Reservoir is an integral part of the SWSD's water supply system which includes numerous water rights. Among these, the Snowmass Creek Pipeline is decreed for an amount of 6 cfs for snowmaking uses (Water Court Case Nos. 92CW0307, 02CW0024, and 09CW0038).

The Snowmass snowmaking system includes three on-mountain storage ponds: Sheer Bliss, Rayburn's, and Burlingame. These ponds start the snowmaking season at full capacity as a result of seasonal run-off and/or available streamflows. As a key part of the overall snowmaking infrastructure, these ponds are drained and filled several times during the course of the snowmaking season as necessary with system water from Ziegler Reservoir. Typically, refilling of the on-mountain storage ponds takes place during periods of warm temperatures when pumped water cannot be processed into snow.

Records maintained by the Snowmass snowmaking personnel indicate that during the snowmaking season (November 1st through December 31st), there are approximately 800 hours when temperatures are sufficient for snowmaking. On average, the Snowmass snowmaking crew complete their snowmaking operations in approximately 515 hours, or 65% of the total time typically available.

Man-made snow is currently applied on approximately 260 acres of ski trails. Thus, the average ratio of pumped water to acreage of ski trails with snowmaking is 0.76 acre feet/acre. A portion of the volume of water pumped during snowmaking operations is subject to losses due to evaporation, sublimation, and evapotranspiration (watershed losses). Mostly, these losses depend upon air temperatures during the snowmaking process, the volume of water pumped, and the type of year (dry, average, or wet). Calculations conducted for the study watersheds show that snowmaking water losses during average year conditions total approximately 26%.

A discussion of Snowmass' water diversions in relation to instream flows in Snowmass Creek is provided in Appendix A.

3. *Grooming*

Snowmass grooms approximately 500 to 700 acres of terrain per night, including all of the beginner and novice terrain, at least two intermediate trails per lift, along with some selected upper ability-level areas. As is typical with most ski areas, terrain is groomed in two eight-hour shifts, with approximately 5 to 9 acres groomed per vehicle, per hour.

Snowmass operates seven groomers, two winch cats, two terrain park specific cats, and one small cat for the tubing area and narrow traverses.

4. *Maintenance Facilities*

Table IV-11 details the uses and sizes of the various maintenance facilities at Snowmass.

5. *Power and Other Utilities*

All electric power is supplied by Holy Cross Energy, which maintains and upgrades transmission lines and transformers as necessary. Grid maps can be found at holycross.com. In addition to main transmission lines, there is a network of secondary lines (owned by ASC) that branch off from the Holy Cross transformer locations to connect to various on-mountain facilities.

Natural gas is provided by Source Gas, with underground gas lines servicing the following on-mountain facilities: Elk Camp Restaurant, Elk Camp vehicle maintenance facility, Sam's Smokehouse, Ullrhof Restaurant, Spider Sabich Race Arena, Lynn Britt Cabin, and Lizard Lodge. There is currently no natural gas service at the High Alpine Restaurant.

Underground communication lines connect to all on-mountain facilities, lift terminals, and emergency phones. The system consists of main trunk lines extending up both the east and west sides of the mountain, with branch lines to existing facilities. A small number of underground fiber optic cables are located in the Elk Camp area. Overhead communication lines exist along lift lines, located on lift towers. Some of these include fiber optic cables for high-speed data communication.

Radio communication systems allow for communication between on-mountain personnel. Various antennae and repeaters exist on the roofs of certain patrol

buildings, restaurants, and lift terminals to support radio communication across the mountain.

is tied into the municipal Snowmass Water and Sanitation District sewer system, which has the ability to provide for current and projected needs.

6. Culinary Water and Sewer

Table IV-12 details the uses and sizes of the domestic water system at Snowmass. With the exception of Up 4 Pizza (which uses a composting toilet system), Snowmass

Table IV-11. Maintenance Facilities – Existing Conditions

Building/Location	Year Built	Total Square Footage	Number of Maintenance Bays	Attributes*	General Condition
Control-Compressor Building/Mid-Mountain	1997	6,278	1	EL, RR, M, S, WS	Very Good
Primary Pumphouse	1997	1,440	1	M	Very Good
Alpine Springs Pumphouse	2008	912	1	M	Very Good
Elk Camp VMF	2001	11,850	10	A, EL, RR, M, S, WS	Very Good
Divide VMF	2002	14,810	2	A, EL, RR, M, S, WS, LO (includes shipping/receiving, restaurant food storage/ transfer, dumpsters, 6 employee housing units on 2nd floor)	Very Good
Elk Camp Lift Maintenance	2006	2,390	1	RR, M, S, LO	Very Good
Sam's Knob Shop	1980	3,260	2	RR, M, S, ES, LO	Fair

*KEY:

A = administration; EL = employee lockers/lounge; RR = restrooms, M = mechanical, S = storage (parts and supplies), WS = welding shop, CS = carpentry shop, ES = electrical shop, PS = plumbing shop, LO = lift operations maintenance, VMF = vehicle maintenance facility.

Table IV-12. Domestic Water System – Existing Facilities

Building/Location	Public or Private System	Source of Water	Capacity of Source (gpm)	Type of Storage	Storage Capacity (gallons)	Annual Consumption (gallons)	Adequacy of Water Supply
Garret Gulch Pump Station (serves Sam's, Ullrhof, Sabich, Lynn Britt, CB)	Private	Surface -West Fork Brush Creek	100gpm +	Above ground concrete	60,000	1,500,000	Adequate
Sandy Park Diversion (serves EC Restaurant and VMF)	Private	Surface – East Fork Brush Creek	50gpm +	Below ground steel	10,000	1,000,000	Adequate
Sheer Bliss Diversion (serves High Alpine)	Private	Surface -West Fork Brush Creek	100gpm +	Below ground steel	10,000	1,000,000	Adequate
Lizard Lodge	Public	Snowmass Water and Sanitation District	30gpm	NA	NA	100,000	More than adequate
Up 4 Pizza	Private	Hauled by Snowcat	NA	Below ground concrete	2,000	40,000	Barely adequate



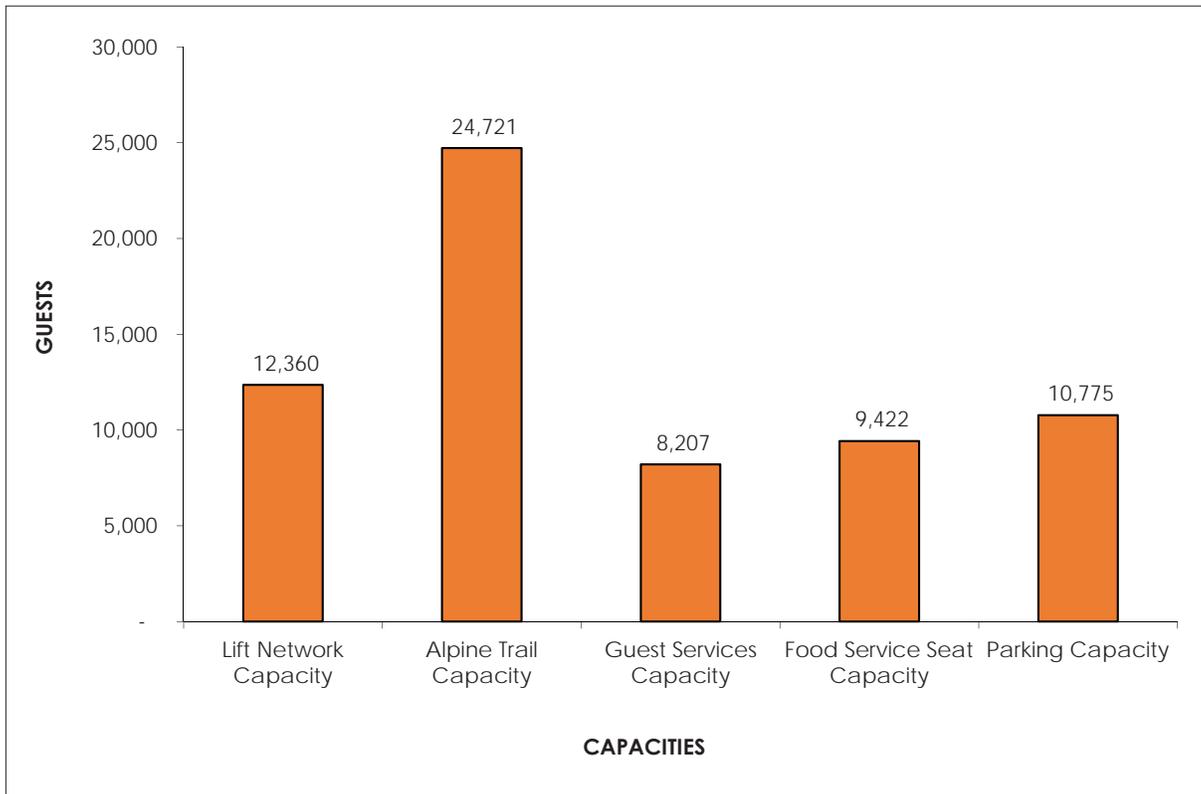
H. RESORT CAPACITY BALANCE AND LIMITING FACTORS

The overall balance of the existing resort is evaluated by calculating the capacities of the resort's various facilities and comparing those facilities to the resort's CCC, and are shown in Chart IV-2.

This chart indicates that most of Snowmass' capacities are fairly well-balanced. The surplus of terrain network capacity is reflected in low skier densities at Snowmass, does not present a particular issue, and is certainly not

negative from guests' standpoint. The guest services capacity and food service seating capacity are low, since they do not account for the third-party guest service space and restaurant seats that are available in the base village and Village Mall. When shuttle bus capacity is added to the parking capacity, there is sufficient capacity to access the resort.

Chart IV-2. Resort Balance – Existing Conditions



Source: SE Group

I. SUMMER OPERATIONS

1. *Summary of the Existing Summer and Multi-Season Guest Experience*

The existing summer guest experience at Snowmass is characterized by more developed recreational opportunities on TOSV lands, and dispersed opportunities on NFS lands. On NFS lands, mountain biking is one of the most popular activities with guests. The combination of classic cross-country biking trails, such as the Government Trail, and newly developed gravity and “flow” trails make Snowmass very popular with various groups of mountain bikers. Families tend to participate in activities with lower risk, such as scenic chairlift rides and hiking.

In general, there is a lack of adventurous, exploratory activities on NFS lands that do not require a significant learning curve, or a high level of skill, in order to participate. Developing these types of opportunities will encourage guests, and youth in particular, to learn about the natural world that exists around them within the National Forest.

Summer visitation at Snowmass is generated by the activities and events that exist not only in Snowmass, but also in Aspen and the Roaring Fork Valley as a whole. The recreational activities offered on NFS lands at Snowmass may attract locals and those already visiting the area, but generally do not generate visits in-and-of themselves. In other words, few visitors are coming to Snowmass solely for the recreational activities offered on NFS lands.

Existing summer activities are shown on Figure IV-3.

2. *Existing Summer and Multi-Season Facilities*

a. Snowmass Village (Private Lands)

TOSV offers a variety of recreational opportunities for guests, including hot air ballooning, road biking, bowling, rodeo, fly fishing, a recreation center, yoga, golf, tennis, the Ice Age Discovery Center, and paragliding, among others. There are also events scheduled throughout the summer, including the Snowmass





Mammoth Fest, Scottish Festival, Balloon Festival, and Jazz Aspen-Snowmass (the Labor Day music festival). The TOSV Tourism Department is responsible for marketing events within the town, but also markets events occurring on NFS lands and in surrounding areas.

b. Elk Camp

Elk Camp is the on-mountain hub of existing summer and multi-season activity on NFS lands at Snowmass. A majority of guests accessing Elk Camp ride the Elk Camp gondola, though an increasing number are arriving via mountain biking or hiking trails. The Elk Camp Restaurant is open daily in the summer and offers a variety of food options for guests.

Snowmass offers a program called “Valhalla Nights” on select Friday evenings in July and August, at Elk Camp. This event offers special activities in addition to what is usually offered, including a barbecue dinner, campfire, live music, line dancing, movies, and activities for children. This event is popular with both summer guests of Snowmass and surrounding resorts.

Outdoor live music is restricted to small-scale acts (fewer than 500 people) and usually occurs in conjunction with a special event. In the summer, live music moves inside the Elk Camp Restaurant by 9:00 p.m.

The kid’s playground provides a safe environment for children’s play and includes sand pits, small ladders, slides, climbing apparatus, and other equipment.

3. *Lifts*

Snowmass operates both the Elk Camp gondola and chairlift from June through September. The Elk Camp gondola accesses the facilities at Elk Camp, disc golf course #1, the Rabbit Run Nature Walk (led by the Aspen Center for Environmental Studies [ACES]), several hiking and mountain biking trails, and the Elk Camp Restaurant. The top of the Elk Camp gondola is located at 9,805 feet. Guests can also ride the Elk Camp lift to 11,325 feet, where they can access additional hiking and mountain biking trails, and are treated to views of the Roaring Fork Valley, Maroon Bells, and surrounding 14,000-foot peaks. Both the gondola and the chairlift are open as weather allows.

Generally speaking, mountain resorts with a restaurant, or other recreational amenities at the top of a scenic lift, typically experience higher summer and shoulder season utilization than resorts without specific activities. The quality of scenery also plays a large role in determining the overall success of the program. The scenery from the top of the Elk Camp lift in particular is some of the best in the state. Thus, additional activities could encourage further exploration and enjoyment of the WRNF.

4. Mountain Biking

Mountain biking has become one of the most popular activities at Snowmass over the past two decades. There are numerous mountain biking trails spread across the SUP area, including NFS trails and those built by Snowmass trail crews. In total, there are more than 50 miles of trails and service roads open to mountain biking that are either wholly, or partially, on NFS lands within the Snowmass SUP area. Guests can purchase daily or season passes for bike haul on the Elk Camp gondola and chairlift, or they can access upper-mountain trails from the base areas.

Snowmass strives to cater to three types of mountain biking experience—traditional cross-country (XC), downhill, and all-mountain/enduro. Each of these categories has its own unique equipment and desired experience, and thus its own trail design needs.

Traditional XC riders generally utilize lighter equipment with smaller suspension systems, and typically climb uphill under their own power (i.e., they typically do not use lift service). The existing trail network at Snowmass serves this market well. The “Blast the Mass” XC course utilizes the Village Bound, Cross Mountain, Government, and Tom Blake trails to create a demanding loop. Trails within the Snowmass SUP area also connect to other area trails (e.g., Rim Trail, Sky Mountain Park) to create longer ride opportunities.

Downhill and all-mountain/enduro riders both fall into the category of gravity riders. Bikes designed for downhill use typically include longer-travel suspension designed to descend steep, rough terrain without the need to ascend for long periods. Downhill riders often wear protective equipment, such as full-face helmets, long-sleeves, and body armor. Generally, downhill riders

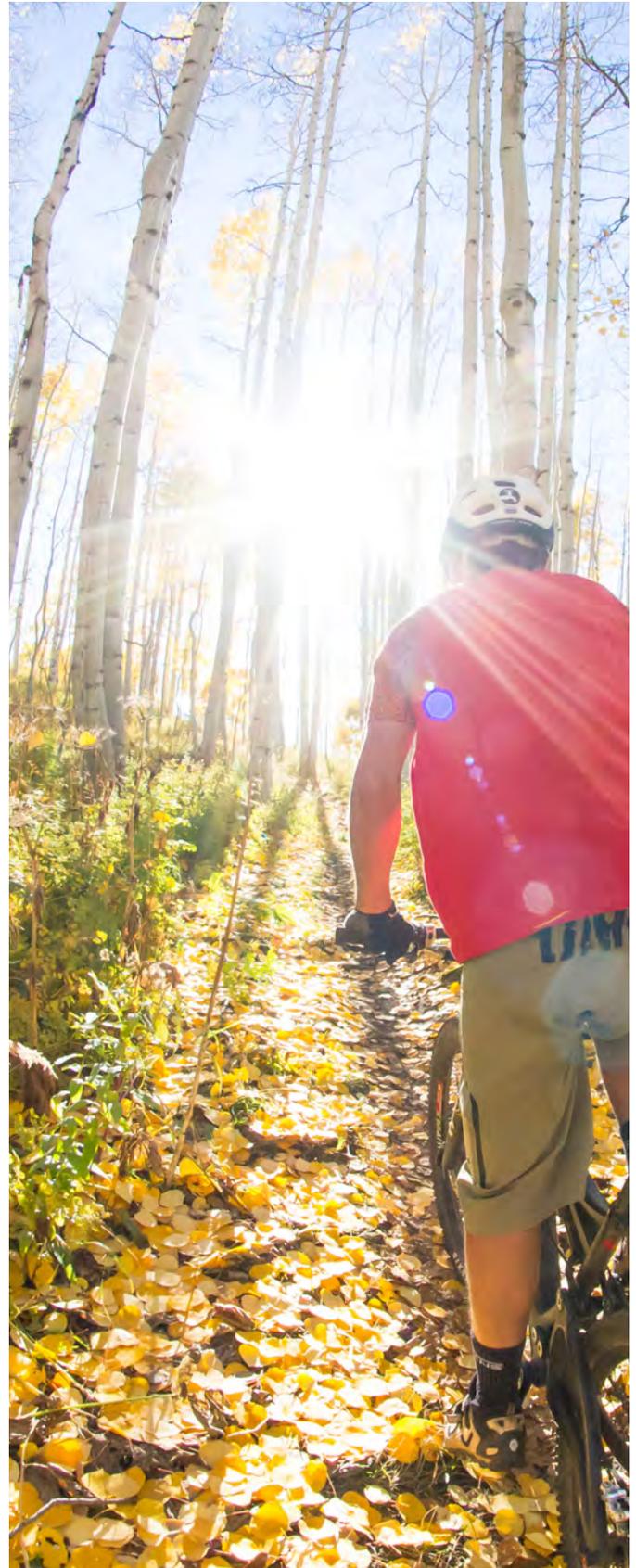




Table IV-13. Mountain Biking Trails
Trail Distribution by Ability Level – Existing Conditions

Trail Name	Ability Level	Type	Length (miles)
Beginner Loop	Easier	XC	0.6
Burlingame	More Difficult	XC	0.6
Connector	More Difficult	XC	1.2
Cross Mountain	More Difficult	XC	2.9
Ditch	More Difficult	XC	2.1
Viking*	More Difficult	Gravity	2.0
Espresso	More Difficult	XC	1.7
Government	Most Difficult	XC	9.5
K.A.R.*	Most Difficult	XC	0.8
Luge*	More Difficult	XC	1.1
Parker's Plunge*	Most Difficult	XC	0.9
Powerline	More Difficult	XC	0.7
Sequel	More Difficult	XC	1.0
Snowmass Way*	More Difficult	XC	2.1
Stark's	More Difficult	XC	1.1
Tom Blake	More Difficult	XC	2.0
Tom Blake Ridge	More Difficult	XC	1.7
Valhalla*	Most Difficult	Gravity	3.2
Vapor*	Most Difficult	Gravity	2.9
Verde*	Easier	Gravity	3.5
Village Bound	More Difficult	XC	3.1
West Government	Most Difficult	XC	0.6
TOTAL			45.2

* indicates trails that are only open to mountain bikes

Table IV-14. Mountain Biking Trails / Ability Level Distribution – Existing Conditions

Ability Level	XC Mileage	Percent of Total	Gravity Mileage	Percent of Total	Total Mileage	Percent of Total
Easier	0.6	1%	3.5	8%	4.1	9%
More Difficult	21.3	47%	2.0	4%	23.3	51%
Most Difficult	11.8	26%	6.1	13%	17.9	40%
TOTAL	33.7	74%	11.6	26%	45.3	100%

utilize lifts or shuttles to transport them uphill. They seek opportunities to test their abilities on terrain features such as jumps, drops, wall rides, and rock gardens.

A growing category of riders are considered all-mountain/enduro riders. This category blends XC and downhill, with a focus on more downhill riding. They utilize lifts, but are not averse to ascending trails.

The majority of mountain biking trails within the Snowmass SUP area are designed for XC use. Of the nearly 50 miles of trails (not including service roads) that exist at Snowmass, less than 12 miles (four trails) are designed as gravity trails which cater to the downhill and all-mountain/enduro rider. As these categories continue to grow, additional trail development will be necessary to provide the level of variety sought by these riders. Feedback from mountain biking guests indicate the need for additional gravity terrain that is suitable for all ability levels.

Snowmass offers a diverse trail network suitable for most ability levels. In recent years, Snowmass has constructed trails for all ability levels, including a beginner skills park and flow trail, intermediate cross-country and flow trails, and advanced downhill, freeride trails. Several of these trails were identified in the 2012 Gravity Logic mountain biking MDP (refer to Section I.2 in Chapter VI for a discussion of the Gravity Logic MDP). Table IV-13 shows the existing mountain biking trail distribution by ability level. Note that the table only includes mountain biking trails, and does not include mountain service roads. While some of the trails are open only to mountain bikes, a majority are multi-use trails also open to hikers and equestrian use. Additional mountain biking trails, including the Rim Trail, exist outside the Snowmass SUP area.

As shown in Table IV-13, there is a notable lack of beginner ability-level mountain biking terrain. There is also a deficiency in gravity trails for all ability levels. As the mountain biking trails system is expanded, Snowmass plans to provide a distribution of trails to meet the needs and expectations of guests of all ability levels.

Table IV-14 shows the distribution of mountain biking trails by ability level and type of trail. The table illustrates that nearly three-quarters of the mountain biking trail mileage at Snowmass consists of XC trails, with approximately one-quarter consisting of gravity trails. As previously discussed, Snowmass could provide a higher-quality experience for riders who prefer gravity-style trails by increasing the quantity and diversity of its offerings.

5. Hiking

Both guided and non-guided hiking opportunities are available at Snowmass. ACES offers daily hiking tours at the top of the Elk Camp gondola (on the Rabbit Run Nature Walk) and at the Village Mall (on the Snowmass Nature Trail Walk). These tours vary in length and difficulty, and feature interpretation by qualified naturalists. They provide opportunities for guests to experience the National Forest and learn about the plants and wildlife that inhabit it. The tours are free, although the Rabbit Run tour requires the purchase of a gondola ticket.

Approximately 35 miles of trails open to hiking exist across the SUP. Note that this does not include mountain service roads, which are also open to hiking. Table IV-15 shows the existing hiking trail distribution by ability level. Several of these trails are only open to hiking, but a majority are open to multiple uses, including mountain biking and equestrian use. There is a general lack locational diversity in hiking trails. Specifically, existing trails do not access more remote portions of the Snowmass SUP area. Many miles of hiking trails also exist outside the Snowmass SUP on NFS lands, including in the surrounding Maroon Bells-Snowmass Wilderness.

Hiking trails within the SUP area supplement those that exist on NFS, TOSV, and other lands in the surrounding area. The Government Trail provides a vital connection to East Snowmass Creek trail to the west, and other hiking trails to the east. These connections are essential to the overall trails system in the Roaring Fork Valley and are included in WRNF Forest-wide guidelines for trail development.⁷

⁷ White River National Forest Land and Resources Management Plan – 2002 Revision, p. 2-40.



Table IV-15. Hiking Trails / Trail Distribution by Ability Level – Existing Conditions

Trail Name	Ability Level	Length (miles)
Beginner Loop	Easier	0.6
Burlingame	More Difficult	0.6
Connector	More Difficult	1.2
Cross Mountain	More Difficult	2.9
Ditch	More Difficult	2.1
Overlook*	Easier	0.9
Espresso	More Difficult	1.7
Government	Most Difficult	9.5
Rabbit Run*	Easier	0.7
Sierra Loop*	More Difficult	1.9
Powerline	More Difficult	0.7
Sequel	More Difficult	1.0
Stark's	More Difficult	1.1
Tom Blake	More Difficult	2.0
Tom Blake Ridge	More Difficult	1.7
Summit*	Most Difficult	1.1
Vista*	Most Difficult	2.1
Village Bound	More Difficult	3.1
West Government	Most Difficult	0.6
TOTAL		35.4

* indicates trails that are only open to hiking

Table IV-16. Hiking Trails / Ability Level Distribution – Existing Conditions

Ability Level	Total Mileage	Percent of Total
Easier	2.2	6%
More Difficult	20.0	56%
Most Difficult	13.3	37%
TOTAL	35.5	100%

Table IV-16 shows the distribution of hiking trails by ability level.

6. Miscellaneous Activities

Two 18-hole disc golf courses are open to the public at Snowmass. One disc golf course exists in the Elk Camp Meadows area. The second course begins near the mid-unload of the Village Express lift, finishes just above the Village Mall, and is located entirely on private lands. Snowmass offers disc golf rentals in both the Base Village and Village Mall. Disc golfers may pay to ride the gondola to the beginning of Course #1, or may hike to the start of the course.

Paintball is available on private lands in the Spider Sabich area, with groups meeting at the base of the Elk Camp gondola twice per day. Two paintball venues, each capable of accommodating about 30 people at a time are available. A climbing wall and “Eurobungy” are also offered on private lands in the Village Mall.

Snowmass also offers numerous private recreational outings through the Aspen Snowmass Private Adventures program. Activities include camping (at the top of the Elk Camp gondola), mountain boarding on service roads, fishing at Rayburn’s Pond, and options for guests to design their own adventure.

Commercial Jeep tours are offered primarily through Blazing Adventures and their outfitter/guide permit. ASC also offers guest shuttle services on mountain access roads, both on public and private lands, for various activities such as private fishing tours, mountain boarding, paintball, and other special events.

7. Summer and Multi-Season Guest Service Facilities Use

The Base Village is the center of summer activities at Snowmass. Equipment rental, ticket and retail sales, food and beverage services, restrooms, and various other guest service facilities are available in the Base Village. It is also provides primary access to the National Forest via the Elk Camp gondola.

In the summer months (typically between mid-June and early September), on-mountain services are provided at the Elk Camp restaurant, which is open daily. The restaurant offers food service, restrooms, both indoor and outdoor table seating, and broad views to surrounding mountains. As mentioned previously, Elk Camp is also open certain evenings throughout the summer for special events, such as Valhalla Nights.

8. Existing Resort Summer Operations

In addition to operations in the Elk Camp area, including the Elk Camp facility, gondola, and chairlift, various other resort operations take place throughout the summer. Maintenance crews work on the mountain daily, implementing summer construction plans, lift and trail maintenance, facility and infrastructure maintenance, and other tasks related to offering a quality summer experience and preparing the mountain for the winter season.



V. PREVIOUSLY-APPROVED PROJECTS, NOT YET IMPLEMENTED

The projects detailed in this section have been previously approved, but have not yet been implemented. It is anticipated that the majority of these projects will ultimately be implemented as capital for on-mountain improvements becomes available. Prior to project implementation, the Forest Service will review project consistency with 2002 Forest Plan standards and guidelines and determine if additional analysis is warranted due to changed environmental and social conditions, and/or new planning and regulatory guidance. Previously-approved, not yet implemented projects are also discussed in Chapter VI. Applicable approvals are contained in the following documents:

- 1994 – Snowmass Ski Area, Final EIS, ROD
- 2000 – Snowmass Ski Area, CE, DM
- 2006 – Snowmass Ski Area Master Plan Amendment Ski Area Improvements, EA, DN/FONSI
- 2006 – Snowmass Ski Area Elk Camp Beginner Park and Summer Multiple Use Trails, EA, DN/FONSI
- 2011 – Aspen Skiing Company Forest Health Projects EA, DN/FONSI
- 2014 – Snowmass Ski Area New/Realigned Mountain Bike Trails, CE, DM

- 2014 – Snowmass Ski Area Winter Evening Activities, CE, DM
- 2015 – Snowmass Ski Area Ski Trail Enhancements and High Alpine Lift Replacement, EA, DN/FONSI

The 1994 Snowmass Ski Area, Final EIS, ROD (1994 ROD) approved several of the projects discussed in this chapter, including the Burnt Mountain lift, Burnt Mountain Trails/Glading, and snowmaking. While resource analysis was completed and these projects are considered previously approved, it is understood that certain resource conditions (e.g., watershed and wildlife) may have changed since the 1994 ROD was published. Therefore, additional site-specific analysis will likely be required prior to implementation of these projects.

A. LIFTS

1. *High Alpine Lift Replacement*

As part of the 2015 Snowmass Ski Area Ski Trail Enhancements and High Alpine Lift Replacement, EA, DN/FONSI (2015 DN/FONSI), the Forest Service approved the replacement and realignment of the existing fixed-grip double High Alpine Lift to a detachable-grip, four-person lift. The approval realigned the lift to the west, while maintaining the existing 1,200 persons per hour (pph) uphill capacity to manage skier densities on surrounding terrain.



2. *Burnt Mountain Lift*

The Burnt Mountain lift was approved as part of the 1994 ROD with a vertical rise of 2,700 feet and an uphill capacity of 2,400 pph. The lift was approved to run from the intersection of the Long Shot and East Branch trails to just below the summit of Burnt Mountain. The relocated bottom terminal located was approved in the 2000 Snowmass Ski Area, CE, DM (2000 CE).

3. *Naked Man Lift*

The Naked Man lift was approved as a fixed-grip chair with a vertical rise of 235 feet and a design capacity of 1,200 pph. The lift was also included in the 2003 SMMP, where it was planned as a surface lift with a vertical rise of 235 feet and a design capacity of 500 pph. The lift would transport passengers from Bull Run to the top of Burnt Mountain. It was intended to serve as a temporary lift, providing access to the Burnt Mountain pod prior to the construction of the Burnt Mountain lift.

B. TERRAIN

1. *Burnt Mountain Trails/Glading*

The 1994 ROD approved terrain development in the Burnt Mountain area, including 115 acres of full clearing, 5 acres of full clearing/grading, 195 acres of glading, and 35 acres of snowfield skiing. Subsequent NEPA analyses in 2006 and 2013 resulted in additional implementation of Burnt Mountain projects. To date, 30 acres of full clearing, 2 acres of full clearing/grading, and 55 acres of glading have been implemented.

2. *2015 Glading Projects*

The 2015 DN/FONSI approved six areas of glading across the resort, totaling approximately 84 acres. About 30% to 40% removal of tree basal area was approved. The purpose of the glading was to provide more diverse skiing opportunities for lower ability-level skiers. Glades approved in the 2015 DN/FONSI include Sneaky's, Freefall/Glissade, Reidar's, Castle, Long Shot, and Upper Green Cabin.

3. *Elk Camp Lower Bypass*

As part of the 2015 DN/FONSI, the Elk Camp Lower Bypass was approved, which would connect Turkey

Trot with Adam's Avenue, bypassing the busy Elk Camp area. This trail would return more directly to the Alpine Springs and Base Village areas and would allow for quicker repeat skiing of the Hanging Valley Wall.

4. *Level 3 Trail*

The 2015 DN/FONSI also approved the Level 3 trail, which would facilitate movement of Level 3 ski school students from Elk Camp Meadows to the base area, thus eliminating the need for ski school classes to download on the Elk Camp Gondola to Assay Hill.

C. SNOWMAKING

1. *Green Cabin and Trestle Snowmaking*

As part of the 2015 DN/FONSI, approximately 26 acres of snowmaking was approved on Green Cabin and Trestle trails. Additionally, 8,400 feet of water, air, and electrical lines were approved as a part of this project. This snowmaking will provide sufficient coverage on these two trails, which are expected to receive increased use upon realignment of the High Alpine lift.

2. *Adam's Avenue Snowmaking*

Snowmaking on Adam's Avenue was approved as part of the Snowmass Ski Area Elk Camp Beginner Park and Summer Multiple Use Trails, EA, DN/FONSI (2006 DN/FONSI) from where the trail leaves Funnel to the bottom of the Alpine Springs lift. Snowmaking on Adam's Avenue would provide adequate early-season snow coverage to enable access from the top of the Elk Camp Gondola to the Base Village.

3. *Additional Snowmaking*

As part of the 1994 ROD, approximately 220 acres of snowmaking was approved on NFS land (360 acres total on both private and NFS land) across the Snowmass SUP area. Of this, approximately 100 acres of NFS land (118 acres total) of snowmaking remains unimplemented.

D. MEADOWS SNOW TUBING

The 2014 Snowmass Ski Area Winter Evening Activities, CE, DM (2014 Activities DM) approved additional snow tubing lanes and permanent light towers at the

Meadows tubing hill above Elk Camp. Final grading, surface water management, and revegetation activities are to be completed in summer 2015. Additional tubing hill facilities, consisting of restrooms, a tube storage building and a ticketing building, are discussed further in Chapter VI.

E. MOUNTAIN BIKING TRAILS

1. Vapor Trail Reroute

As part of the 2014 Snowmass Ski Area New/Realigned Mountain Bike Trails, CE, DM (2014 MTB DM), four multiple-use trail projects were approved. Three of these trails have been constructed, but one, the Vapor Trail Reroute, has not yet been built. This trail reroute was approved to result in approximately 2 miles of new trail, with an average clearing width of 5 feet and total disturbance of 1.2 acres.

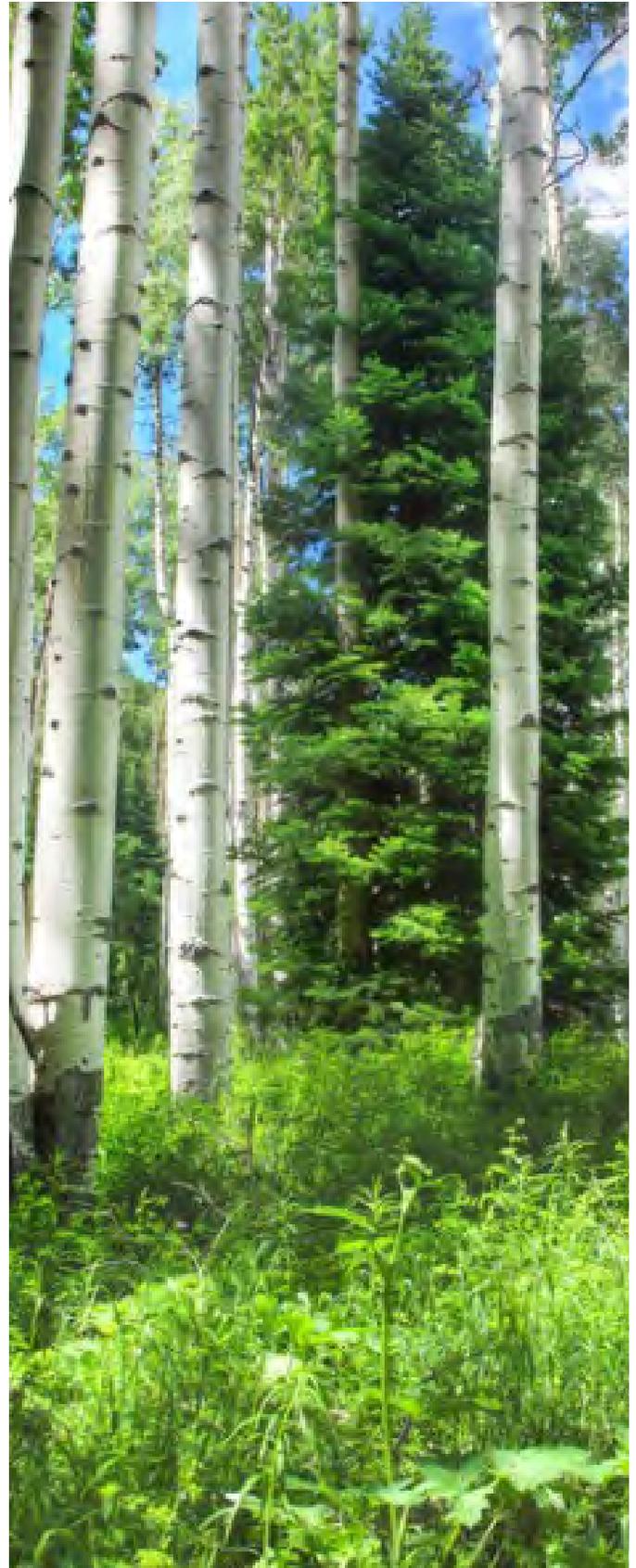
2. Meadows Skills Center

A mountain biking skills park was approved as part of the 2014 MTB DM in the Elk Camp Meadows area. The approved skills park would feature additional spurs and terrain features incorporated in the Beginner Loop trail. A toddler loop for small bicycles without pedals was also approved. Total disturbance for this project was approximately 0.7 acre.

F. FOREST HEALTH PROJECTS

The 2011 Aspen Skiing Company Forest Health Projects, EA, DN/FONSI (2011 DN/FONSI) analyzed a variety of vegetation treatments to be implemented on NFS lands within the SUP boundaries of the four ASC-owned ski resorts, including Snowmass, over a ten-year period. The proposed treatment map for Snowmass is included in Appendix C.

It is understood that there will be overlap between the planned projects included in this MDP and the treatments proposed in the 2011 DN/FONSI. Specifically, the proposed treatments may conflict with, or enhance, the summer activities discussed in Chapter VI. Any overlap between planned projects and forest health treatments will be addressed during site-specific NEPA analysis.





G. PREVIOUSLY-APPROVED PROJECTS MATRIX

Table V-1. Previously-Approved Projects, Not Yet Implemented

Project	Date Approved	Authorized, Not Yet Implemented	Approval Reference
Lifts			
High Alpine Lift Replacement and Realignment	N/A	6 acres clearing; 2 acres grading	2015 EA, DN/FONSI
Burnt Mountain Lift	3/8/1994	--	1994 EIS/ROD 2000 CE/DM
Naked Man Lift	3/8/1994	--	1994 EIS/ROD
Terrain			
Burnt Mountain Trails/Glading 5 acres, full clearing/grading 115 acres full clearing 195 acres glading 35 acres additional	3/08/1994 2/16/2006 9/26/2013	3 acres clearing/grading; 85 acres full clearing; 140 acres glading; 35 acres additional – pending additional site specific NEPA	1994 EIS/ROD 2006 EA, DN/FONSI 2013 EA, DN/FONSI
2015 Glading Projects	--	84 acres glading	2015 EA, DN/FONSI
Elk Camp Lower Bypass Trail	--	2 acres clearing; 1 acre grading	2015 EA, DN/FONSI
Level 3 Trail	--	1 acre clearing; less than 1 acre grading	2015 EA, DN/FONSI
Snowmaking			
Green Cabin and Trestle Snowmaking	--	26 acres snowmaking; 8,400 feet of utility lines	2015 EA, DN/FONSI
Adam's Avenue Snowmaking	6/29/2006	--	2006 EA, DN/FONSI
Snowmaking (235 acres on NFS Lands, 360 acres total)	3/8/1994	100 acres on NFS Lands; 118 acres total	1994 EIS/ROD (final implementation requires site specific NEPA)
Snow Tubing			
Meadows Tubing Hill	5/28/2014	Final grading, surface water management, and revegetation	2014 Activities CE, DM
Mountain Biking Trails			
Vapor Trail Reroute/ Meadows Skills Center	5/28/2014	2 miles of new trail; skills park – 1.9 acres of disturbance	2014 MTB CE, DM
Other			
Aspen Skiing Company Forest Health Projects	12/9/2011	Ongoing	2011 EA, DN/FONSI

VI. UPGRADE PLAN

This MDP has been prepared in compliance with the terms and conditions of the Forest Service-issued 40-year Term SUP for Snowmass. As stated previously, Forest Service acceptance of this MDP does not convey approval of any projects contained herein. Implementation of any projects on NFS lands within the Snowmass SUP area is contingent upon site-specific environmental review and approval via NEPA. Planned projects contained in this Master Plan are conceptual in nature and may be refined in the future, as long as the original intent of a planned project is maintained.

The Upgrade Plan is depicted on Figures VI-1, VI-2, and VI-3.

A. SUMMARY

This Upgrade Plan focuses on the intentions of Snowmass to enhance the total guest experience through a series of improvements. This would be achieved by implementation of strategic enhancements across the existing SUP area. The initial phase of projects are scheduled to occur within five years after acceptance of this MDP. The second phase of projects would occur in five to 15 years after acceptance of this MDP.

Snowmass strives to exceed its goals and objectives for providing its guests with world class experiences. The capital investments made since, and in accordance with the 2003 SMMP, are indicative of that intent. With this 2015 MDP, ASC wishes to continue meeting those

same goals and objectives by completing the remaining far-reaching development plans envisioned as part of the 1994 Snowmass ROD. The timeline is estimated and will ultimately be based on NEPA approval, economic circumstances, ASC priorities, and guest preferences, among other factors.

- No new terrain is planned over what has been previously approved. Grading is planned on existing trails in support of the terrain park. While no new gladed areas are planned over what has been previously authorized in the 1994 ROD and the 2015 DN/FONSI, some enhancements of existing gladed terrain are likely. It is understood that the terrain enhancement approvals from the 1994 ROD, as well as the glade enhancements referenced earlier, may require additional environmental review as necessary to analyze changed conditions and/or comply with the 2002 Forest Plan.
- No new lifts are planned over what has been previously approved. However, the Big Burn and Coney Glade lifts are planned to be upgraded with new machinery in existing alignments. These improvements would require minimal ground disturbance. Additional upgrades could occur to second-generation detachable-grip (e.g., Alpine Springs and Sam's Knob).



- An addition is planned to Sam's Smokehouse to increase capacity, as is a small expansion and reconfiguration of the High Alpine Restaurant. Changes are also planned for the Lynn Britt Cabin and the Spider Sabich picnic area. An interior remodel was recently completed on the Ullrhof. No major remodel is planned and only maintenance actions such as paint, roof/deck repairs, mechanical/kitchen upgrades would take place during the period of this MDP.
- No new snowmaking coverage is planned over what has been previously approved, but two additional on-mountain snowmaking ponds are planned to increase snowmaking production during favorable conditions and to increase efficiency.
- No expansion of the recently completed snow tubing facility is anticipated. However, adjustments to the number and width of lanes using snow management may occur to accommodate a slightly increased user capacity. Additionally, two new facilities—a ticket office/tube storage building and a restroom—are proposed.
- On-mountain huts are planned within the Snowmass SUP, and would offer an overnight experience comparable to the 10th Mountain and Braun huts systems.
- Other projects planned include the installation of additional cell tower sites, data equipment, fiber optic lines, and antennae tower sites.
- Summer and multi-season projects, including mountain biking and hiking trails, an alpine coaster, a zip line/canopy tour, challenge course, climbing wall, and multi-purpose gatherings sites, are planned in accordance with the summer zone designations. Upgrades to existing group camp sites may occur in the future.

While there are no newly planned projects that would have an effect of increasing Snowmass' CCC, the net result of implementing all previously approved but unimplemented projects would increase the existing CCC by about 1,240 to 13,600.

B. UPGRADED LIFT NETWORK

Upgraded lifts are shown on Figure IV-1 and details are specified in Table VI-1.

As described in Chapter V, there are three previously approved lift installations that have not yet been implemented:

1. *High Alpine Lift*

This project involves the replacement of the original 1978 double chair with a detachable high speed lift. The lift will also be realigned to improve access, circulation, and repeat-skiing. With the bottom terminal on the lower Green Cabin trail, skiers will be able to access the lift directly from the Sheer Bliss and Big Burn lifts, improving access to the High Alpine terrain and improving circulation around the resort. Additionally, the lift alignment will allow for intermediate skiers to repeat-ski the lift. The only intermediate level trail off the lift is Green Cabin, which does not return to the current bottom terminal location. Because of the popularity of Green Cabin, the lift will receive more use in its new location. Furthermore, this alignment will improve utilization of the Gwyn's High Alpine restaurant. This lift replacement was previously approved in the 2015 DN/FONSI.

The High Alpine lift was approved, and will be installed, with a capacity of 1,200 pph. However, the ultimate design capacity of the lift is 1,800 pph. Snowmass plans to assess skier circulation after the lift is installed to determine when the capacity upgrade is necessary. Since the realigned lift will serve an important cross-mountain circulation function, in addition to the anticipation that, due to the new bottom terminal location, the lift will be better-utilized, it is thought that skier circulation may well benefit from a capacity of 1,800 pph. All calculations in this MDP assume the approved 1,200 pph. An upgrade to 1,800 pph would require further amendments and analysis.

Table VI-1. Lift Specifications – Upgrade Plan

Lift Name, Lift Type	Top Elev.	Bottom Elev.	Vertical Rise	Slope Length	Avg. Grade	Actual Design Capacity	Rope Speed	Carrier Spacing	Year Installed
	(ft)	(ft)	(ft)	(ft)	(%)	(pers/hr)	(fpm)	(ft)	
Two Creeks/DC4	9,810	8,110	1,700	9,874	18	1,640	1,100	161	Poma/1995
Assay Hill/C4	8,523	8,325	197	1,438	14	1,200	300	60	Poma/2007
Elk Camp Gondola Full/G8	9,803	8,432	1,371	8,659	16	1,961	1,000	184	Poma/2006
Elk Camp Gondola Upper/G8	9,803	8,526	1,277	7,499	17	654	1,000	184	Poma/2006
Elk Camp/DC4	11,320	9,779	1,540	7,559	21	2,020	1,100	131	Poma/1995
Meadows/C4	9,927	9,815	112	1,304	9	1,200	300	60	Poma/2007
Meadows Sunkid/C	9,837	9,816	21	235	9	600	160	16	Sun Kid/2005
Bear Bottom Sunkid/C	9,997	9,947	50	440	12	600	160	16	Sun Kid/2014
Alpine Springs/DC4	10,505	8,987	1,518	7,164	22	2,400	1,100	110	Poma/1993
High Alpine/DC4	11,870	10,215	1,655	5,561	31	1,800	1,000	100	Poma/2015
Cirque Lift/S	12,527	11,741	786	3,981	20	450	700	93	Poma/1998
Sheer Bliss/DC4	11,857	9,650	2,207	9,283	25	2,000	1,100	132	Poma/2008
Big Burn/DC4	11,842	9,854	1,989	7,793	26	2,200	1,000	109	Replacement
Coney Glade/DC4	10,103	8,890	1,213	4,931	26	2,000	1,000	120	Replacement
Village Express Full/DC6	10,614	8,461	2,154	10,041	22	1,876	1,050	201	Poma/2005
Village Express Lower/DC6	9,661	8,461	1,200	6,234	20	924	1,050	135	Poma/2005
SkyCab/G6	8,601	8,454	146	1,069	14	530	1,000	135	Poma/2005
Treehouse Sunkid/C	8,601	8,606	5	80	6	720	80	7	Sun Kid/1997
Treehouse Overflow Sunkid/C	8,553	8,548	5	80	6	720	80	7	Sun Kid/1995
Scooper Lift/P	9,365	9,137	227	876	27	428	350	49	Poma/2000
Sam's Knob/DC4	10,619	9,419	1,199	3,869	33	1,800	1,000	133	Poma/2005
Campground/C2	9,659	8,224	1,435	4,730	32	664	550	99	Poma/2003
Burnt Mountain/DC4	11,368	8,636	2,733	11,596	24	1,800	1,000	133	Planned
Naked Man/S	11,370	11,156	213	601	38	700	650	56	Planned

Source: SE Group

c = carpet conveyor / s = surface lift

C2 = fixed-grip double chairlift / C4 = fixed-grip quad chairlift

DC4 = detachable quad chairlift / DC6 = detachable six-passenger chairlift

G6 = six-passenger gondola / G8 = eight-passenger gondola



2. *Burnt Mountain Lift*

The Burnt Mountain lift will provide access to the top of Burnt Mountain and the existing ski trails there. These trails are currently hike-to only. Additional trails (also previously approved) will be built in the area. The area is located in the easternmost portion of the Snowmass SUP, with the bottom terminal located in the Two Creeks area, near the intersection of the Long Shot and East Brach trails. This lift was previously approved in the 1994 ROD.

3. *Naked Man Lift*

The Naked Man lift (or surface lift) will provide low-capacity access from the top of the Elk Camp Chairlift to the top of Burnt Mountain, which is currently hike-to only. The lift was previously approved in the 1994 ROD and was included in the 2003 SMMP. The Naked Man lift is intended to provide temporary access to the summit of Burnt Mountain, prior to the installation of the Burnt Mountain lift. Once the Burnt Mountain lift is installed, the Naked Man lift will be removed. Therefore, the Naked Man lift is not included in the upgrade CCC model. Since this lift would not be repeat-skied, and it would provide access to existing terrain that is already accessed via hiking, it would not increase CCC in any significant way.

4. *Detachable-Grip Lift Upgrades*

The Big Burn and Coney Glade lifts were originally constructed as high-speed detachable lifts in 1987 and 1986, respectively. Both lifts are approaching the end of their functional life span and will be rebuilt, upgraded, or replaced in the near future as part of Snowmass' ongoing lift maintenance program. Minimal ground disturbance would be associated with these lift upgrades, generally at existing terminal locations. The second generation of detachable-grip lifts (e.g., Alpine Springs and Sam's Knob) may also undergo major maintenance or modification during the life of this MDP (refer to Table VI-1).

C. UPGRADED TERRAIN NETWORK

1. *Terrain Variety*

As discussed in Chapter IV, terrain variety is the key factor in evaluating the quality of the actual skiing and riding guest experience (as opposed to lift quality, restaurant quality, or any other factor). A resort must have a diverse, interesting, and well designed developed trail system, but also must have a wide variety of alternate style terrain, such as mogul runs, bowls, trees, glades, open parks, in-bounds "backcountry style" (i.e., hike-to) terrain, and terrain parks and pipes. The reader is referred to Chapter IV (Section C) for an in-depth discussion of the importance of terrain variety.

2. *Developed Alpine Trails*

As previously mentioned, there is very little actual trail clearing necessary to create the developed trails included in this MDP. No trails are newly planned, but there are a few previously approved trails (refer to Chapter V) that will be implemented. Additionally, it is anticipated that localized trail widening and maintenance will be necessary throughout the life of the MDP to address skier safety issues and changing circulation patterns. These projects will be identified on a case-by-case basis and will respond to changes in skier visitation and vegetation conditions (e.g., forest health).

a. Alpine Springs/Elk Camp

A new trail will be constructed that connects Turkey Trot to Adam's Avenue, therefore bypassing the congested Elk Camp area. This will allow for quicker repeat skiing of the Hanging Valley Wall, make it simpler for skiers to return to the base area, and will reduce congestion in the Elk Camp area. This trail is about 2.4 acres in size and is identified on Figure VI-1 as "P5." This trail was previously approved in the 2015 DN/FONSI as the Elk Camp Lower Bypass.

As described in Chapter V under previously-approved projects, another new trail is the Level 3 trail, which would facilitate movement of Level 3 ski school students from Elk Camp Meadows to the base area (by bypassing a steep section of Funnel), thus eliminating the need for ski school classes to download on the Elk Camp Gondola

to Assay Hill. This trail is about 0.8 acre in size and is identified on Figure VI-1 as “P6.”

b. Burnt Mountain

Approximately 30 acres of newly-constructed developed terrain would be added off the Burnt Mountain lift, between Long Shot and the upper Elk Camp area in four new trail segments, identified as “P1-P4.” This terrain was previously approved in the 1994 ROD, as described in Chapter V. In addition, approximately 100 acres of terrain between Split Tree and trails “P1-P4” would be gladed pursuant to the 1994 ROD. The hike-to developed trail Long Shot would become a lift-served intermediate trail. The gladed areas Split Tree, A-Line, and Rio would become lift-served but would remain glades. Additional glade improvements are planned in this area (refer to Figure VI-1).

These changes would bring the total of the developed terrain network to 1,628 acres.

The planned trail configuration under the Upgrade Plan is depicted in Figure VI-1 and the proposed terrain specifications are detailed in Table VI-2.





Table VI-2. Terrain Specifications – Upgrade Plan

Trail Area/Name	Top Elev. (ft)	Bottom Elev. (ft)	Vertical Rise (ft)	Slope Length (ft)	Avg. Width (ft)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Creekside	9,686	8,110	1,576	9,760	163	36.4	16%	47%	Intermediate
Cascade	9,609	8,861	748	3,523	127	10.3	22%	38%	Intermediate
West Fork	9,350	8,550	800	5,625	90	11.6	14%	32%	Low Intermediate
Assay Hill	8,514	8,324	190	1,499	194	6.7	13%	15%	Novice
Lone Star	9,810	9,623	187	1,235	131	3.7	15%	29%	Low Intermediate
Bottoms Up	9,639	9,364	275	1,017	178	4.2	28%	36%	Intermediate
Funnel Upper	9,766	9,363	403	2,781	273	17.4	15%	37%	Intermediate
Funnel Lower	9,363	8,460	903	6,359	326	47.6	15%	24%	Novice
Funnel Bypass	9,616	9,488	128	1,418	59	1.9	9%	15%	Novice
Funnel Bypass	9,370	9,320	51	537	51	0.6	9%	14%	Novice
No Name	9,236	9,001	235	1,452	86	2.9	17%	25%	Novice
Eddy Out	9,148	8,661	487	2,586	65	3.8	19%	41%	Intermediate
Slider	9,847	8,974	873	5,238	179	21.6	17%	33%	Intermediate
Bull Run	11,323	9,926	1,396	6,654	473	72.2	21%	35%	Low Intermediate
Grey Wolf	11,310	10,155	1,155	4,904	304	34.2	24%	37%	Intermediate
Bear Bottom	11,303	9,932	1,371	6,443	211	31.1	22%	38%	Intermediate
Gunner's View	10,987	10,070	917	4,611	180	19.1	20%	34%	Low Intermediate
Sandy Park	11,315	9,852	1,462	8,285	201	38.3	18%	44%	Intermediate
EC Meadows	9,928	9,804	124	1,517	405	14.1	8%	14%	Beginner
Naked Lady	10,438	8,996	1,442	7,155	310	50.9	21%	36%	Intermediate
Lodge Pole	10,221	9,720	501	2,126	155	7.6	24%	38%	Intermediate
Log Deck	10,471	9,741	729	3,405	182	14.2	22%	39%	Intermediate
Toms Trace	9,789	9,353	435	1,829	269	11.3	25%	51%	Advanced
Lunkerville	9,866	8,990	876	4,652	233	24.9	19%	36%	Intermediate
Adam's Avenue Lower	9,214	8,638	577	3,726	161	13.7	16%	28%	Low Intermediate
Adam's Avenue Middle Upper	9,396	9,330	65	371	48	0.4	18%	20%	Low Intermediate
Adam's Avenue Middle Lower	9,280	9,240	40	480	81	0.9	8%	13%	Low Intermediate
Adam's Avenue Upper	9,646	9,455	191	1,670	128	4.9	12%	18%	Low Intermediate
Coffee Pot	10,391	9,095	1,295	6,446	158	23.3	21%	38%	Intermediate
Granite	10,298	9,786	513	2,435	118	6.6	22%	43%	Intermediate
Green Cabin Lower	10,453	8,942	1,512	7,987	212	39.0	19%	38%	Intermediate
Green Cabin Upper	11,782	10,264	1,518	6,597	193	29.2	24%	44%	Intermediate
Reidar's	11,774	10,475	1,300	4,390	191	19.3	31%	57%	Expert
Reidar's Glade*	11,769	10,450	1,300	4,215	299	29.0	38%	62%	Expert Glade-Gated
Showcase	11,791	10,527	1,264	4,129	221	20.9	32%	46%	Advanced
The Edge	11,797	10,472	1,324	4,488	231	23.8	31%	45%	Advanced
Roberto's	11,920	11,427	492	1,483	209	7.1	36%	73%	Chute/Bowl-Gated
Frog Pond Glade	11,448	10,380	1,068	3,472	990	78.9	33%	50%	Expert Glade-Gated
Baby Ruth	11,357	10,738	619	1,462	200	6.7	47%	77%	Chute/Bowl-Gated
Big Spruce	11,211	10,430	781	1,875	286	12.3	46%	74%	Chute/Bowl-Gated
Cassidy's	10,817	10,394	424	991	236	5.4	48%	66%	Expert Glade-Gated
Willy's	10,662	10,242	420	968	425	9.4	49%	75%	Bowl/Glade-Gated
Cookies	10,996	10,545	451	1,104	305	7.7	45%	58%	Expert Glade-Gated
Turkey Trot	10,592	9,802	790	4,928	160	18.1	16%	42%	Intermediate
Turket Trot Upper	10,490	10,431	59	718	26	0.4	8%	12%	Intermediate
Rocky Mtn. High	12,497	11,795	702	3,860	360	31.9	19%	25%	Low Intermediate
AMF	11,945	11,369	576	1,720	355	14.0	36%	77%	Chute/Bowl-Gated
Cirque Headwall	12,344	11,677	667	2,119	922	44.8	33%	58%	Chute/Bowl-Gated
East Wall	12,192	11,683	509	1,910	356	15.6	28%	82%	Chute/Bowl-Gated
High Traverse	12,501	11,812	689	6,273	149	21.5	11%	55%	Chute/Bowl-Gated
Adios Ridge	11,644	11,209	435	1,085	460	11.5	44%	54%	Chute/Bowl-Gated

Table VI-2. Terrain Specifications – Upgrade Plan

Trail Area/Name	Top Elev. (ft)	Bottom Elev. (ft)	Vertical Rise (ft)	Slope Length (ft)	Avg. Width (ft)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Ladder Lower	11,224	10,813	411	859	269	5.3	56%	89%	Chute/Bowl-Gated
Ladder Upper	11,441	11,241	201	414	99	0.9	56%	75%	Chute/Bowl-Gated
Dikes	11,669	10,241	1,428	5,923	949	129.1	25%	60%	Bowl/Glade-Gated
Gowdy's	11,842	11,267	575	1,827	308	12.9	34%	108%	Chute/Bowl-Gated
KT Gully	11,307	11,104	202	466	175	1.9	50%	77%	Chute/Bowl-Gated
Rock Island	11,137	10,675	462	988	493	11.2	54%	88%	Chute/Glade-Gated
Buck Skin	10,715	10,149	566	1,723	330	13.1	35%	73%	Expert Glade-Gated
Sheer Bliss	11,833	9,674	2,158	8,926	497	101.8	25%	44%	Intermediate
Camp 3	10,113	9,690	424	1,489	165	5.6	30%	47%	Advanced
Garrett Gulch	10,775	9,852	923	3,460	116	9.2	28%	48%	Advanced
West Face	10,928	10,679	249	677	667	10.4	40%	50%	Chute/Bowl-Gated
Free Fall*	10,617	9,905	712	2,170	180	9.0	40%	69%	Expert Glade-Gated
Glissade	10,205	9,940	264	568	104	1.4	53%	60%	Expert
Whispering Jesse	10,901	9,900	1,001	3,390	191	14.9	31%	39%	Intermediate
Trestle	9,880	9,695	185	1,598	83	3.1	12%	38%	Intermediate
Timberline	11,725	9,918	1,807	6,721	204	31.4	28%	40%	Intermediate
Wineskin	11,837	9,972	1,865	6,875	162	25.5	28%	47%	Advanced
Dallas Freeway	11,585	10,125	1,461	5,240	179	21.5	29%	42%	Intermediate
Micks' Gully	11,821	10,167	1,654	6,263	230	33.1	27%	42%	Intermediate
Powerline Glades	11,440	10,440	1,000	3,552	676	55.1	29%	43%	Intermediate Glade
Sneaky's	11,837	10,572	1,265	5,931	193	26.2	22%	29%	Low Intermediate
Sneaky's Glade*	11,513	10,708	805	3,467	332	26.4	24%	31%	Intermediate Glade
Jack of Hearts	10,719	10,523	197	689	160	2.5	30%	30%	Intermediate
Powderhorn	10,565	8,253	2,312	9,081	146	30.4	27%	56%	Expert
Lower Banzai	9,820	8,895	926	3,865	217	19.2	25%	42%	Intermediate
Cabin	9,766	8,933	833	3,414	274	21.5	25%	45%	Intermediate
Coney Glade	10,096	9,748	348	1,288	466	13.8	28%	39%	Intermediate
Blue Grouse	9,667	8,855	812	3,650	299	25.0	23%	44%	Intermediate
Velvet Falls	9,614	8,857	757	3,348	225	17.3	23%	38%	Intermediate
Nor Way	9,201	9,073	127	756	63	1.1	17%	25%	Low Intermediate
Hal's Hollow	9,580	8,980	600	2,514	195	11.2	25%	40%	Intermediate
Scooper	9,507	9,008	499	2,333	214	11.5	22%	37%	Intermediate
Dawdler	9,638	8,714	924	6,685	194	29.7	14%	28%	Novice
Fanny Hill	8,899	8,462	437	3,175	251	18.3	14%	17%	Novice
Lunchline	10,117	9,428	689	4,784	144	15.9	15%	34%	Low Intermediate
Moonshine	10,191	9,416	775	3,436	205	16.2	23%	47%	Advanced
Ute Chute	10,334	9,710	624	1,846	168	7.1	36%	45%	Advanced
Fast Draw	10,435	10,036	399	1,103	120	3.0	39%	44%	Intermediate
Max Park	10,579	9,858	721	4,145	423	40.3	18%	43%	Intermediate
Sunnyside	10,609	9,943	666	2,600	122	7.3	27%	44%	Intermediate
Banzai Ridge	10,575	9,854	721	3,267	146	11.0	23%	32%	Low Intermediate
Monks Hood	9,895	9,544	351	2,002	84	3.8	18%	30%	Low Intermediate
Promenade	10,561	9,562	998	2,997	253	17.4	36%	46%	Advanced
Zugspitze	10,552	9,420	1,133	3,694	181	15.4	32%	47%	Advanced
Slot Upper	10,603	9,443	1,160	3,534	276	22.4	35%	45%	Advanced
Slot Lower	9,437	8,228	1,209	5,390	285	35.2	23%	47%	Advanced
Wildcat	10,484	9,124	1,360	4,959	145	16.5	29%	45%	Intermediate
Howler Upper	10,009	9,593	416	1,184	84	2.3	38%	47%	Advanced
Howler Lower	9,488	9,450	38	367	52	0.4	10%	17%	Advanced
Bearclaw	10,046	8,226	1,820	6,546	256	38.5	29%	51%	Advanced
Campground	10,621	8,223	2,398	8,510	201	39.2	30%	53%	Advanced



Table VI-2. Terrain Specifications – Upgrade Plan

Trail Area/Name	Top Elev. (ft)	Bottom Elev. (ft)	Vertical Rise (ft)	Slope Length (ft)	Avg. Width (ft)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Split Tree	11,260	9,909	1,351	4,854	659	73.5	29%	58%	Expert Glade-Gated
Rio	11,309	9,976	1,334	4,671	483	51.8	30%	51%	Expert Glade-Gated
A-Line	11,281	9,105	2,176	10,736	302	74.4	21%	48%	Expert Glade-Gated
Long Shot	11,325	8,121	3,204	16,529	286	108.4	20%	47%	Advanced
Black Saturday Bowl	10,912	10,343	569	1,952	484	21.7	31%	66%	Chute/Bowl-Gated
Burns Cliffs	11,060	10,793	267	551	415	5.3	57%	83%	Chute/Glade-Gated
Buttermilk	10,953	10,484	469	1,484	490	16.7	34%	65%	Expert Glade-Gated
Cirque Cornice	12,219	11,836	383	1,422	570	18.6	28%	44%	Chute/Bowl-Gated
Coyote Hollow	11,716	10,850	866	3,461	497	39.5	26%	42%	Expert Glade-Gated
Coyote Knob	11,865	11,698	168	390	567	5.1	48%	54%	Chute/Bowl-Gated
East 1 & 2	11,765	11,299	466	1,515	461	16.0	33%	54%	Chute/Bowl-Gated
Glade 1	10,534	10,213	320	632	250	3.6	59%	65%	Expert Glade-Gated
Glade 2	10,482	10,197	285	569	190	2.5	58%	62%	Expert Glade-Gated
Glade 3	10,412	10,172	240	485	221	2.5	57%	61%	Expert Glade-Gated
Hanging Valley Headwall	11,888	11,520	368	1,088	217	5.4	37%	83%	Chute/Bowl-Gated
Hanging Valley Runout	10,273	10,094	179	1,213	308	8.6	15%	22%	Chute/Bowl-Gated
Little Headwall	12,027	11,863	164	543	564	7.0	32%	58%	Chute/Bowl-Gated
North Woods	10,914	10,619	295	975	999	22.4	32%	43%	Chute/Bowl-Gated
Old Man Basin	11,403	11,149	255	791	248	4.5	34%	50%	Chute/Bowl-Gated
Pitch in the Valley	11,129	10,806	323	1,012	317	7.4	34%	56%	Expert Glade-Gated
Possible	11,591	11,503	88	339	65	0.5	28%	40%	Chute/Bowl-Gated
Possible Basin	11,460	11,096	364	745	374	6.4	57%	86%	Chute/Bowl-Gated
Ptarmigan Draw	12,089	11,772	317	1,292	299	8.9	25%	33%	Chute/Bowl-Gated
Rayburns Chute and Bowl	11,040	10,835	206	598	312	4.3	37%	45%	Chute/Bowl-Gated
Strawberry Patch	10,944	10,567	377	701	157	2.5	64%	75%	Chute/Bowl-Gated
Sun Kiss Glades	11,276	10,910	366	916	373	7.9	44%	66%	Chute/Glade-Gated
Sunspot	10,731	10,453	278	906	501	10.4	32%	41%	Chute/Glade-Gated
Union	10,756	10,295	461	1,211	324	9.0	42%	68%	Bowl/Glade-Gated
Valley Valley	11,173	10,801	372	910	284	5.9	45%	58%	Chute/Bowl-Gated
Wall 1	11,166	10,307	859	2,282	314	16.4	41%	83%	Chute/Bowl-Gated
Wall 2	11,058	10,649	409	736	132	2.2	67%	73%	Chute/Bowl-Gated
Waters	10,555	10,155	400	1,201	278	7.7	36%	66%	Expert Glade-Gated
West 1&2	11,896	11,527	369	968	165	3.7	42%	73%	Chute/Bowl-Gated
Castle Glade*	11,352	10,780	572	1,380	286	9.0	51%	74%	Expert Glade-Gated
Long Shot Glade*	10,471	9,663	808	3,100	210	15.0	24%	31%	Intermediate Glade
Upper Green Cabin Glade*	11,116	10,750	366	1,870	187	8.0	31%	35%	Intermediate Glade
P1	10,635	8,751	1,884	8,218	87	16.4	24%	43%	Intermediate
P2	10,333	10,033	300	782	110	2.0	42%	65%	Expert
P3	10,217	9,260	957	3,128	128	9.2	32%	41%	Intermediate
P4	9,347	8,977	370	1,651	74	2.8	23%	50%	Advanced
P5	9,841	9,631	210	1,381	77	2.4	15%	35%	Low Intermediate
P6	9,190	9,119	71	803	44	0.8	9%	24%	Novice
Burnt Mountain Glades						100			Intermediate/Expert Glade
Total				468,965		2,772			

* The 2015 DN/FONSI approved 84 acres of new/improved glading in Reidar's Glade, Freefall, Sneaky's Glade, Castle Glade, Long Shot Glade, and Upper Green Cabin Glade. Reidar's Glade, Freefall, and Sneaky's Glade already exist as glades within the Snowmass SUP area. Portions of these glades will be expanded, and portions will be improved. Castle Glade, Long Shot Glade, and Upper Green Cabin Glade are new glades. Of the 84 acres of new/improved glading that was approved, 51 acres will consist of newly gladed terrain, and 33 acres will be improved existing gladed terrain.

c. Terrain Distribution by Ability Level

This terrain distribution analysis considers the 1,628 acres within the developed terrain network at Snowmass and does not change significantly from existing conditions. The ideal breakdown of trail capacity by

ability level should align with percentages of skiers by ability level, based on the regional destination skier market.

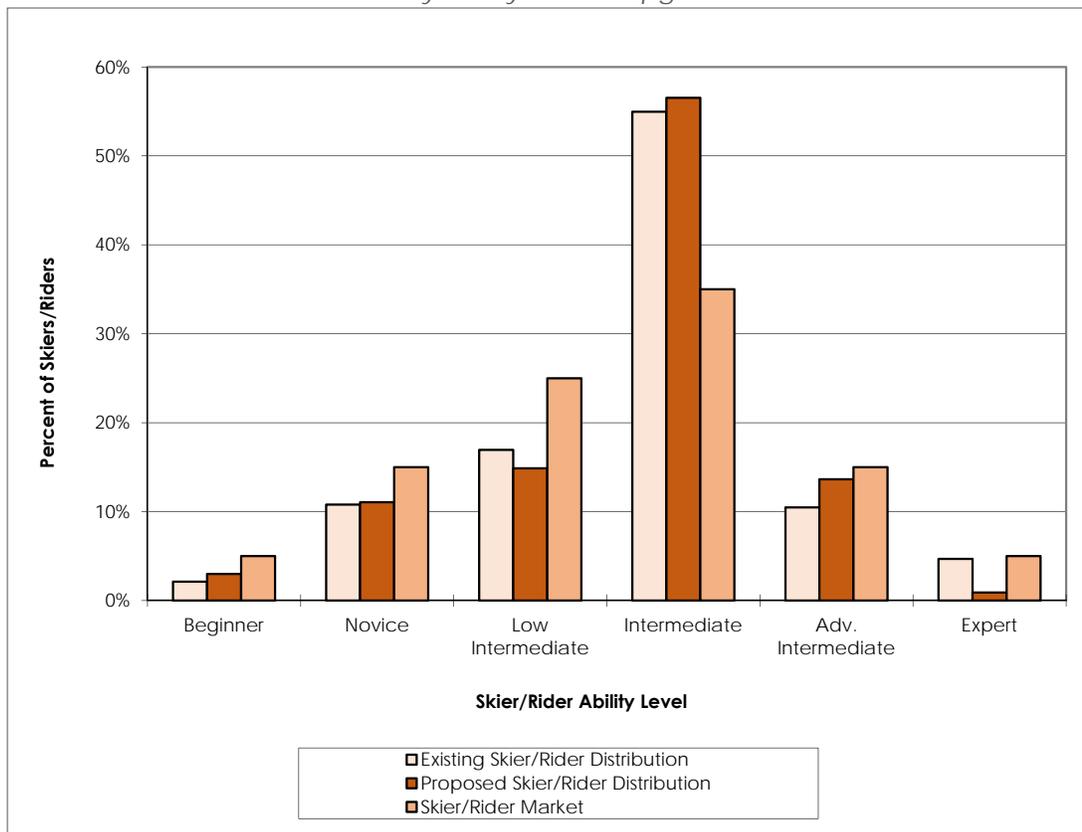
The terrain classification breakdown of the Upgrade Plan is set forth in the Table VI-3 and Chart VI-1.

Table VI-3. Terrain Distribution by Ability Level – Upgrade Plan

Skier/Rider Ability Level	Trail Area (acres)	Skier/Rider Capacity (guests)	Actual Skier/Rider Distribution (%)	Relevant Skier/Rider Market (%)
Beginner	14	353	3%	5%
Novice	108	1,302	11%	15%
Low intermediate	219	1,751	15%	25%
Intermediate	832	6,656	57%	35%
Advanced	402	1,607	14%	15%
Expert	53	106	1%	5%
TOTAL	1,628	11,774	100%	100%

Source: SE Group

Chart VI-1. Terrain Distribution by Ability Level – Upgrade Plan



Source: SE Group



The last column in Table VI-3 represents what can be considered the ideal skill level distribution in the relevant market and provides a comparison with the planned conditions.

Because this MDP does not contemplate significant additions to the network of skiing terrain, the overall terrain distribution would not change appreciably. Since most of the new terrain would be rated intermediate, there would be a slight increase to intermediate percentage and very slight decreases in most other categories.

3. Planned Trail Grading Projects

The existing 30-plus acre Snowmass Terrain Park, served by the Coney Glade lift, is world renowned for its quality and diversity of features. Several areas of the existing park require significant amounts of man-made snow to remove existing cross-slopes and/or create the larger “hits” in the expert portion of the park. The areas where specific grading would be required are the 3.5 acres on Banzai Ridge above the Lunchline Overpass and 4.5 acres on Lower Banzai below the Lunchline Overpass.

These areas are identified on Figure VI-1.

4. Undeveloped and Gladed Expert Terrain

Undeveloped terrain is an important component of Snowmass. The topography within the SUP area includes steeps, chutes, bowls, and glades intermingled within, and outside of, the developed and maintained terrain network.

Undeveloped and gladed terrain will continue to be offered extensively at Snowmass. With the addition of the Burnt Mountain lift, a significant amount of existing hike-to terrain will become lift-served.

a. Lift Accessed Undeveloped, but Maintained, Terrain

This type of terrain accounts for an existing 1,101 acres. These areas are detailed in the Table VI-2 and include maintained open bowls, areas that have been specifically thinned for glades, and chutes. An additional 151 acres of glades that have been previously approved will be implemented. However, 108 acres of hike-to terrain on Burnt Mountain would become developed, lift served

terrain with the addition of the Burnt Mountain lift. As a result, the total amount of this terrain would increase by about 42 acres to 1,143 acres. Additionally, the 200 acres of existing glades on Burnt Mountain that are classified as Hike-to under current operations would become lift served with the addition of the Burnt Mountain lift.

Table VI-4 summarizes the upgraded maintained, undeveloped terrain at Snowmass.

b. Densely-treed and Less Accessible Areas

This consists primarily of the natural (non-thinned or maintained) forested areas between the defined skiing areas and ski runs, and also accounts for some of the less accessible open areas in the upper parts of the mountain. This total decreases as other areas become more developed. These areas will total 570 acres of terrain.

Table VI-5 summarizes the terrain at Snowmass, by category, under the Upgrade Plan.

Table IV-4. Undeveloped Terrain - Upgrade Plan

Terrain Type	Trail Area (acres)
Chutes/Bowls (Gated)	325
Bowls/Glades (Gated)	148
Chutes/Glades (Gated)	35
Advanced/Expert Glades (Gated)	430
Intermediate Glades	105
Additional Burnt Mountain Glades	100
TOTAL	1,143

Table VI-5. Terrain Summary – Upgrade Plan

Terrain Type	Existing Conditions (acres)	Upgrade Plan (acres)
Developed	1,486	1,628
Lift Accessed Undeveloped (but maintained)	1,101	1,143
Densely Treed/ Less Accessible	755	570
TOTAL	3,342	3,342

Source: SE Group

5. Terrain Parks

As described in Chapter IV, Snowmass currently builds terrain parks throughout the resort to offer skiers and riders of all abilities the chance to improve their freestyle skills. The resort plans on continuing this practice as conditions warrant, in locations that are appropriate based on the varying and evolving needs of park users.

6. Snow Tubing

Two new facilities are planned for the tubing area—a ticket office/tube storage building and a restroom. The ticket office/tube storage building will allow guests, who often arrive without having purchased tubing hill tickets at the Base Village ticket office, to purchase tickets on-site rather than walking back to the gondola to do so. The tube storage portion of the facility will improve organization at the tubing hill and will also provide a place where tubes can be stored out of the weather and away from direct sunlight.

The restroom is planned to be an outhouse with a vault toilet. Currently, the nearest restroom is at the Elk Camp Restaurant, which is a relatively long walk from the tubing area.

No actual expansion of the tubing facility is planned, however, it is hoped that the existing site can be re-worked and re-configured to allow for an additional two or three lanes of tubing. If this is accomplished, it is hoped that tubing tickets can be increased to 75 tickets per half hour sale, or 150 effectively at one time.

D. PLANNED CAPACITY ANALYSIS

1. Comfortable Carrying Capacity

As detailed in Chapter IV, the existing CCC for Snowmass is calculated at 12,360. Under the Upgrade Plan, the CCC would increase, as detailed in Table VI-6, and has been calculated at 13,600 guests per day.

2. Density Analysis

As discussed in Chapter IV, an important aspect of resort design is the balancing of uphill lift capacity with downhill trail capacity. Trail densities are derived by contrasting the uphill, at-one-time capacity of each lift system (CCC) with the trail acreage associated with





Table IV-6. Comfortable Carrying Capacity – Upgrade Plan

Lift Name, Lift Type	Slope Length (ft)	Vertical Rise (ft)	Actual Design Capacity (guests/hr)	Oper. Hours (hrs)	Up-Mtn. Access Role (%)	Misload/ Lift Stop (%)	Adjusted Hourly Cap. (guests/hr)	VTF/ Day (000)	Vertical Demand (ft/day)	CCC (guests)
Two Creeks/DC4	9,874	1,700	1,640	7.00	50	5	738	8,784	13,378	660
Assay Hill/C4	1,438	197	1,200	7.00	0	10	1,080	1,493	3,626	410
Elk Camp Gondola Full/G8	8,659	1,371	1,961	7.00	50	5	883	8,471	9,523	890
Elk Camp Gondola Upper/G8	7,499	1,277	654	7.00	20	5	490	4,381	10,117	430
Elk Camp/DC4	7,559	1,540	2,020	6.50	0	5	1,919	19,215	14,150	1,360
Meadows/C4	1,304	112	1,200	6.50	0	15	1,020	745	2,222	340
Meadows Sunkid/C	235	21	600	6.50	0	5	570	79	1,453	50
Bear Bottom Sunkid/C	440	50	600	6.50	0	5	570	185	3,356	60
Alpine Springs/DC4	7,164	1,518	2,400	6.50	10	5	2,040	21,678	15,590	1,390
High Alpine/DC4	5,561	1,655	1,200	6.50	0	5	1,140	12,263	29,059	420
Cirque Lift/P	3,981	786	450	5.50	0	10	405	1,911	14,875	130
Sheer Bliss/DC4	9,283	2,207	2,000	6.50	10	5	1,700	26,262	21,337	1,230
Big Burn/DC4	7,793	1,989	2,200	6.50	0	5	2,090	29,093	18,515	1,570
Coney Glade/DC4	4,931	1,213	2,000	6.50	0	5	1,900	16,132	20,028	810
Village Express Full/DC6	10,041	2,154	1,876	7.00	40	10	938	14,141	15,319	920
Village Express Lower/DC6	6,234	1,200	924	7.00	0	10	832	6,987	9,354	750
SkyCab/G6	1,069	146	530	7.50	100	0	-	0	5,029	-
Treehouse Sunkid/C	80	5	720	7.00	0	5	684	24	358	70
Scooper Lift/P	876	227	428	7.00	0	10	385	613	7,073	90
Sam's Knob/DC4	3,869	1,199	1,800	6.50	0	5	1,710	13,331	25,736	520
Campground/C2	4,730	1,435	664	6.00	0	10	598	5,146	21,371	240
Burnt Mountain/DC4	11,596	2,733	1,800	6.00	0	10	1,620	26,560	20,999	1,260
TOTAL	114,217		28,867				23,311	217,494		13,600

Source: SE Group

each lift pod. The trail density analysis considers only the acreage associated with the developed trail network. The density analysis for the Upgrade Plan is illustrated in Table VI-7.

This table shows that the overall existing density of 5 skiers-per-acre will remain the same after the upgrades are completed. This indicates that the lift and trail upgrades are balanced well with each other.

3. Lift and Terrain Network Efficiency

As discussed in Chapter IV, overall resort efficiency is becoming an increasingly important factor in the

industry, relating not only to energy/operational efficiency, but also to efficiency of the design and layout of the resort. The idea behind resort design efficiency is to have a well-balanced lift and trail network (i.e., the uphill lift capacity balances with the downhill trail capacity that it serves) that is efficiently served by the fewest number of lifts possible, while maintaining desired CCC rates, circulation routes, and service to the full spectrum of ability levels and types.

a. Lift Network Efficiency

As discussed in Chapter IV, this document analyzes Lift Network Efficiency by calculating the average CCC per

Table VI-7. Density Analysis – Upgrade Plan

Lift Name, Lift Type	Daily Lift Capacity	Guest Dispersal				Density Analysis				Density Index (%)
		Support Fac./Milling (guests)	Lift Lines (guests)	On Lift (guests)	On Terrain (guests)	Terrain Area (acres)	Terrain Density (guests/ac)	Target Trail Density (guests/ac)	Diff. (+/-)	
Two Creeks/D4	660	165	25	110	360	46.6	8	8	0	100
Assay Hill/C4	410	103	54	86	167	20.9	8	12	-4	67
Elk Camp Gondola Full/G8	890	223	44	169	454	69.5	7	10	-3	70
Elk Camp Gondola Upper/G8	430	108	25	245	52	18.9	3	10	-7	30
Elk Camp/D4	1,360	340	160	220	640	195.7	3	8	-5	38
Meadows/C4	340	85	51	74	130	12.7	10	25	-15	40
Meadows Sunkid/C	50	15	10	14	11	0.7	16	25	-9	64
Bear Bottom Sunkid/C	60	15	10	26	9	0.7	13	25	-12	52
Alpine Springs/D4	1,390	348	102	221	719	210.7	3	8	-5	38
High Alpine/D4	420	105	19	106	190	106.1	2	5	-3	40
Cirque Lift/P	130	33	20	38	39	35.8	1	8	-7	13
Sheer Bliss/D4	1,230	308	85	239	598	139.9	4	7	-3	57
Big Burn/D4	1,570	393	105	271	801	172.5	5	7	-2	71
Coney Glade/D4	810	203	95	156	356	47.6	7	8	-1	88
Village Express Full/D6	920	230	78	149	463	136.2	3	8	-5	38
Village Express Lower/D6	750	188	28	249	285	79.9	4	10	-6	40
Treehouse Sunkid/C	70	18	23	11	18	1.8	10	12	-2	83
Scooper Lift/P	90	23	13	16	38	5.7	7	8	-1	88
Sam's Knob/D4	520	130	86	110	194	63.2	3	5	-2	59
Campground/C2	240	60	20	86	74	124.2	1	4	-3	25
Burnt Mountain/D4	1,260	315	81	313	551	138.7	4	5	-1	85
Total	13,600	3,408	1,134	2,909	6,149	1,628	5	8	-4	56

Source: SE Group

lift. Optimally, and in general, the average CCC per lift would likely be close to 1,000. Industry-wide, the average CCC per lift is approximately 650. The existing average CCC per lift at Snowmass is well above average at 883, meaning that Snowmass rates very well in terms of lift network efficiency—almost at the ideal target mark. With the addition of the planned lifts, the average would increase even further to 906.

b. Terrain Network Efficiency

As discussed in Chapter IV, Terrain Network Efficiency refers to the amount of effort required to properly maintain a resort's terrain. From this standpoint, the

most efficient scenario is to have a quantity of terrain that closely meets the target density requirements. As discussed, ASC has a policy to intentionally maintain lower trail densities than industry standards to ensure the higher quality experience expected by its destination guests. Also as discussed in Chapter IV, an effective way to review terrain efficiency is to interpret the density analysis. Under the Upgrade Plan, the overall “Density Index” figure would increase from the existing figure of 54% to 56%. This represents an improvement in efficiency, while still maintaining an excellent, low density, ski experience.



E. UPGRADED GUEST SERVICES FACILITIES, FOOD SERVICE SEATING AND SPACE USE ANALYSIS

1. Guest Services

Snowmass is planning four guest service projects as a part of this MDP—an expansion planned for Sam’s Smokehouse, a remodel and expansion of the High Alpine Restaurant, a change to the Lynn Britt Cabin and the Spider Sabich Picnic/Race Arena, and on-mountain huts capable of housing overnight guests.

A 3,000- to 5,000-square foot addition is planned for Sam’s Smokehouse which will be located on the existing building’s northwest corner. The proposed program for the additional area is not finalized but could include:

1. additional “expedited” table service area as currently exists;
2. formal table service dining, and/or;
3. a club concept with both priority-based reservations and nonexclusive reservations for table service dining.

In an attempt to maximize use of the Sam’s Smokehouse addition, a club concept is one option being considered. This concept will allow both priority-based reservations and nonexclusive reservations for table service.

Providing a reservations system that is equally available to all members of the public is required in accordance with Forest Service Manual direction (FSM 2340.3). Snowmass will work with the Forest Service to further develop this concept and to ensure it complies with relevant Forest Service direction.

The High Alpine Restaurant is planned to be remodeled and refurbished, inside and out, while retaining the building’s structural core. The entrance, food service, restroom facilities, bar, dining room, and exterior deck will be reconfigured and expanded by 1,000 to 3,000 square feet to provide better access, circulation and utility. This additional floor area is planned to be constructed on previously-disturbed ground on the building’s east side. The building’s south elevation will be upgraded with dormers, replacing the existing skylights. All exterior upgrade treatments will comply with guidelines of the Built Environment Image Guide

(BEIG). The food service facilities will be modernized to meet current guest expectations.

The Lynn Britt Cabin and the Spider Sabich Picnic/Race Arena areas will be modified. These existing facilities are situated on private land. Currently the Lynn Britt functions as table service lunch and snow-cat accessed dinner restaurant location. The Spider Sabich facility (which has no indoor seating) serves as an outdoor picnic area for visiting Club events usually associated with a racing event or other group event. These two facilities/functions will be combined, with a new building and/or a remodeled existing one to provide a more versatile and appealing facility to serve both of the existing uses.

Three potential on-mountain huts planned on NFS lands, modeled after the popular 10th Mountain, Braun, Friends, and Summit huts system on NFS lands are planned for Snowmass. These huts are intended to offer guests during winter and summer months, who may not have the proper equipment or sufficient stamina to use the backcountry huts systems, a similar on-mountain, overnight experience. The huts are planned to be simple structures capable of sleeping ten to twenty people with bedding and various supplies provided, such as kitchen facilities for food and beverage preparation and service.

Potential locations for huts include the Dikes, the forested area between Slider and Turkey Trot, and the Elk Camp Saddle (between Sandy Park and the Hanging Valley Wall).

2. Space Use Analysis

A distribution of CCC is utilized to determine guest service capacities and space requirements for guest services at base area portals and on-mountain facilities. The CCC should be distributed between each guest service facility location according to the number of guests that would be utilizing the lifts and terrain associated with each facility. Sufficient guest service space should be provided to accommodate the planned CCC of 13,850 guests per day.

Table VI-8 addresses the Upgrade Plan’s space use needs at for the base area and on-mountain facilities, under the upgraded CCC. The space recommendations are directly related to the distribution of the resort’s capacity to the

various guest service facilities located in the base area and on-mountain. The table also shows recommended size ranges for the facilities, based on industry averages for space use by service function.

As discussed in Chapter IV, some of the base village recommended space is accounted for with third-party facilities in the base village and Village Mall—the private restaurants, ski rental shops, retail stores, and others. It is reasonable to assume that these third-party restaurants and stores will continue to provide skier services.

3. Food Service Seating

Seating and restaurant space recommendations are directly related to the lunchtime capacity. The lunchtime capacity is determined by the distribution of each lift pod's CCC. It is assumed that guests would prefer to dine at the facility closest to the area they are using. To allow for this convenience, it is important to provide restaurant seating to accommodate the lunchtime capacity requirement of the area. Restaurant seating should be supplied per the recommendations in Table VI-9.

As indicated in the table, the majority of the deficiency is related to the Base Village. As with the total guest use space analysis, it is important to note that this analysis only accounts for restaurant seats that are owned and operated by ASC. Since ASC does not own or operate any of the food and beverage facilities in the base village, none of those seats are taken into account—Table VI-9 lists existing total base village seats at zero seats. It is reasonable to assume that this deficiency is currently made up by the numerous private restaurants in the base village. Therefore, extracting out the Base Village (-1,129), the remainder of the Resort Total deficit would be 241 seats (1,370 to 1,129 seats).

Two issues were identified in relation to food service seating: a deficiency of seats at Sam's Smokehouse, and an underutilization of the High Alpine Restaurant. The expansion of Sam's Smokehouse will address the deficiency found there, while the realignment of the High Alpine lift and planned remodel/expansion should increase utilization of the High Alpine Restaurant, as it will become easier for skiers in the Sheer Bliss and Big Burn areas to access the restaurant and the restaurant





Table VI-8. Industry Average Space Use – Upgrade Plan

Service Function	Recommended Range	
	Recommended Low Range	Recommended High Range
Base Village	81,320	104,960
Two Creeks Café	10,253	13,032
Elk Camp Restaurant	26,450	33,650
Sam's Smokehouse	7,660	9,730
Ullrhof Restaurant	23,020	29,270
High Alpine Restaurant	22,790	28,970
Spider Sabich Picnic Area	12,360	15,720
Lynn Britt Cabin	2,840	3,620
Lizard Lodge	3,010	3,830
Up 4 Pizza	6,580	8,360
Total Resort	196,283	251,142

Source: SE Group

Table VI-9. Recommended Restaurant Seating

	Base Village	Two Creeks Café	Elk Camp Rest.	Sam's Smoke-house	Ullrhof Rest.	High Alpine Rest.	Spider Sabich Picnic Area	Lynn Britt Cabin	Lizard Lodge	Up 4 Pizza	Total Resort
Lunchtime Capacity (CCC + other guests)	3,953	873	2,252	1,128	1,960	1,940	1,052	242	257	560	14,217
Average Seat Turnover	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Existing Indoor Seats		81	395	150	230	600	0	70	60	60	1,646
Existing Outdoor Seats		56	150	50	250	150	250	50	50	40	1,046
Existing Total Seats	0	137	545	200	480	750	250	120	110	100	2,692
Required Seats	1,129	249	644	322	560	554	301	69	73	160	4,062
Difference	-1,129	-112	-99	-122	-80	196	-51	51	37	-60	-1,370

Source: SE Group

CCC + other guests is accounting for the non-skiing guests who come to Snowmass with larger groups or families that use the guest service facilities just as the skiing guest does.

Other guests are being calculated at 5 of CCC.

will be upgraded to reflect current standards of access, appearance, and functionality.

Additionally, the planned changes to The Lynn Britt Cabin and the Spider Sabich Picnic/Race Arena areas will increase utilization of those areas, taking pressure off of other restaurants.

F. PLANNED PARKING CAPACITY

No changes are planned for the parking scenario at Snowmass. The existing parking capacity of 10,775 guests, plus the existing public and private transit options, are anticipated to meet the slight increase in demand.

G. PLANNED RESORT OPERATIONS

1. *Ski Patrol/First Aid*

A new patrol duty station will be required as a component of the Burnt Mountain lift. The Ski Patrol facility at top of Sam's Knob is a temporary structure—this facility will be replaced with a permanent structure of appropriate size in a nearby location that meets Ski Patrol needs.

2. *Snowmaking Coverage*

The existing snowmaking system at Snowmass has the ability to make snow on 242 acres of terrain. Previously approved snowmaking coverage expansion will add 118 acres to that amount, bringing the total up to 360 acres, as shown on Figure VI-2. Snowmass plans to add that terrain to the snowmaking system over the next ten to fifteen years. However, during the development of the existing system and Snowmass' effort to increase snowmaking efficiencies, it has become apparent that additional on-mountain water storage will be necessary. As a result, two additional on-mountain storage ponds are planned to be added, as shown on Figure VI-2.

On-mountain storage ponds are vital to snowmaking efficiency as they allow the snowmaking system to take advantage of favorable weather windows. Significantly more water and power are required to make any given quantity of snow under unfavorable weather—generally speaking, warmer and more humid. During cold, low humidity conditions, a larger quantity of quality snow

can be made using comparatively less water and power. However, to take advantage of these weather windows in the late fall, there has to be a sufficient supply of water. If there is not enough water to supply the system during these favorable weather windows, then the system is not able to take advantage of them. For this reason, it is important to have sufficient quantities of water, in proximate locations to where the snow will be made (to avoid lengthy and inefficient pumping). As a result, two additional on-mountain ponds are planned in the locations shown in Figure VI-2.

Additionally, there would be possible repairs to the Sheer Bliss Pond to improve the aesthetics and the pond liner, and to make the pond more wildlife friendly. A project design criteria from the 2015 DN identifies the requirement to complete a pond review prior to the implementation of additional snowmaking. A recent engineering review of the site determined that additional improvements may be necessary.

3. *Grooming*

It is not anticipated that implementation of the previously approved ski trail projects would have a significant impact on grooming operations. The new intermediate trails off of Burnt Mountain would be groomed, likely requiring another snow groomer.

4. *Maintenance Facilities*

No changes are anticipated to the maintenance facilities.

5. *Utilities*

Planned utility upgrades include power lines to the Burnt Mountain summit for the planned Burnt Mountain lift. Additional power line facilities will necessary for the snowmaking and storage pond additions.

6. *Communications*

Cell towers, broadband, data equipment, antennae, towers, and fiber optic line installations are planned to be added in various locations. The current cell phone coverage on Snowmass is sporadic at best and does not meet the needs of visiting guests. Snowmass is currently working with cellular service providers, as well as with local public agencies, to improve coverage. The service providers have preliminarily identified sites at the top



of Elk Camp, High Alpine, and Sam's Knob, as well as some base area locations on private lands, that, when combined, will greatly improve on-mountain cell phone coverage as well as coverage in the valley. Fiber optic communication lines mounted on lift structures or buried in ski trails and mountain roads, along with equipment sheds and electrical utility connections are also planned to enhance cellular, broadband, and data infrastructure on the mountain.

The locations of these facilities are identified on Figure VI-1.

7. Culinary Water and Sewer

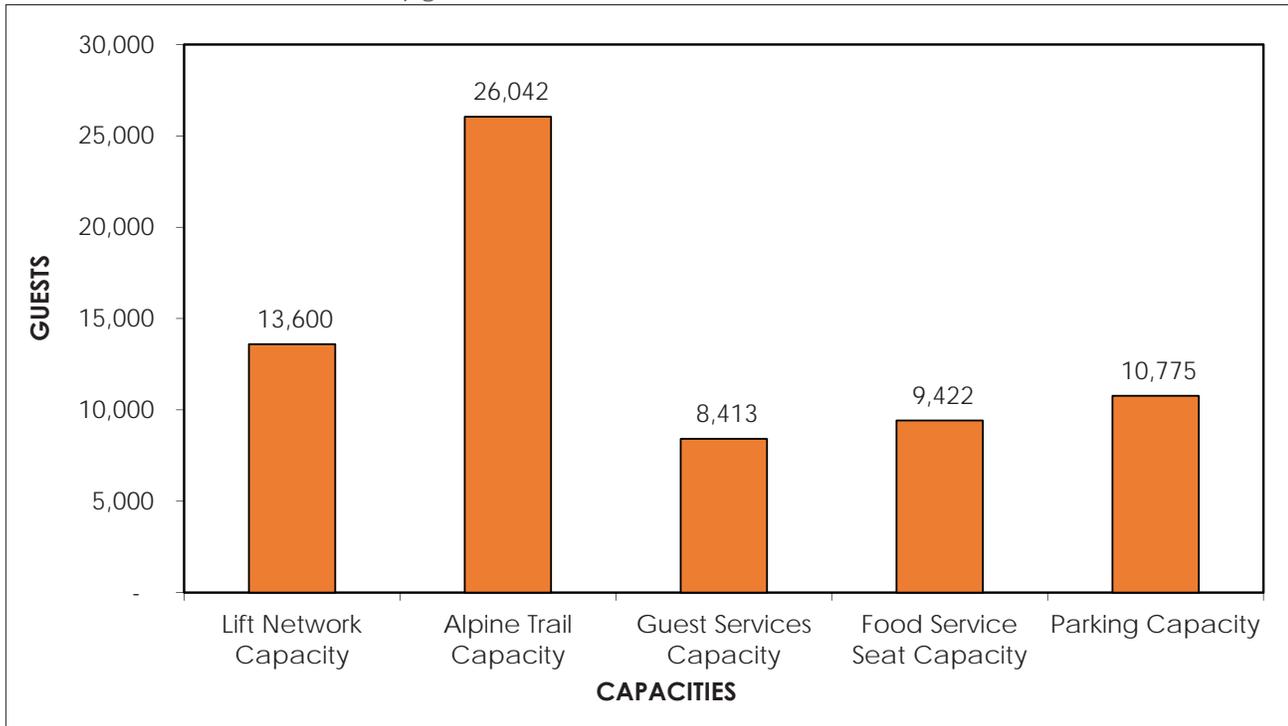
No changes are anticipated to the culinary water or sewer systems.

H. RESORT CAPACITY BALANCE AND LIMITING FACTORS

The overall balance of the existing resort is evaluated by calculating the capacities of the resort's various facilities and comparing those facilities to the resort's CCC, and are shown in Chart VI-2.

The chart indicates that most of Snowmass' capacities will remain fairly well-balanced. The surplus of terrain network capacity is reflected in low skier densities at Snowmass, does not present a particular issue, and is certainly not negative from guests' standpoint. The guest services capacity and food service seating capacity are low, since they do not account for the third-party guest service space and restaurant seats that are available in the base village and Village Mall. When shuttle bus capacity is added to the parking capacity, there is sufficient capacity to access the resort.

Chart VI-2. Resort Balance – Upgrade Plan



Source: SE Group

I. SUMMER OPERATIONS

1. Summer and Multi-Season Offerings – Zones Concept

As discussed in Chapter II, Snowmass identified four characteristics (access, remoteness, naturalness, and infrastructure) to define the summer and multi-season setting and guest experience within different landscapes across the SUP area. The first step in the zone designation process was a careful consideration of the setting and the proximity to infrastructure supporting snow sports. Features such as watersheds, topography, vegetation structure, level of existing disturbance, and existing infrastructure were considered in establishing zone boundaries across the entire SUP area.

The exercise resulted in the creation of 18 areas unique in their location and/or features. The second step of the zone designation process was applying a score for each characteristic on a scale of 1 to 3, with 1 being the most disturbed and 3 being the least disturbed. Figure VI-3, Summer Zone Designations, illustrates the zone designation within the Snowmass SUP area.

Because summer and multi-season uses are continually being developed and activities that do not currently exist may be popular within the next several years, a list of compatible activities is provided for each zone. The intent of the list of compatible activities is to allow for a certain amount of flexibility, since it is impossible to foresee exactly what new activities will be developed over this time. Snowmass will continue to work with the Forest Service to ensure that proposed summer and multi-season activities are suitable for the setting and desired experience within each zone.

a. Zone 1

Setting

The existing setting of Zone 1 is highly developed and disturbed. Within Zone 1, the built environment dominates the landscape. Within the context of the overall SUP area, the following summarizes the setting in Zone 1:

- Road access and roads are prevalent;
- Considerable human activity (people recreation and/or resort operations) occurs within and





proximate to this setting—there is little to no feeling of remoteness;

- Terrain modifications (ground disturbance and vegetation removal) dominate the area; and
- Infrastructure, including chairlifts and buildings, are present.

Two areas were designated as Zone 1—the inner Elk Camp area and the summit of Sam’s Knob.

Desired Experiences

Within Zone 1, guests are expected to encounter a high concentration of other guests. The level of development will reflect the current setting and function of these areas as hubs of activity and portals to other activities across the ski area. Most guests visiting Zone 1 will initially access it from private land via the Elk Camp Gondola (to Elk Camp) and the Village Express (to Sam’s Knob). Within Zone 1, the concepts in the BEIG will be followed to ensure appropriate design guidelines for both landscape architecture and built architecture are followed. Zone 1 abuts Zone 2 on the fringes of developed on-mountain areas. This allows guests to experience a gradual transition between the built environment (Zone 1) and more-natural areas that still contain activities and facilities blending with the area’s natural setting (Zone 2). Zone 1 abuts Zone 3 in one area, along the western side of Sam’s Knob. The distinct change in topography in this area creates a natural buffer between these two zones. Zone 1 will offer interpretive opportunities in a developed setting, with goals of enhancing guests’ understanding of the natural environment as they prepare to venture into less-developed areas. The educational focus will leverage existing partnerships with ACES and other organizations.

Compatible Activities and Facilities

Services and activities in Zone 1 include food and beverage operations, shelter and emergency services, restroom facilities, landscaped areas, and other activities. At Snowmass, Zone 1 serves as the on-mountain hub, from which guests will access surrounding activities and refuel between activities. Typically, guests will first access these areas after riding the Elk Camp Gondola or Village Express; however, guests could also access Zone 1 under their own power from the surrounding trails

network. Elk Camp already hosts several multi-season recreational activities, including live music, snow tubing, a playground, and others.

Activities on NFS lands will include an alpine coaster, challenge courses, canopy tours, singletrack, flow, and gravity/enduro mountain biking trails, a mountain biking skills park, hiking trails, and access pathways to zip lines, challenge courses, fishing and other water-based activities, temporary activities (such as the existing outdoor concerts and kid’s playground), and other natural resource-based recreation activities. The activities will not compromise the existing skiing which occurs in Zone 1 during winter months.

b. Zone 2

Setting

The setting of Zone 2 is less disturbed when compared with Zone 1 and provides more naturalness due to a lesser degree of disturbance from the surrounding ski area. Within the context of the overall SUP area, the following summarizes the setting in Zone 2:

- Road access and roads are present;
- Human activity (people recreating) occurs within and proximate to this setting—there is little feeling of remoteness;
- Terrain modifications (ground disturbance and vegetation removal) are evident in the area, but past disturbance blends with the landscape; and
- Infrastructure, including chairlifts and buildings, are present.

Six areas within the Snowmass SUP area were designated as Zone 2—lower portions of the mountain surrounding the Elk Camp Gondola, Two Creeks lift, Alpine Springs lift, and Sam’s Knob; the High Alpine Restaurant; and the areas around the Elk Camp Chairlift where summer trails exist.

Desired Experiences

Most guests will access Zone 2 from Zone 1, in areas surrounding Elk Camp and Sam’s Knob. In moving between these zones, guests will transition from the built environment to a setting characterized by both developed and passive activities proximate to existing infrastructure and facilities, but still offering a more-natural feel. For

many guests of Snowmass, this may be their first real experience in the mountains, and providing a safe, comfortable environment for exploration is critical to the success of Zone 2 and the overall plan. Zone 2 provides the initial opportunity for guests to learn about and engage in their natural surroundings through hands-on recreational, interpretive, and educational offerings. In addition to hosting activities such as guided hikes, a zip line/canopy tour, and various trails, Zone 2 serves as a buffer between higher levels of development within Zone 1 and on private lands, and the more natural settings of Zones 3 and 4.

Compatible Activities and Facilities

Passive activities within Zone 2 include educational/interpretive opportunities, sightseeing and light hiking, or simply visiting with friends and family. Zone 2 will provide enhanced sightseeing opportunities when compared to Zone 1. Activity offerings include access to zip lines and canopy tours, guided hikes and interpretive opportunities, extended hiking trails, singletrack, flow, and gravity/enduro mountain biking trails, challenge courses, climbing walls, fishing and other water-based activities, and other natural resource-based activities.

As mentioned, the Zone 2 serves two primary purposes—to provide activities in a natural setting in proximity to existing infrastructure and services, and to provide a buffer between Zones 3 and 4 and more developed areas within Zone 1 and on private lands. Thus, areas within Zone 2 serve as transitional zones, encouraging guest exploration into more natural portions of the National Forest in a setting that still feels comfortable for less-experienced Forest users. The setting of Zone 2 and the activities that occur within will offer sufficient challenge for first-time guests, and will prepare others to venture into the less developed areas of Zones 3 and 4.





c. Zone 3

Setting

The setting of Zone 3 contains areas of disturbance from ski trail and chairlift development, but guests can still find a greater degree of remoteness and naturalness depending on their location within the zone. Generally speaking, Zone 3 includes areas where existing chairlifts are present; however, this was not the determining factor for the designation. Within the context of the overall SUP area, the following summarizes the setting in Zone 3:

- Road access and roads are present, but limited to certain areas;
- Human activity (people recreating) can be seen at a distance or is out of site from within this setting—a stronger feeling of remoteness is present;
- The area is moderately disturbed by ski area activity, including vegetation removal from ski trail development and some ground disturbance; and
- Infrastructure, including chairlifts and buildings, are present.

Six areas within the SUP area were designated as Zone 3—areas around the Bull Run and Sandy Park ski trails; upper portions of Alpine Springs; the High Alpine terrain pod; the Big Burn; and the Campground area. Not all of the areas which received a Zone 3 designation are equal in characteristics. For example, Sandy Park is less accessible and includes a higher degree of remoteness when compared to the Big Burn; however, both locations scored in the range to be characterized as Zone 3.

Desired Experiences

The majority of guests will initially experience Zone 3 during a scenic chairlift ride from private lands to Zones 1 and 2. In addition to beautiful views of the Roaring Fork Valley, this “fly over” exposure will allow guests to see diverse vegetation types and topographic features as they make their way up the mountain. On the ground, access to Zone 3 would typically occur after traveling through Zones 1 and 2 from the top lift terminals; however, guests could also access Zone 3 from private lands via the existing trails network. Once in Zone 3, guests will have a variety of opportunities to engage in their surroundings in a more natural and remote environment.

The desired experience in Zone 3 will be achieved through the activities offered there. Guests will enjoy nature hikes with interpretive signage that will provide education on their biological, cultural, and historical surroundings. Guests will hike to locations with views up and down the Roaring Fork Valley. Opportunities for self-guided tours, or dispersed travel also exist. Guests will ride mountain biking trails through forested settings and learn the importance of forest health and stewardship. Mountain bike trails would be less developed cross-country oriented trails and the trail network would be less dense compared to Zone 2. In Zone 3, guests will also ride zip lines and canopy tours over and through the canopy to experience amazing views of the Snowmass area and its natural surroundings.

Zone 3 offers a diverse set of experiences for guests, which will promote the WRNF as a recreationally-, biologically-, and geographically-diverse landscape.

Compatible Activities and Facilities

Activities include singletrack mountain biking trails, scenic chairlift rides, hiking trails, multiple-use trails, canopy tours, and other similar natural resource-based activities. Select activities such as interpretive tours, and canopy tours may occur on a year-round basis. Activities within Zone 3 will not require substantial modifications to natural topography to facilitate construction. Existing ski area development (ski trails and chairlifts) exist to varying degrees within Zone 3, and potential seasonal and year-round facilities and activities will be consistent with the level of existing development for the ski area operation.

d. Zone 4

Setting

The setting of Zone 4 is more remote and provides a great degree of naturalness. Ski area development is limited and, where ski trails are present, larger tree islands prevail. Within the context of the overall SUP area, the following summarizes the setting in Zone 4:

- Little to no road access occurs;
- Human activity (people recreating and/or resort operations) is distant or out of site facilitating a high degree remoteness;

- The area is completely natural or has limited disturbance; and
- Infrastructure, including a chairlift and small buildings, are present.

Four areas within the Snowmass SUP area were designated as Zone 4—the Burnt Mountain Glades, Hanging Valley, Lower Cirque, and Upper Cirque. The Burnt Mountain Glades area includes ski trails and glading, but development is limited and large tree islands are dominant features. The Upper Cirque area includes the Cirque lift, but possesses a strong feeling of remoteness due to the nature of the alpine terrain.

Desired Experiences

In Zone 4, guests will connect with the more natural setting in a relatively undisturbed environment. Dispersed hiking opportunities will allow guests to experience and interpret areas of the National Forest where natural processes are more evident, allowing for educational opportunities that are not available in more developed zones. The setting in Zone 4 will directly affect the guest experience, and maintaining a more remote setting with opportunities for solitude will meet the guests' expectations.

Compatible Activities and Facilities

Activities will promote the surroundings and inform guests of similar environments throughout the National Forest. Activities include slower-moving actions to match the setting and character, which provide even greater opportunities for environmental education and exposure to unique environments. These activities include singletrack hiking trails with signage and interpretation and singletrack mountain biking trails. Activities within Zone 4 will require minimal site modification to maintain the current level of naturalness. In this zone, the low density of guests is expected to maintain the feeling of remoteness.

e. Zone 5

Zone 5 is the least developed of all zones. No areas within the Snowmass SUP area were classified as Zone 5.

Table VI-10 describes the characteristics of each zone, and Table VI-11 provides information about each zone at Snowmass.



Table VI-10. Zone Characteristics

Zone Characteristics	Scores
Access	
Road Access within Area	1
Limited Road Access/Trails	2
No Road Access	3
Remoteness	
Proximate to Human Activity	1
Distant Sight of Human Activity within SUP	2
Out of Sight of Human Activity within SUP	3
Naturalness	
Heavily Disturbed by Ski Area Activity	1
Moderately Disturbed by Ski Area Activity	2
Undisturbed by Ski Area Activity	3
Infrastructure	
Adjacent to 2 or More Ski Area Infrastructure	1
Ski Area Infrastructure in Area	2
Out of Site of Ski Area Infrastructure	3
<i>Minimum Score Possible</i>	4
<i>Maximum Score Possible</i>	12
Zones	
1	4
2	5 to 6
3	7 to 9
4	10 to 11
5	12

Table VI-11. Snowmass Summer Use Zones

Area Boundaries	Score	Appropriate Zone	Area Boundaries	Score	Appropriate Zone
<i>Alpine Springs Summit</i>			<i>Big Burn</i>		
Access	1		Access	2	
Remoteness	2		Remoteness	2	
Naturalness	2		Naturalness	2	
Infrastructure	1		Infrastructure	1	
Total Score	6	Zone 2	Total Score	7	Zone 3
<i>Bull Run</i>			<i>Burnt Mountain</i>		
Access	2		Access	3	
Remoteness	2		Remoteness	3	
Naturalness	2		Naturalness	2	
Infrastructure	2		Infrastructure	2	
Total Score	8	Zone 3	Total Score	10	Zone 4
<i>Campground</i>			<i>Elk Camp – Inner</i>		
Access	1		Access	1	
Remoteness	2		Remoteness	1	
Naturalness	2		Naturalness	1	
Infrastructure	2		Infrastructure	1	
Total Score	7	Zone 3	Total Score	4	Zone 1
<i>Hanging Valley</i>			<i>High Alpine</i>		
Access	3		Access	3	
Remoteness	2		Remoteness	2	
Naturalness	3		Naturalness	2	
Infrastructure	3		Infrastructure	2	
Total Score	11	Zone 4	Total Score	9	Zone 3
<i>Lower Alpine Springs</i>			<i>Lower Burnt Mountain</i>		
Access	1		Access	1	
Remoteness	1		Remoteness	1	
Naturalness	2		Naturalness	2	
Infrastructure	2		Infrastructure	2	
Total Score	6	Zone 2	Total Score	9	Zone 2
<i>Lower Cirque</i>			<i>Lower Elk Camp</i>		
Access	2		Access	1	
Remoteness	2		Remoteness	1	
Naturalness	3		Naturalness	1	
Infrastructure	3		Infrastructure	2	
Total Score	10	Zone 4	Total Score	5	Zone 2
<i>Sam's Knob</i>			<i>Sam's Knob Summit</i>		
Access	2		Access	1	
Remoteness	1		Remoteness	1	
Naturalness	1		Naturalness	1	
Infrastructure	1		Infrastructure	1	
Total Score	5	Zone 2	Total Score	4	Zone 1
<i>Sandy Park</i>			<i>Upper Alpine Springs</i>		
Access	2		Access	2	
Remoteness	2		Remoteness	2	
Naturalness	2		Naturalness	2	
Infrastructure	3		Infrastructure	2	
Total Score	9	Zone 3	Total Score	8	Zone 3
<i>Upper Cirque</i>			<i>Upper Elk Camp</i>		
Access	3		Access	1	
Remoteness	3		Remoteness	1	
Naturalness	2		Naturalness	2	
Infrastructure	2		Infrastructure	2	
Total Score	10	Zone 4	Total Score	6	Zone 2



2. Summer and Multi-Season Activities and Facilities

The available statewide guest survey results and statistics provide insight into the development philosophy and the target market ASC strives to reach. With the higher mean age during the summer (approximately 42 years of age), ASC caters to a slightly different demographic than in the winter. As a focus, summer activities provided by ASC are planned include activities for the 45- to 54-year old range, while providing opportunities for this age range's children as well.

Summer visitation in the Snowmass area has always existed, but only in the past twenty to thirty years have ASC, Town of Snowmass Village, and the City of Aspen collaborated to offer wide range of summertime recreation. As those opportunities developed, and as access to higher mountain elevations became easier, so did the realization for continued opportunities and growth as a summer destination that would complement the already successful winter resort economy.

Details on planned upgrades are presented in this section, but specific project locations and associated maps will be developed during site-specific analysis as part of the NEPA process. Phase 1 summer and multi-season projects are anticipated to be implemented, dependent upon NEPA analysis and approval, between 2015 and 2020. Additional summer and multi-season projects may be considered for implementation beyond 2020, in accordance with the setting and desired experience of each zone, as previously described. Phase 1 projects include the following:

Alpine Coaster

An alpine coaster is planned for the Elk Camp area in a forested setting between Elk Camp Meadows and the Sandy Park trail. The gravity-driven coaster will use bobsled-like cars on tubular rail tracks. This facility will require timber removal along the coaster's corridor and will allow the rider to experience the natural aspects of the terrain while being able to control their speed with a rider-controlled braking system. The planned location for the coaster will allow for both summer and winter operation. The coaster includes an uphill track which will tow riders to the top. Riders will descend along a downhill track back to the Elk Camp area.

Zip Line/Canopy Tour

A zip line/canopy tour is planned to start in the Elk Camp Meadows area and descend the mountain in the general vicinity of the Lower Funnel ski trail and the Elk Camp Gondola mid-station. Users would be clipped into gear—consisting of a harness, lanyards, carabineers, and zip pulleys on heavy-duty steel cables—and would glide from one elevated platform to the next. The tour will provide guests with an active opportunity to engage and learn about the ecosystems of the WRNF as they travel through the forest canopy.

The tour will multiple zip lines of varying lengths. Platforms would be located between zip lines, and constructed on larger trees and/or on separate poles. Users would travel at various speeds, remaining below the top of the tree canopy the majority of the time. Several of the platforms are planned to be themed to educate participants about the surrounding environment. Along with the inherent adventure and scenery offered by the zip line/canopy tour, interpretation of the surrounding natural environment will play a significant role in attracting users to this activity. A small shelter with restrooms, a water station, and seating area is planned on the Slider ski trail near the Elk Camp mountain access road (refer to Figure VI-1).

Climbing Wall

A climbing wall is planned to be located adjacent to the Elk Camp Restaurant complex. The climbing wall will provide a challenging experience for those new to the sport and is expected to be especially popular with families. It will help develop skills necessary to participate in bouldering and rock climbing in more natural environments.

Challenge Course

A challenge course is planned for the forested area uphill of the magic carpet in Elk Camp Meadows. The intent of this course is to provide physical recreation and engagement in a natural setting, offering a challenging personal development and team-building activity with both high and low elements. The structure would be supported by trees, wooden utility poles, or steel supports. The environment surrounding Elk Camp provides an appealing venue. Outcomes achieved by challenge courses include exploring the fundamentals

of trust, craftsmanship, and coaching, intertwined with group interaction, problem solving, and leadership. A renewed knowledge and respect for the natural environment is another expected outcome of the challenge course.

Mountain Biking Trails

In 2012 Gravity Logic developed a mountain biking MDP for Snowmass. Four of the trails identified in the Gravity Logic MDP (Valhalla, Viking, Vapor, and portions of Verde) have already been constructed and are among the most popular mountain biking trails at Snowmass. An additional 20 miles of mountain biking trails are planned in order to build upon the successes of the existing Gravity Logic trails, and to address the deficiency in gravity trails identified in Chapter IV. Of these 20 miles, approximately 10 miles are to be implemented during Phase 1. Trails would be located mostly in the Elk Camp and lower Alpine Springs areas, as shown in the figure in Appendix B. It is important to note that the planned trails identified in this figure are conceptual, and are subject to change during site-specific planning and layout.

The majority of planned trails will cater to intermediate and advanced riders. As discussed in Section I.4 in Chapter IV, most existing trails at Snowmass are XC trails, while a growing percentage of Snowmass' guests are gravity/enduro riders. As mentioned, in order to address this deficiency, a primary goal of the Gravity Logic MDP is to provide additional gravity terrain that will accommodate this growing segment of the market. The progression in mountain biking trail construction has become increasingly noticeable over the past several years. In order to continue to be a leader in the market, Snowmass desires to provide additional diversity and cutting-edge design in its mountain biking trails network. Additionally, two skills centers are planned—one in the Elk Camp Meadows area (which is partially complete), and one to the east of the Elk Camp Gondola. These skills centers will provide a platform for first-time and beginner-level riders to learn the skills and develop the confidence necessary to progress in the sport.

Concentrating mountain biking trails in the Elk Camp and lower Alpine Springs areas will allow Snowmass to utilize existing infrastructure (e.g., summer lift





operations) and will maintain the less-developed experience found in other portions of the SUP, in accordance with the summer zones as described. Concentrating use also allows for numerous loop and descent options, which will help to provide the diversity currently being sought by guests.

Generally, Zones 1 and 2 will contain denser networks of trails, and will include cross-country singletrack, flow, and gravity/enduro trails. The higher levels of development and activity in these zones makes them suitable for this type of trail development. Zone 3 will contain singletrack trails, which are less visible, produce less impact, and provide the experience suitable for this zone. No mountain biking trails are currently planned in Zone 4.

Overall, these upgrades will increase opportunities for guests to explore NFS lands within the Snowmass SUP area and will promote the development of new riders. Interpretive signage will be located along planned trails to promote stewardship of surrounding natural resources.

As described in Chapter V, the Vapor Trail reroute and Meadows Skills Center were both previously approved in the 2014 DM. These two projects are included in this MDP as part of the overall summer upgrade plan.

Lastly, Pitkin County has recently released its Draft 2015 Upper Roaring Fork Valley Trails (URVTP) Plan. As of the date of this MDP, the URVTP has not been reviewed or approved by either Pitkin County or the Town of Snowmass Village. Some trails or components of the URVTP are proposed within the Snowmass SUP boundary; others are proposed on private lands in the vicinity of Snowmass.

ASC, in conjunction with local governments and the Forest Service, will review and mutually consider trails presently proposed in the draft URVTP for possible inclusion in ASC's Mountain Biking Trail plan in the future, recognizing that such additions or alterations, if acceptable and pursued by ASC would require amendment(s) of this plan.

Mountain Boarding

Mountain Boarding currently takes place on mountain service roads only. It is planned to include mountain boarding activities as part of mountain bike skills park.

Hiking Trails

Additional hiking/multi-use trails are planned throughout the SUP area, particularly those that connect across the east and west sides of Snowmass. Specifically, one trail would be located primarily above treeline, meandering above the Cirque to give visitors a true high alpine experience. Other shorter hiking trails are planned to provide access to viewpoints and scenic destinations such as the Burnt Mountain Summit and the Sandy Park Saddle via short hikes from lifts. These trails would serve less active or physically-able visitors wishing to experience scenic vistas.

Multi-Purpose Gathering Sites

Several special event and gathering sites are planned in and around the Elk Camp area. These will provide areas for larger groups of visitors to congregate and enjoy developed activities within a scenic natural setting.

There are three gathering sites planned—two in Elk Camp Meadows near Rayburn's Pond, and one at the top of the Elk Camp chairlift. The sites will accommodate from 50 to 200 participants and will require grading and surface treatment (gravel/flagstone) to "formalize" the locations. No permanent seating/podiums are planned but portable chairs/podiums will be placed on the prepared surfaces when needed.

Activities would take place within each zone, as follows:

Zone 1

- Scenic chairlift rides utilizing the Elk Camp gondola and chairlift
- Challenge course in Elk Camp Meadows
- Alpine coaster
- Singletrack, flow, and gravity/enduro mountain biking trails and hiking trails
- Climbing wall
- Children's play area
- Special event/gathering sites
- Mountain huts, shelters, and overnight camping activities

Zone 2

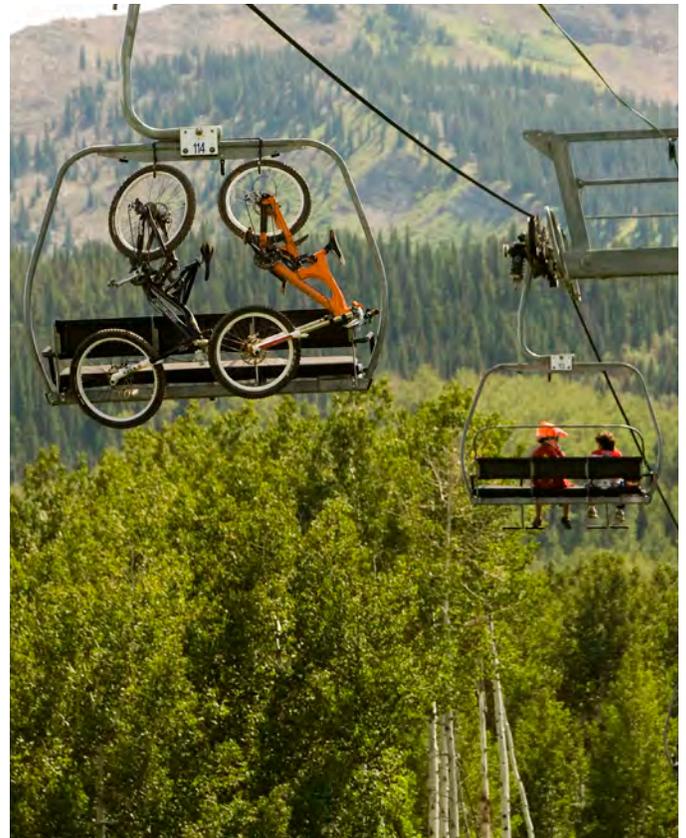
- Scenic chairlift rides utilizing the Elk Camp gondola and chairlift
- Challenge course in Elk Camp Meadows
- Canopy tour extending down mountain below Elk Camp
- Singletrack, flow, and gravity/enduro mountain biking trails and hiking trails
- Special event/gathering sites
- Mountain huts, shelters, and overnight camping activities

Zone 3

- Scenic chairlift rides utilizing the Elk Camp chairlift
- Singletrack mountain biking and hiking trails
- Mountain huts, shelters, and overnight camping activities

Zone 4

- Singletrack hiking trails





APPENDICES

APPENDIX A.
SNOWMASS CREEK INSTREAM FLOWS

APPENDIX B.
SNOWMASS MOUNTAIN BIKING PLAN

APPENDIX C.
SNOWMASS FOREST HEALTH PROJECTS – PROPOSED TREATMENT MAP

APPENDIX D.
FOREST HEALTH PRESCRIPTIONS

APPENDIX E.
BOUNDARY MANAGEMENT PLAN



This page intentionally left blank.

APPENDIX A. SNOWMASS CREEK INSTREAM FLOWS

Instream flows are non-consumptive, in-channel water rights owned by the Colorado Water Conservation Board (CWCB) and administered within the State of Colorado water right priority system with the purpose of preserving or improving the natural environment to a reasonable degree. Instream flows for Snowmass Creek were decreed in Water Court Case No. W-2943 and apply to various reaches of the Creek, from the outlet of Snowmass Lake to its confluence with the Roaring Fork River. The instream flow reach from where snowmaking water is diverted spans from the confluence of Snowmass Creek with West Snowmass Creek down to its confluence with Capitol Creek. In summary, instream flows for the period October 16 through March 31 are determined each year based upon a flow trigger defined as the average daily streamflow observed during the October 11 to October 16 period, and values shown in Table A-1. For example, if the average streamflow in this reach of Snowmass Creek from October 11 to October 15 is calculated to be 28 cfs, then the instream flow for the period October 16 through October 31 is 12 cfs which is reduced to 10 cfs for the November 1 to December 14 period.

Case No. W-2943 also states that daily administration of instream flow for this particular reach of Snowmass Creek includes “a certain degree of flexibility between November 15 and December 21 of each year.” According to the Decree, administration of instream flows during this time is based on a 24 hour moving average. In addition, diversions junior to the CWCB instream flow right are allowed to reduce Snowmass Creek flows below the corresponding multi-stage flow by up to 2 cfs, provided that:

- Such reduction does not last more than six hours in any 24-hour period;
- At no time such junior diversions cause streamflows to fall below 7 cfs; and
- At no time such junior diversions cause the 24-hour moving average to fall below the corresponding multi-stage instream flow.

Following improvements constructed in 2011, Ziegler Reservoir became the primary water storage facility for the SWSD and for the Snowmass snowmaking system. Prior to the 2011 improvements to Ziegler Reservoir, snowmaking water was drawn directly from Snowmass Creek at varying rates, up to 6 cfs as needed by snowmaking operations and as allowed by Snowmass Creek instream flows. While Ziegler Reservoir still requires replenishment from Snowmass Creek during the snowmaking season, most of the snowmaking water is now drawn from Snowmass Creek into storage during periods of maximum streamflow availability, therefore reducing demand upon the stream system during low flow time periods. Because water needed for snowmaking operations is drawn from Ziegler Reservoir and/or from one or more of the on-mountain storage ponds (and not directly from the Snowmass Creek) impacts to the CWCB decreed instream flow water right on Snowmass Creek are minimized or avoided.

It is important to note that the CWCB protects its instream flow water rights by enforcing terms and conditions contained in decrees, stipulations and agreements. Instream flows are monitored to ensure that CWCB water rights are being met and administered according to the State’s prior appropriation system. Snowmass Creek streamflows below Ziegler Reservoir (i.e., downstream of Snowmass’ snowmaking diversions) are continuously monitored by the Snowmass Creek Gaging Station, operated by the Colorado Division of Water Resources (Station ID: SNOCRECO). This stream gaging station records streamflow information at 15-minute intervals. If streamflows fall below the wintertime instream flow requirements, the CWCB can place an administrative call on Snowmass Creek thereby curtailing upstream junior water rights, including snowmaking diversions into Ziegler Reservoir.



Table A-1. Snowmass Creek Multi-Stage Wintertime Instream Flow Requirements

Instream Flow Trigger Average Daily Flow from 10/11 to 10/15	Percentile Water Year	Predicted Recurrence Interval	Multi-Stage Winter Instream Flow Time Period	Minimum Instream Flow
≥ 29.0 cfs	50th Percentile or greater	1 in 2 years	10/16–11/30	12 cfs
			12/1–3/30	10 cfs
27.0 cfs ≤ Avg Flow < 29.0 cfs	25th Percentile to 50th Percentile	1 in 4 years to 1 in 2 years	10/16–10/31	12 cfs
			11/1–12/14	10 cfs
			12/15–12/31	9 cfs
			1/1–3/31	10 cfs
19.0 cfs ≤ Avg Flow < 27.0 cfs	10th Percentile to 25th Percentile	1 in 10 years to 1 in 4 years	10/16–10/31	12 cfs
			11/1–11/14	10 cfs
			11/15–12/21	9 cfs
			12/22–12/28	8.5 cfs
			12/29–12/31	8 cfs
< 19.0 cfs	Less than 10th Percentile	1 in 10 years or greater	10/16–10/21	9 cfs
			10/22–10/31	8 cfs
			11/1–12/31	7 cfs
			1/1–3/31	8 cfs

Source: Water Court Case No. W-2943

**APPENDIX B.
SNOWMASS MOUNTAIN BIKING PLAN**



Snowmass Mountain Biking Master Development Plan



LEGEND

Proposed:

- Easier Mountain Biking Trail
- More Difficult Mountain Biking Trail
- Most Difficult Mountain Biking Trail
- Hiking Trail Reroute
- Dirt Jumps/Skills Center

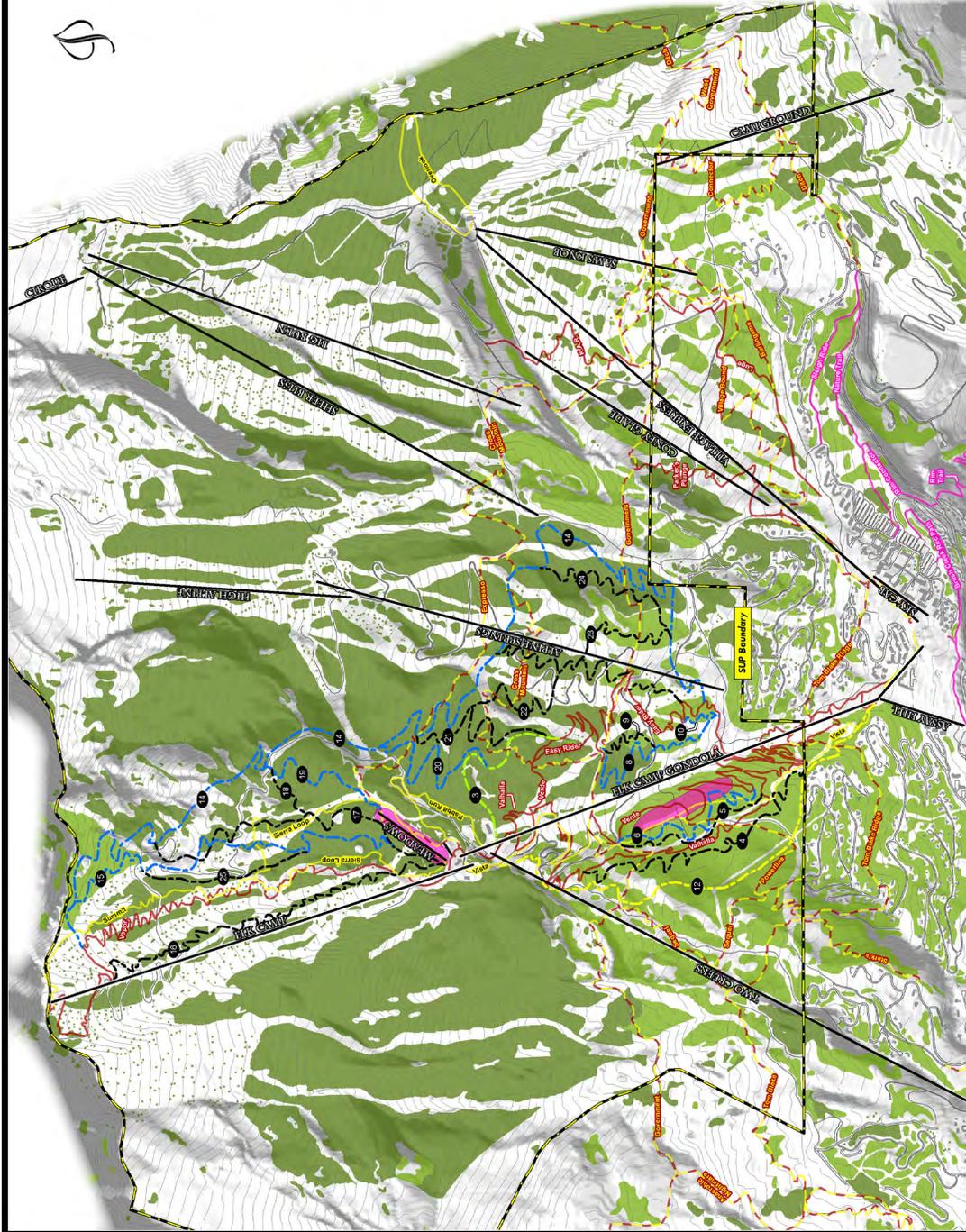
Existing:

- Downhill Trail (MTB)
- Hiking Trail
- Multi-Use Trail
- Paved/Other Trail
- Lift
- Road
- Building

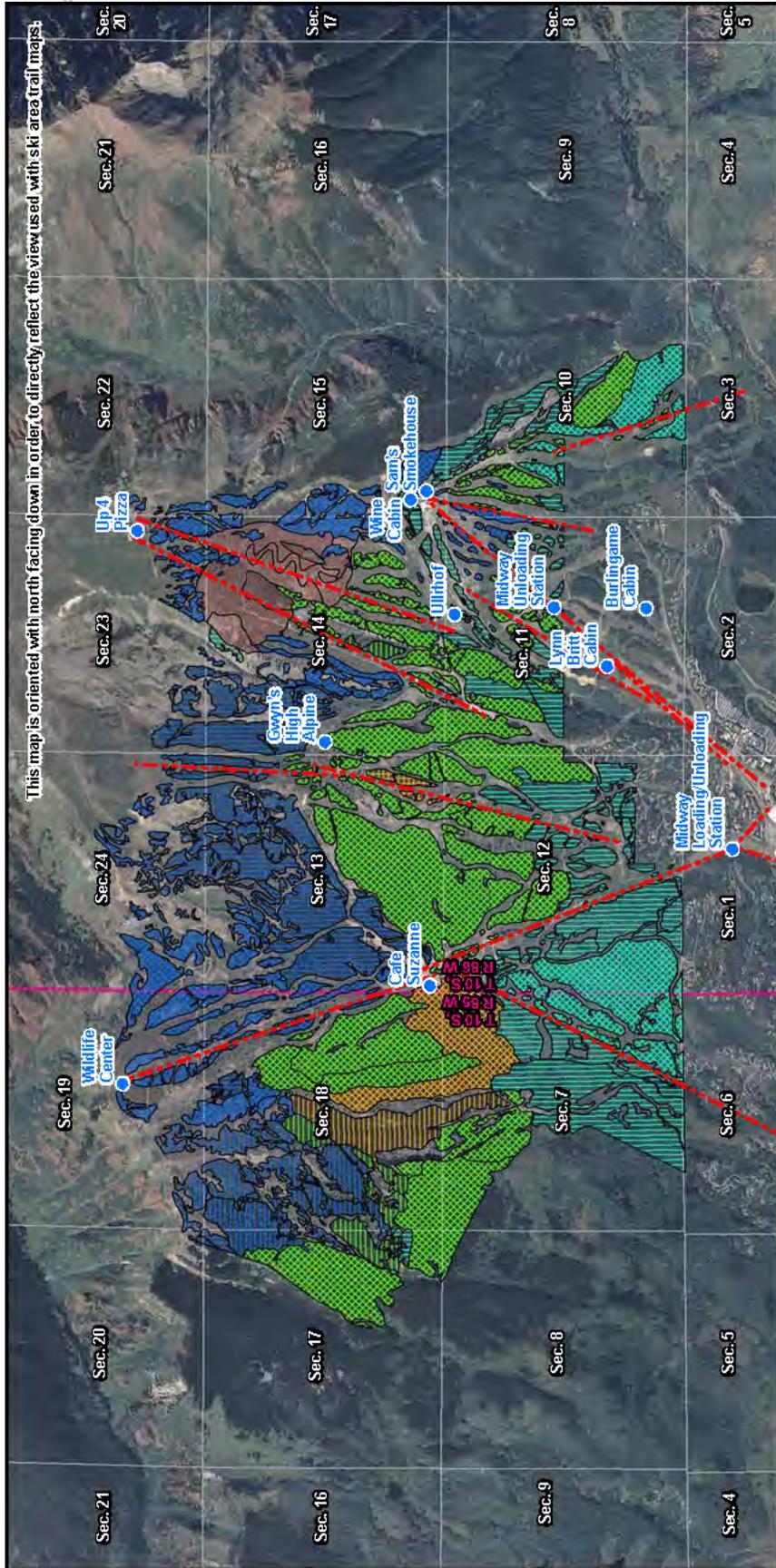


Figure prepared by:
SE GROUP

Plan prepared by:
Gravity Logic



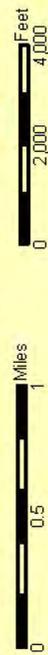
**APPENDIX C.
SNOWMASS FOREST HEALTH PROJECTS – PROPOSED TREATMENT MAP**



This map is oriented with north facing down in order to directly reflect the view used with ski area trail maps.

Proposed Treatment Units - Snowmass Ski Area Aspen Ranger District, White River National Forest

- Stand Type 0: All Stands Where Required**
 - Hazard Tree Removal (Partial Cut)
 - Plant Seedlings or Transplants
- Stand Type 2: Pure Lodgepole Pine (90%+) and Mortality >50%**
 - Small Clearcuts within a Thinning (Partial Cut)
 - Shelterwood Cutting (Partial Cut)
 - Salvage Cutting (Partial Cut)
- Stand Type 4: Mixed Lodgepole Pine (50-70%) and Other Species**
 - Partial Cut (Remove all Lodgepole Pine)
 - Salvage Cut (Partial Cut)
- Stand Type 5: Mixed Lodgepole Pine (<50%) and Other Species**
 - Partial Cut (Remove all Lodgepole Pine)
 - Small Clearcuts within a Thinning (Partial Cut)
 - Salvage Cutting (Partial Cut)
- Stand Type 7: Pure Aspen (90%+) and Other Tree Species**
 - Partial Cut (Remove all Conifer)
 - Salvage Cut (Partial Cut)



"This product is reproduced from geospatial information prepared by the U.S. Department of Agriculture, Forest Service, GIS data and product accuracy may vary. They may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation, incomplete while being created or revised, etc. Using GIS products for purposes other than those for which they were created may yield inaccurate misleading results. This information was released on 16 May 2011. The Forest Service reserves the right to correct, update, modify, or replace GIS products based on new inventories, new or revised information, and (if necessary) in conjunction with other federal, state, or local public agencies or the public in general as required by policy or regulation. Previous recipients of these products may not be notified unless required by policy or regulation."

For more information, contact the White River National Forest, Aspen Ranger District at 970-925-3445.

Produced By: JG Management Systems, Inc.
For More Information Contact: Tim Sansom, Natural Resources Manager
Phone #: 970.254.1354
e-mail: timsansom@jgmsinc.com

1 inch = 4,000 feet

APPENDIX D. FOREST HEALTH PRESCRIPTIONS

The following is a complete list of silvicultural treatment options, with some variation, used in the Keystone, Vail, Beaver Creek, and Aspen area vegetation EAs. The “Do Nothing” option is always a consideration.

STAND 0: ALL STANDS WHERE REQUIRED (See Option description)

RX OPTION 0.1 – Insecticide or Pheromone

Application and Treating Infested Trees (Preventive Action): This treatment maintains the stand through the current insect outbreak. If the stand succumbs to bark beetles another option should be used.

Treat high value trees by applying an approved insecticide or by applying an approved anti-aggregative pheromone prior to beetle emergence each year until the threat of infestation is over. In high value areas treat beetle-infested trees by felling and peeling, burning, chipping or removing the trees prior to beetle emergence.

RX OPTION 0.2 – Hazard Tree Removal (Partial Cut):

This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.

Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.

RX OPTION 0.3 – Plant seedlings or transplants

(Regeneration): This option establishes healthy young trees to maintain the forested cover.

Plant trees in under stocked portions of the Big Burn where protection from skier or rider damage can be provided, as well as provide shelter from the harsh elements. Planting stock can either be nursery grown or transplanted from adjoining areas with sufficient seedling and sapling stock. Protection can either be provided by planting down-hill from existing barriers and shelter such as large trees, or be provided by fencing or other deterrents.

RX OPTION 0.4 – Final Shelterwood Harvest (if needed) and Pre-commercial Thinning (Partial Cut):

Objective is to protect, and release, young, well-stocked stands of advanced regeneration.

Where there is an overstory, treat the patch as the final removal cut of a 2-step shelterwood harvest. Remove all lodgepole pine 7” dbh and greater while protecting the advanced regeneration. Retain all other species unless there is a reason to remove them. Protect regeneration with fencing, signing, barriers, etc. Where there is no overstory, or once the overstory is removed, follow the treatment as outlined below.

After harvest cut (and remove, scatter, pile and burn, chip, or treat in some way to reduce fuel hazard after cutting) understory trees that have been damaged by harvest operations, that are infested with beetles or mistletoe, or that have less than 25% crown ratio.

After the Overstory Removal harvest, if the understory would still be too dense to meet objectives after the damaged trees TSI thinning, than a stocking reduction thinning should be incorporated into the TSI thinning. In this case, while removing damaged and diseased trees, reduce the stocking of the crop (best) trees to approximately a 12x12 foot spacing (300 trees per acre). Uniform spacing is not as important as allowing each tree space for growth, so larger trees should be given more space than smaller trees. Do this by allowing approximately 4 to 6 feet spacing between crowns for the larger trees, using the 12x12 foot spacing as a lower limit, default spacing for smaller trees.

RX OPTION 0.5 – Salvage/Sanitation and Improvement cutting (Fuel Break): Objective is to create a fuel break along the edge of the resort.

Harvest the stand by removing beetle-infested or dead PICO (or other species) 7” dbh or greater, up to 25% of the basal area of the stand. In open areas, instead of a 25% removal target, remove enough trees so that there is 15 to 20 foot spacing between the crowns of the residual trees if this results in less than a 25% removal.

In areas where the majority of the stand is dead or beetle-infested lodgepole pine, clearcut (with reserves) the stand by removing all the lodgepole pine, live and dead, while retaining other species as long as there is a minimum of 15 to 20 foot spacing between residual trees or groups of trees. In areas that are clearcut, regeneration is desired and site preparation will be done. These areas will require thinning once regeneration is established to maintain the fuel break objective.



In addition, remove PICO less than 7.0" in diameter that have been attacked by or are infested with mountain pine beetles, or that are infested with mistletoe, or that have a crown ratio of less than 25%. In some areas, where PICO is over 25% of the stand, some PICO will remain; in these areas the PICO not removed will eventually be killed by mountain pine beetles and will probably end up as downfall in 10 to 15 years. Objective is to eventually have a 350 to 400 foot wide corridor of open stands of healthy trees spaced about 15 to 20 feet between crowns. Perform the next entry to maintain the fuel break, where needed, in 5 to 40 years.

STAND 1: PURE LODGEPOLE PINE (90% +) and MORTALITY < 50%

RX OPTION 1.1 – Partial Cut (Thinning): This thinning maintains the stand through the current insect outbreak. If the stand succumbs to mountain pine beetles before multiple age classes can be regenerated, another option should be used.

Thin the stand, removing approximately 20 to 30% of the basal area to a residual minimum of 50 square feet per acre. Target basal area is 60 to 80 square feet per acre to reduce the stand's susceptibility to bark beetle infestation. Lodgepole pine and subalpine fir are the preferred species for removal, in that order. Retain Engelmann spruce and aspen. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. If needed, protect advanced regeneration from skier damage.

RX OPTION 1.2 – Shelterwood Cutting (Partial Cut): Option 1.2 is an even-aged management option. The treatment encourages an initial flush of regeneration and protects it with the residual stand until the regeneration is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB for removal. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10 to 15 years.

RX OPTION 1.3 – Shelterwood Cutting, Final Removal (Overstory Removal): This is an even-aged management option. The treatment removes the larger trees (the Overstory) that share the site with a healthy advanced regeneration understory.

Treat the unit as the final removal cut of a 2-step shelterwood harvest. Remove all lodgepole pine 7" dbh and greater while protecting the advanced regeneration. Retain all other species. Protect regeneration with fencing, signing, barriers, etc.

RX OPTION 1.4 – Salvage Cutting (Partial Cut): This is an even-aged management option designed to provide ski run separation and protect regeneration in situations where high levels of MPB mortality exist.

Salvage all dead lodgepole pine, removing no more than 75% of the basal area. Retain all live lodgepole pine and other species, if present, to maintain the functionality of the stand for ski run separation as much as possible. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

RX OPTION 1.5 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management. If the stand succumbs to mountain pine beetles before multiple age classes can be regenerated, options 1.4 or 1.6 should be used.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 1.6 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain non-lodgepole pine trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

STAND 2: PURE LODGEPOLE PINE (90%+) and MORTALITY > 50%

RX OPTION 2.1 – Partial Cut (Thinning): This thinning maintains the stand through the current insect outbreak. If the stand succumbs to mountain pine beetles before multiple age classes can be regenerated, another option should be used.

Thin the stand, removing approximately 20 to 30% of the basal area to a residual minimum of 50 square feet per acre. Target basal area is 60 to 80 square feet per acre to reduce the stand's susceptibility to bark beetle infestation. Lodgepole pine and subalpine fir are the preferred species for removal, in that order. Retain Engelmann spruce and aspen. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. If needed, protect advanced regeneration from skier damage.

RX OPTION 2.2 – Shelterwood Cutting (Partial Cut): Option 2.2 is an even-aged management option. The treatment encourages an initial flush of regeneration and protects it with the residual stand until the regeneration is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB for removal. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10 to 15 years.

RX OPTION 2.3 – Salvage Cutting (Partial Cut): This is an even-aged management option designed to provide

ski run separation and protect regeneration in situations where high levels of MPB mortality exist.

Salvage all dead lodgepole pine, removing no more than 75% of the basal area. Retain all live lodgepole pine and other species, if present, to maintain the functionality of the stand for ski run separation as much as possible. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

RX OPTION 2.4 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management. If the stand succumbs to mountain pine beetles before multiple age classes can be regenerated, options 2.3 or 2.5 should be used.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 2.5 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain non-lodgepole pine trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.



STAND 3: MIXED LODGEPOLE PINE (70-90%) and OTHER SPECIES

RX OPTION 3.1 – Partial Cut (Remove all lodgepole pine): Option 3.1 creates a two-aged stand that can be moved toward uneven-aged management in the future.

Harvest all lodgepole pine in the stand (up to 35% of the basal area) and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

RX OPTION 3.2 – Shelterwood Cutting (Partial Cut): Option 3.2 is an even-aged management option designed to encourage an initial flush of regeneration, and protect it with the residual stand until it is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB for removal. Retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10 to 15 years.

RX OPTION 3.3 – Salvage Cutting (Partial Cut): This is an even-aged management option designed to provide ski run separation and protect regeneration in situations where high levels of MPB mortality exist.

Salvage all dead lodgepole pine, removing no more than 75% of the basal area. Retain all live lodgepole pine and other species, if present, to maintain the functionality of the stand for ski run separation as much as possible. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

RX OPTION 3.4 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand

to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 3.5 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain any live trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

STAND 4: MIXED LODGEPOLE PINE (50-70%) and OTHER SPECIES

RX OPTION 4.1 – Partial Cut (Thinning): This thinning maintains the stand through the current insect outbreak. If the stand succumbs to the mountain pine beetle before multiple age classes can be regenerated, another option should be used.

Thin the stand, removing approximately 20 to 30% of the basal area to a residual minimum of 50 square feet per acre. Lodgepole pine and subalpine fir are the preferred species for removal, in that order. Retain Engelmann spruce and aspen. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. If needed, protect advanced regeneration from skier damage.

RX OPTION 4.2 – Shelterwood Cutting (Partial Cut): This option is an even-aged management option designed to encourage regeneration with spruce, and protect it with the residual stand until it is less susceptible to ski damage.

Harvest up to 25% of the spruce basal area in a first step of a 3 to 4 step shelterwood system. Scarify the ground to expose up to 25% mineral soil. Lop and scatter tops to provide protection for regeneration. Perform next step (cutting) in 20 years.

RX OPTION 4.3 – Shelterwood Cutting (Partial Cut):

This is an even-aged management option designed to encourage an initial flush of regeneration, and protect it with the residual stand until it is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB, and trees with less than 30% live crown ratios, for removal. Retain other trees. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10 to 15 years.

RX OPTION 4.4 – Salvage Cutting (Partial Cut):

Option 4.4 salvages dead and infested lodgepole pine, and maintains the stand through the current insect outbreak.

Harvest all the dead or beetle infested trees in the stand, up to 35% (in stands of recently killed trees) to 50% (stands of mostly older dead trees) of the basal area of the stand, and retain all other trees. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. Protect regeneration with fencing, signing, barriers, etc.

RX OPTION 4.5 – Partial Cut (Remove all lodgepole pine): Option 4.5 creates a two-aged stand that can be moved toward uneven-aged management in future entries.

Harvest all the lodgepole pine in the stand and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

RX OPTION 4.6 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through

the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 4.7 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain any live trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

STAND 5: MIXED LODGEPOLE PINE (< 50%) and OTHER SPECIES

RX OPTION 5.1 – Partial Cut (Remove all aspen):

Option 5.1 converts the aspen stand to a conifer stand. The resulting conifer stand will probably be an open glade.

Harvest all aspen in the stand and retain healthy conifers. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

RX OPTION 5.2 – Salvage Cutting (Partial Cut):

Option 5.2 salvages dead and infested lodgepole pine, and maintains the stand through the current insect outbreak.



Harvest all the dead or beetle infested trees in the stand, up to 35% (in stands of recently killed trees) to 50% (stands of mostly older dead trees) of the basal area of the stand, and retain all other trees. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. Protect regeneration with fencing, signing, barriers, etc.

RX OPTION 5.3 – Partial Cut (Remove all lodgepole pine): Option 5.3 creates a two-aged stand that can be moved toward uneven-aged management in the future.

Harvest all lodgepole pine in the stand (up to 35% of the basal area) and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

RX OPTION 5.4 – Selection Cutting (Partial Cut): This option regenerates the stand with spruce in phases and maintains the stand's uneven-aged character.

Harvest up to 20% of the stand in 1/4 to 2 acre groups. Scarify the ground to expose up to 25% mineral soil. Lop and scatter slash to protect regeneration. Perform the next cutting in 15 to 20 years.

RX OPTION 5.5 – Partial Cut (Thinning): This thinning maintains the stand through the current insect outbreak.

Thin the stand, removing approximately 20 to 30% of the live basal area to a residual minimum of 50 square feet per acre. Lodgepole pine and subalpine fir are the preferred species for removal, in that order. Retain Engelmann spruce and aspen. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. Protect regeneration with methods such as fencing, signing or barriers as needed.

RX OPTION 5.6 – Shelterwood Cutting (Partial Cut): This option is an even-aged management option designed to encourage regeneration with spruce, and protect it with the residual stand until it is less susceptible to ski damage.

Harvest up to 25% of the spruce basal area in a first step of a 3 to 4 step shelterwood system. Scarify the ground to expose up to 25% mineral soil. Lop and scatter tops to provide protection for regeneration. Perform next step (cutting) in 20 years.

RX OPTION 5.7 – Shelterwood Cutting (Partial Cut): This is an even-aged management option designed to encourage an initial flush of regeneration, and protect it with the residual stand until it is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB, and trees with less than 30% live crown ratios, for removal. Retain other trees. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10 to 15 years.

RX OPTION 5.8 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management. This option would be used where the lodgepole pine is in groups within the stand or tree island.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 5.9 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain any live trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and

scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

STAND 6: PURE SPRUCE (90%+) AND MIXED SPRUCE

RX OPTION 6.1 – Partial Cut (Remove all lodgepole pine): Option 6.1 creates a two-aged stand that can be moved toward uneven-aged management in the future.

Harvest all lodgepole pine in the stand (up to 35% of the basal area) and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

RX OPTION 6.2 – Selection Cutting (Partial Cut): This option regenerates the stand with spruce in phases and maintains the stand's uneven-aged character.

Harvest up to 20% of the stand in 1/4 to 2 acre groups. Scarify the ground to expose up to 25% mineral soil. Lop and scatter slash to protect regeneration. Perform the next cutting in 15 to 20 years.

RX OPTION 6.3 – Partial Cut (Thinning): This thinning maintains the stand through the current insect outbreak.

Thin the stand, removing approximately 20 to 30% of the live basal area to a residual minimum of 50 square feet per acre. Lodgepole pine and subalpine fir are the preferred species for removal, in that order. Retain Engelmann spruce and aspen. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. Protect regeneration with methods such as fencing, signing or barriers as needed.

RX OPTION 6.4 – Shelterwood Cutting (Partial Cut): This is an even-aged management option designed to encourage an initial flush of regeneration, and protect it with the residual stand until it is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB, and trees with less than 30% live crown ratios, for removal. Retain other trees. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an

overstory removal (second and last cutting) in 10 to 15 years.

RX OPTION 6.5 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management. This option would be used where the lodgepole pine is in groups within the stand or tree island.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

STAND 7: PURE ASPEN (90%+) AND ASPEN MIXED WITH OTHER TREE SPECIES

RX OPTION 7.1 – Partial Cut (Remove all conifers): Option 7.1 maintains aspen for the short term.

Harvest all conifers in the stand and retain aspen.

RX OPTION 7.2 – Partial Cut (Remove all aspen): Option 7.2 converts the aspen stand to a conifer stand. The resulting conifer stand will probably be an open glade.

Harvest all aspen in the stand and retain healthy conifers. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

RX OPTION 7.3 – Salvage Cutting (Partial Cut): Option 7.3 salvages dead aspen, and dead and infested lodgepole pine, and maintains the aspen stand through the current insect outbreak.

Harvest all the dead aspen, and dead or beetle infested trees, in the stand, up to 35% (in stands of recently killed trees) to 50% (stands of mostly older dead trees) of the



basal area of the stand, and retain all other trees. Protect regeneration with fencing, signing, barriers, etc.

RX OPTION 7.4 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management. This option would be used where the lodgepole pine is in groups within the stand or tree island.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 7.5 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the aspen, lodgepole pine and fir. Retain healthy and windfirm spruce. Regeneration should be protected until it is established.

REGENERATION OPTIONS

Regeneration methods for the above prescriptions focus on natural regeneration of lodgepole pine using the existing seed stock in the stands. Planting other species is an option, using seed collected from the correct seed zones on the White River NF. Supplementing natural regeneration by planting lodgepole pine grown from seed collected during harvest operations is another option.

The Regeneration Options are:

REGEN OPTION A

Natural - lop and scatter, scarify

REGEN OPTION B

Artificial - lop and scatter, scarify and supplement with transplants

REGEN OPTION C

Artificial - lop and scatter, scarify and supplement with nursery stock

REGEN OPTION D

Combination - lop and scatter, scarify and interplant nursery stock and transplants

REGEN OPTION E

None for conifer; allow aspen to fill in naturally or coppice

APPENDIX E. BOUNDARY MANAGEMENT PLAN

The Boundary Management Plan for the Snowmass Ski Area is based primarily upon the requirements of the Colorado Ski Safety Act of 1979, as amended (the “Act”), and the provisions set forth in the applicable U.S. Forest Service permit for the Snowmass Ski Area and the Ski Area Boundary Management Guidelines released by Richard E. Woodrow, Forest Supervisor for the White River National Forest in August of 1987. This plan addresses the issues that are unique to the Snowmass Ski Area and incorporates the historical experience of the area with boundary management.

The stated goal of the guideline is to inform and educate members of the public to hazards that exist adjacent to ski areas while providing a reasonable degree of opportunity for a “backcountry experience.” At this time, the primary landowner adjacent to the Snowmass Ski Area is the Forest Service. In accordance with the Act and the applicable federal regulations, the Forest Service has not closed any of its adjacent lands and has not requested the Ski Area to post “closed” signs along any portion of its boundary. The one exception is the section of boundary that borders the Lynx Habitat Conservation Area that runs along the northeastern boundary of Burnt Mountain. That section, which is approximately 2,300 feet long, will be posted with ski area boundary signs and an additional sign that reads; “USFS Lynx Habitat Conservation Area Closed”.

A system of ropes and signs mark the ski area boundary as required by the Act. A number of Forest Service Resort Exit Points have been installed to serve as access points to National Forest System land outside the Ski Area boundary. In those circumstances where the land adjacent to the Ski Area is privately owned and the owner has requested that his land be closed to the public, the Ski Area boundary has been so signed.

The Ski Area boundary that has been marked as described above is the boundary of that terrain that has been developed, administered and operated for skiing. Until such time that the Ski Area is advised otherwise by the Forest Service, those areas that are under the Forest Service permit but outside the historic operational boundary and not approved for development

and incorporation into the operational Ski Area will be treated the same as they have historically as other National Forest System land outside of the Ski Area. For example, this is the case with the areas to the south of the Cirque and Big Burn.

Consistent with the Act, the Ski Area has no responsibility for National Forest System land beyond the Ski Area boundary or for the welfare of people or skiers once they are beyond the area boundaries that are marked as provided in this plan.

In order to delineate the Snowmass Ski Area boundary, a system of permanent posts and ropes has been installed around most of the area. The exceptions to this system are the heavily wooded areas, non-skiable terrain barriers, and areas adjacent to Snowmass Village and other residential developments at the bottom of the Ski Area. “Ski Area Boundary” signs are placed around the perimeter of the area as prescribed in the Act.

The Forest Service has located a total of six Resort Exit Points (“R.E.P.”) on the Ski Area Boundary to serve as access points to the backcountry. An R.E.P. is located at the top of each of the following lifts: the Cirque, Big Burn, and High Alpine. Additional R.E.P.s are located on the Creekside run to provide access to the Government Trail and on the eastern Ridge of Burnt Mountain below the Cornice. (See attached map showing R.E.P. locations). Each R.E.P. contains a large sign board that contains a “Ski Area Boundary” sign, the Forest Service standard National Forest access point sign, and an Aspen Skiing Company warning sign, informing people that they are leaving the Ski Area.



The following is the text for the latter sign:

WARNING:

There are many unforeseen risks and dangers in the backcountry including avalanche slopes, cliffs, gullies, stream beds, thick forests, abandoned mine shafts, and other natural hazards. No patrol services are provided beyond this point. You are leaving the Ski Area.

This U.S. Forest Service access point is for the sole purpose of providing access to the National Forest for the backcountry skier. All backcountry skiers are responsible for knowing the boundary of the Snowmass Ski Area and the closures within the area. If re-entering the permit area, the backcountry skier may not violate any Ski Area closure. Information regarding closures and locations of U.S. Forest Service access gates can be obtained from the Ski Patrol.

In addition to these signs, the “gate” will consist of a metal gate with a self-closing hinge system that the backcountry user must open and exit the Ski Area through. Attached to this gate will be a yellow sign with red lettering that will read as follows:

This is your decision point. The backcountry can be dangerous. Proceed at your own risk.

The backcountry user may enter the Snowmass Ski Area anywhere along its boundary except where closed. Those portions of the boundary will be marked with signs, which read as follows:

Closed at this point. Enter at gate only.

A gate to enter the Ski Area is located along the boundary in the West Willow Saddle to provide access back into the ski area from the West Willow Basin.

In response to the high usage out of the following R.E.P.s, an additional sign is located at the Hanging Valley Headwall and Cirque gates which read as follows:

Attention!

You are leaving the Ski Area

There are no services beyond this point

The average cost of an out of area rescue is \$3,000.00

- 1. Do you have backcountry knowledge and training?*
- 2. Are you properly equipped with transceiver, shovel, probe and partner?*
- 3. Do you have a current avalanched hazard and weather forecast?*
- 4. Do you or anyone in your party know where you are going and how to return to the ski area?*
- 5. Have you left your backcountry itinerary with anyone?*

If you answer NO to any of these questions, DON'T GO!

All Closures within the Ski Area are closures consistent with the requirements of the Act. They cannot be entered to reach the Ski Area boundary. Conversely no skier may enter or re-enter the Ski Area through a closed area. Closures will be signed with the international “Closed” sign and may also be marked with ropes.

In the event a backcountry skier is injured, lost, incapacitated or suffers an event necessitating a rescue outside the marked Ski Area boundary, the rescue effort will be the responsibility of the Pitkin County Sheriff. Any assistance that may be offered by the Ski Patrol will be performed at the request and under the direction of the Pitkin County Sheriff’s office, performed on a volunteer basis only, performed without unreasonable risk to Aspen Skiing Company personnel, and done to the extent that normal emergency preparedness within the Ski Area boundary and other obligations to the Aspen Skiing company and its guests are not jeopardized.

As a final overview, it should be re-emphasized that no section of the Snowmass Ski Area boundary is closed to the public with the exception of those areas where closure has been through established Forest Service R.E.P.s and the Lynx Habitat Conservation Area on Burnt Mountain. The Ski Area has no responsibility to those individuals skiing outside of the marked Ski Area boundaries.