

# Beaver Creek Resort

## Master Development Plan

### *Update*

### 2010

*Prepared By:*



*Technical Review Provided By:*



---

# BEAVER CREEK MASTER DEVELOPMENT PLAN UPDATE 2010

---

PREPARED BY:



Technical Review Provided By:





This signature page represents the Forest Supervisor's acceptance of the Beaver Creek Master Development Plan, as originally developed or amended. Ski Area Master Development Plans (MDPs) generally are conceptual in nature, and contain desired conditions, objectives, and rationale for the comprehensive development of federal and private lands within the ski area boundary. MDPs do not grant, withhold, or modify any contract, permit or other legal instrument, subject anyone to civil or criminal liability, or create any legal rights. MDPs do not approve or execute projects and activities. Decisions with effects that can be meaningfully evaluated are made when projects and activities are analyzed and approved in site-specific National Environmental Policy Act (NEPA) analyses on projects conceptually disclosed in ski area MDPs. In short, this MDP is a framework for identifying and prioritizing potential projects to carry forward into a formal decision-making process, and constitutes a guide for determining the forthcoming scope of environmental analysis.

**Accepted By:**

---

**Scott Fitzwilliams**  
**Forest Supervisor**  
**White River National Forest**

---

**Date**

# TABLE OF CONTENTS

<b>1. INTRODUCTION.....</b>	<b>1</b>
A. LOCATION .....	1
B. OVERVIEW OF CURRENT SKI AREA OPERATIONS.....	1
C. BACKGROUND .....	2
D. PLANNING AND ENVIRONMENTAL DOCUMENTATION .....	5
E. STATEMENT OF GOALS AND OBJECTIVES .....	6
F. ACCEPTANCE BY USFS .....	7
G. AMENDMENTS TO THE MDP.....	8
1. <i>Amendments</i> .....	8
2. <i>Process</i> .....	8
<b>2. DESIGN CRITERIA.....</b>	<b>9</b>
A. TRAIL DESIGN .....	9
1. <i>Slope Gradients and Terrain Breakdown</i> .....	9
2. <i>Trail Density</i> .....	10
3. <i>Trail System</i> .....	10
B. LIFT DESIGN .....	11
C. RESORT CAPACITY .....	11
1. <i>Beaver Creek's Manage-To Process</i> .....	11
2. <i>Comfortable Carrying Capacity</i> .....	12
D. BALANCE OF FACILITIES.....	12
<b>3. EXISTING SKI RESORT FACILITIES .....</b>	<b>13</b>
A. CHAIRLIFTS .....	17
B. SKI TERRAIN.....	19
C. TERRAIN PARKS.....	24
D. RACE VENUES.....	24
E. RESORT CAPACITY .....	24
1. <i>Beaver Creek's Manage-To Process</i> .....	24
2. <i>Comfortable Carrying Capacity</i> .....	25
F. RESORT DENSITY ANALYSIS .....	26
G. MAINTENANCE FACILITIES/MOUNTAIN OPERATIONS, SNOWMAKING, AND UTILITIES .....	28
1. <i>Maintenance and Operational Facilities</i> .....	28
2. <i>Snowmaking</i> .....	29
3. <i>Utilities</i> .....	30
H. ALTERNATIVE EXPERIENCE.....	35
1. <i>Hay Meadow</i> .....	35
2. <i>McCoy Park</i> .....	35
3. <i>Summer Programs</i> .....	35
4. <i>Summer Trails</i> .....	36
I. SKIER SERVICES BUILDINGS.....	39
J. RESTAURANT SEATING .....	39
K. ARCHITECTURAL THEMES.....	40
L. PARKING .....	41
M. RESORT BALANCE AND OPPORTUNITIES / CONSTRAINTS .....	42
1. <i>Resort Balance</i> .....	42
2. <i>Opportunities and Constraints</i> .....	43
N. BOUNDARY MANAGEMENT .....	45
1. <i>Bald Spot</i> .....	45
2. <i>Slick Slide, Y Chute and Stairway to Heaven</i> .....	45
3. <i>Lower Stone Creek</i> .....	45
4. <i>Alta Chute and Grandpa's</i> .....	45

4.	PREVIOUSLY-APPROVED, NOT YET IMPLEMENTED PROJECTS .....	46
5.	UPGRADING PLAN.....	47
A.	LIFTS .....	48
1.	New Lifts.....	48
2.	Upgraded Lifts.....	48
B.	SKI TERRAIN.....	52
1.	Bachelor Gulch.....	57
2.	Strawberry Park/Western Hillside .....	57
3.	McCoy Park.....	58
4.	Centennial Express .....	58
5.	Rose Bowl .....	59
C.	TERRAIN PARKS.....	59
D.	RACE VENUES.....	59
E.	RESORT CAPACITY .....	60
1.	Beaver Creek's Manage-To Process .....	60
2.	Comfortable Carrying Capacity .....	60
F.	RESORT DENSITY ANALYSIS .....	62
G.	MAINTENANCE FACILITIES, UTILITIES, SNOWMAKING COVERAGE, AND GROOMING .....	64
1.	Snowcat Maintenance Garage.....	64
2.	Mountain Access Road.....	64
3.	Utilities.....	65
4.	Snowmaking .....	65
H.	ALTERNATIVE EXPERIENCE AREA UPGRADE PLAN .....	69
I.	ALTERNATIVE EXPERIENCE.....	69
1.	Hay Meadow.....	69
2.	McCoy Park.....	69
3.	Trails.....	69
J.	SKIER SERVICES UPGRADE PLAN .....	71
1.	Spruce Saddle Renovation .....	71
2.	Red Tail Camp .....	71
3.	Strawberry Park Restaurant .....	71
4.	Spruce Saddle Environmental Center .....	71
K.	RESTAURANT SEATING .....	72
L.	PARKING .....	73
M.	RESORT BALANCE AND LIMITING FACTORS .....	74
N.	VEGETATION MANAGEMENT.....	75
6.	GLOSSARY .....	76
7.	BEAVER CREEK MASTER DEVELOPMENT PLAN UPDATE REVISIONS LOG .....	82

## LIST OF TABLES

TABLE 1-1: BEAVER CREEK ANNUAL VISITATION 2001/02 THROUGH 2009/10.....	3
TABLE 2-1: TERRAIN GRADIENTS.....	9
TABLE 2-2: CENTRAL ROCKY MOUNTAIN SKIER ABILITY BREAKDOWN.....	10
TABLE 2-3: SKIER DENSITY PER ACRE.....	10
TABLE 3-1: SKI LIFT SPECIFICATIONS – EXISTING CONDITIONS.....	18
TABLE 3-2: TERRAIN SPECIFICATIONS – EXISTING CONDITIONS.....	19
TABLE 3-3: TERRAIN CAPACITY DISTRIBUTION BY ABILITY LEVEL – EXISTING CONDITIONS.....	23
TABLE 3-4: CALCULATION OF COMFORTABLE CARRYING CAPACITY – EXISTING CONDITIONS.....	25
TABLE 3-5: DISTRIBUTION OF SKIER POPULATION – EXISTING CONDITIONS.....	27
TABLE 3-6: EXISTING GUEST SERVICE FACILITIES.....	39
TABLE 3-7: EXISTING RESTAURANT SEATING.....	40
TABLE 3-8: PARKING LOTS AND CAPACITIES – EXISTING CONDITIONS.....	41
TABLE 5-1: SKI LIFT SPECIFICATIONS – UPGRADE PLAN.....	51
TABLE 5-2: TERRAIN SPECIFICATIONS – UPGRADING PLAN.....	52
TABLE 5-3: TERRAIN CAPACITY DISTRIBUTION BY ABILITY LEVEL – UPGRADING PLAN.....	56
TABLE 5-4: CALCULATION OF COMFORTABLE CARRYING CAPACITY – UPGRADING PLAN.....	61
TABLE 5-5: DISTRIBUTION OF SKIER POPULATION – UPGRADING PLAN.....	63
TABLE 5-6: PLANNED GUEST SERVICE FACILITIES.....	72
TABLE 5-7: PLANNED RESTAURANT SEATING.....	73

## LIST OF CHARTS

CHART 3-1: TERRAIN CAPACITY DISTRIBUTION BY ABILITY LEVEL – EXISTING CONDITIONS.....	23
CHART 3-2: DISTRIBUTION OF SKIER POPULATION – EXISTING CONDITIONS.....	28
CHART 3-3: RESORT BALANCE – EXISTING CONDITIONS.....	42
CHART 5-1: TERRAIN CAPACITY DISTRIBUTION BY ABILITY LEVEL – UPGRADING PLAN.....	57
CHART 5-2: DISTRIBUTION OF SKIER POPULATION – UPGRADING PLANS.....	64
CHART 5-3: RESORT BALANCE – UPGRADING PLAN.....	74

## LIST OF FIGURES

FIGURE 1-1: VICINITY MAP.....	4
FIGURE 3-1: EXISTING CONDITIONS – LOWER MOUNTAIN.....	14
FIGURE 3-2: EXISTING CONDITIONS – UPPER MOUNTAIN.....	15
FIGURE 3-3: BACKCOUNTRY ACCESS POINTS.....	16
FIGURE 3-4: EXISTING UTILITIES, WATER AND SAN (LOWER MOUNTAIN).....	31
FIGURE 3-5: EXISTING UTILITIES WATER AND SAN (UPPER MOUNTAIN).....	32
FIGURE 3-6: EXISTING SNOWMAKING (LOWER MOUNTAIN).....	33
FIGURE 3-7: EXISTING SNOWMAKING (UPPER MOUNTAIN).....	34
FIGURE 3-8: EXISTING SUMMER TRAILS AND ALTERNATE ACTIVITIES (UPPER MOUNTAIN).....	37
FIGURE 3-9: EXISTING SUMMER TRAILS AND ALTERNATE ACTIVITIES (LOWER MOUNTAIN).....	38
FIGURE 5-1: PLANNED CONDITIONS (LOWER MOUNTAIN).....	49
FIGURE 5-2: PLANNED CONDITIONS (UPPER MOUNTAIN).....	50
FIGURE 5-3: PLANNED UTILITIES.....	67
FIGURE 5-4: PLANNED SNOWMAKING.....	68
FIGURE 5-5: PLANNED SUMMER TRAILS AND ALTERNATE ACTIVITIES.....	70

# **1. INTRODUCTION**

Operating under permit from the White River National Forest (WRNF) Beaver Creek Four Season Resort provides an important and quality source of recreational opportunities on public lands. This MDP identifies opportunities and constraints across the ski area, and provides direction that will ultimately lead to an improved balance of services to meet guests' needs and expectations. This MDP supplements the Environmental Analysis Report, Beaver Creek Winter Sports Site and Year Around Recreation Area (February 5, 1976).

## **A. LOCATION**

The ski area is located at the base of Beaver Creek on the WRNF and is accessed by Interstate 70, which passes through the Town of Avon. Beaver Creek is approximately two and a half to three hours driving time from Denver and the Front Range metropolitan area via Interstate 70 through the Eisenhower Tunnel. Beaver Creek is located approximately 20 miles east of the Eagle County Airport.

## **B. OVERVIEW OF CURRENT SKI AREA OPERATIONS**

Beaver Creek Four Season Resort operates under a U.S. Forest Service Term Special Use Permit (SUP) issued to Beaver Creek Associates (a wholly owned subsidiary of Vail Resorts, Inc.). The SUP covers approximately 3,849 acres of the White River National Forest. The Arrowhead and Bachelor Gulch areas and the majority of the Buckaroo Gondola, Strawberry Park Express and Elkhorn Lift (chairs 1, 12 and 14, respectively) terrain and the lower Chair 11 and 6 terrain are located on private land, totaling 1,900 acres. There are approximately 1,570 acres of formalized lift-served terrain within the total resort area, including the SUP (965 acres) and private land area (605 acres). There are 148 named trails, including trails used solely for access to and from real estate. In addition, there are approximately 774 acres of named and unnamed glades, for a total skiable acreage of approximately 2,344 acres. The area has 23 lifts, ranging from gondolas to belt conveyors. There are six food service outlets on the mountain providing a full range of service levels. Ski school and retail services are available at numerous locations across the resort.

The ski season typically begins in mid-November and runs through late-April. The ski day begins as early as 7:00 a.m. and can run as late as 6:30 p.m. Beano's Cabin, Zach's Cabin and Allie's Cabin all operate late into the evening. During the ski season maintenance activities are ongoing, 24 hours a day, seven days a week. Maintenance activities are also continuous during the non-ski season.

During the summer season the Centennial Express and Spruce Saddle Lodge are operated. Periodically summer operations shift to the Strawberry Park Express. A system of hike, bike, equestrian and multiple use trails are among the recreational activities offered on the mountain.

At the peak of the ski season Beaver Creek employs up to 3,000 people. During the summer, the number of employees is approximately 2,000.

## **C. BACKGROUND**

The following timeline provides a summary of the development of Beaver Creek.

*1881:* George Townsend settles the valley.

*1972:* Vail Resorts purchases the land, and begins designing a resort that combined western hospitality and European charm.

*1974:* Beaver Creek is identified as the site for the scheduled 1974 Olympics, which were subsequently rejected by Colorado voters in a referendum.

*1978:* Groundbreaking at Beaver Creek begins and is attended by former President Gerald Ford.

*1980:* Beaver Creek officially opens with 4 chairlifts, 28 runs, 425 skiable acres—22 of which are covered by snowmaking—and the award-winning Spruce Saddle Restaurant. A tennis bubble serves as the base area lodge.

*1983:* The Poste Montane Lodge opens, marking the beginning of Beaver Creek Village.

*1983:* Larkspur Bowl opens, increasing expert and intermediate terrain.

*1984:* The Village Hall opens.

*1986:* The McCoy Park Cross-Country Center, with more than 37 kilometers of groomed trails, opens. The award-winning on-mountain restaurant, Beano's Cabin, also opens for business.

*1989:* Beaver Creek hosts the World Ski Championships.

*1990:* Grouse Mountain, a 100-acre expansion at Beaver Creek primarily catering to advanced skiers, opens.

*1996:* Bachelor Gulch ski terrain opens connecting Arrowhead and Beaver Creek.

*1997:* The new Birds of Prey™ downhill course, built in preparation for the 1999 World Alpine Ski Championships, opens.

*1999:* Beaver Creek hosts the Visa Birds of Prey™ World Cup Downhill ski race, which brings together hundreds of athletes as they compete to be named World Champion.

*2003:* Chair 9 is replaced with a high-speed detachable quad.

*2004:* Beaver Creek Landing opens with two new high-speed quads, chairs 15 and 18, providing an alternative entry point for Beaver Creek Mountain.

*2005:* Chair 11 is replaced with a high-speed detachable quad.

*2007:* Chair 1 is replaced with the children-friendly Buckaroo Gondola.

*2007:* The Riverfront Gondola opens connecting the Town of Avon to Beaver Creek.

Annual visitation at Beaver Creek between the 2001/02 and 2009/10 season is provided in Table 1-1. Beaver Creek has experienced consistent growth in annual visitation, averaging roughly 833,000 annual visits over this nine-year period. Beaver Creek's annual average growth rate over this nine-year period was 3.9 percent.

**TABLE 1-1:  
BEAVER CREEK ANNUAL VISITATION  
2001/02 THROUGH 2009/10**

<b>Season</b>	<b>Annual Visitation</b>	<b>Annual Growth Rate</b>
2009/10	927,074	-0.5%
2008/09	931,593	1.5%
2007/08	917,863	3.2%
2006/07	889,812	1.6%
2005/06	875,455	7.3%
2004/05	815,350	6.5%
2003/04	765,393	6.7%
2002/03	717,146	9.0%
2001/02	657,956	--
<i>Annual Average Visitation</i>	<i>833,071</i>	<i>--</i>
<i>9-Year Average Annual Growth Rate</i>	<i>--</i>	<i>3.9%</i>

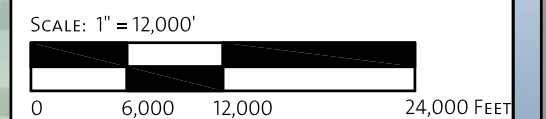
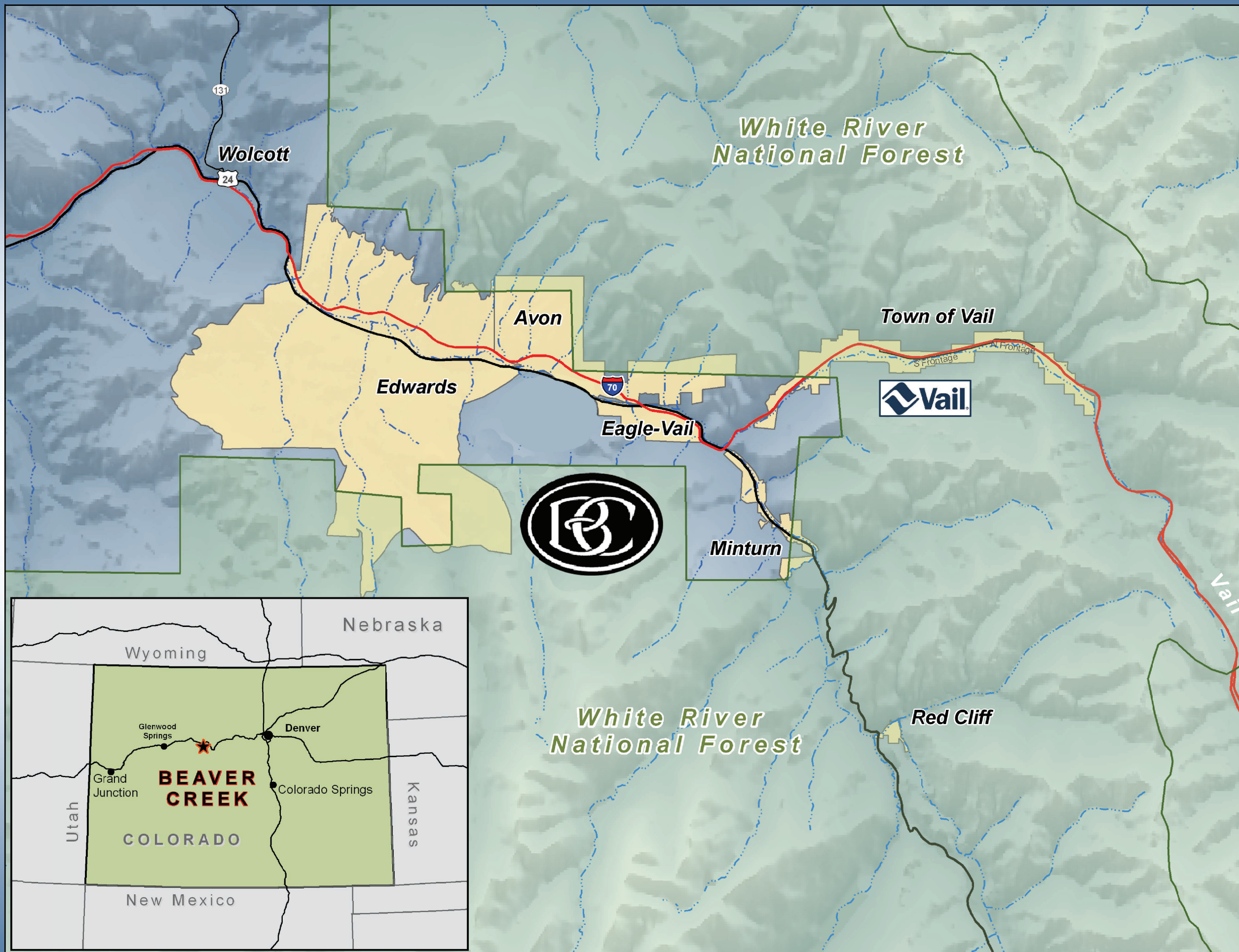




BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 1 - 1

LOCATION MAP



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM

## **D. PLANNING AND ENVIRONMENTAL DOCUMENTATION**

The majority of Beaver Creek's on-mountain lift/trail network, guest service facilities, and associated operations occur on public lands administered by the Eagle Holy Cross Ranger District of the WRNF. These activities and operations are authorized under a Forest Service-issued 40-year SUP, which was renewed in 1999. Authorized activities on National Forest System lands are carried out in accordance with U.S. Forest Service policy, specific provisions contained in the SUP, as well as Forest-wide and management area direction found in the 2002 WRNF Land and Resource Management Plan.

The following list of planning, environmental analysis, and approval documentation constitutes the local planning guidance and authorization for specific activities and actions within Beaver Creek's SUP area. (A discussion of U.S. Forest Service policy that provides direction for administration of ski area permits is purposefully omitted here.)

### 1976 Environmental Analysis Report, Beaver Creek Winter Sports Site and Year Around Recreation Area

- The 1976 EAR outlined the proposed development of the ski terrain on the public lands that make up a substantial portion of the Beaver Creek Resort. It did not include those portions that are included within the Arrowhead Planned Unit Development (PUD). The 1976 EAR has been fully implemented.

### 1998 Environmental Assessment, Snowmaking Master Plan, Beaver Creek Resort

- The 1998 Environmental Assessment, Snowmaking Master Plan approved the installation of snowmaking on an additional 130 acres of terrain. The Snowmaking Plan has not been fully implemented.

### 2002 Revision to the White River Forest Land and Resource Management Plan

- The 2002 revision to the 1985 WRNF Land and Resource Management Plan provides Forest-wide and specific Management Area 8.25 direction for operations and activities within Beaver Creek's SUP area. The 2002 revision added McCoy Park and the Stone Creek drainage to the existing term permit and removed the Mud Springs area from the 8.25 prescription.

### 2002 Final Environmental Assessment, Gondola Proposal, Beaver Creek Resort

- Approved the portion of a proposed gondola that would be constructed from the Tarnes area, through Bachelor Gulch and up to the summit of Chair 12 in Beaver Creek. Only the final 3,000 feet of the lift would be on US Forest Service lands. This project was modified and implemented as two detachable chairlifts.

### 2005 Environmental Assessment, Stone Creek, Beaver Creek Resort

- Approved the construction of access and egress routes to the Stone Creek Chutes.

### Annual Winter and Summer Operations Plans, Beaver Creek Resort

- Prepared annually.

## Annual Summer Construction Plans, Beaver Creek Resort

- Prepared annually.

### **E. STATEMENT OF GOALS AND OBJECTIVES**

The goals and objectives of this MDP flow from the core values of Beaver Creek and Vail Resorts and their dedication to stakeholders, which include:

- Guests
- Employees
- Communities
- Shareholders
- Natural Environment

This MDP, designed to be a supplement to the current planning documents for Beaver Creek Four Season Resort, addresses Beaver Creek's opportunities and constraints through the lens of Beaver Creek's core values. This MDP will guide Beaver Creek in providing a high quality recreational experience that is aligned with its stakeholders and core values, including:

- Appealing to guests of all ages and ability levels;
- Maintaining or improving its position as one of the top family ski<sup>1</sup> destinations in the world; and
- Protecting the environment in which Beaver Creek operates.

Beaver Creek aims to lead the industry with innovative guest service and family programs, implemented in a sustainable manner. For Beaver Creek and Vail Resorts, sustainability means perpetuating the superior quality of the guest experience, rooted in the strength and success of our Company and our employees, preservation and care of our community, and stewardship of the spectacular environment that surrounds our resorts... indefinitely. Beaver Creek's product is the great outdoors and as such, it recognizes a special obligation to protect the environment in which it operates.

Beaver Creek offers many unique characteristics, including: extensive safety and environmental programs, a world-class ski and snowboard school, a variety of terrain with a unique village-to-village ski experience, minimal lift lines, a snowshoe and Nordic ski park, non-ski activities, luxury lodging, award-winning on-mountain and village dining, friendly and responsive front-line employees, and one of the few World Cup Men's Downhill course in the United States. Beaver Creek consistently rates among the top ten resorts in North America in SKI Magazine's annual reader's poll and has received safety awards from the National Ski Areas Association for nine consecutive years, including "Best Overall Safety" for the last three consecutive years. The Beaver Creek brand is gaining in recognition and is synonymous with quality, service and family. This is

---

<sup>1</sup> At ski areas, one may see people using Alpine, snowboard, telemark, cross-country, and other specialized ski equipment, such as that used by disabled guests. Accordingly, the terms "ski, skier, and skiing" in this document encompass all lift-served sliding sports typically associated with a winter sports resort.

reflected in the consistent increases in annual visitation that Beaver Creek has experienced in the past decade, as shown in Table 1-1.

In order to maintain its position in the industry, Beaver Creek will need to continually focus on providing a family-friendly atmosphere, quality amenities and updated family and service programs to meet the demands of the discerning Beaver Creek guest. This MDP identifies the following core objectives to ensure that Beaver Creek Four Season Resort continues to provide unparalleled recreational opportunities for the entire family in a year-round capacity. These objectives serve as the foundation for the Upgrading Plan presented in Chapter 5.

1. Continue to update mountain facilities and infrastructure in order to provide the highest quality guest experience possible.
2. Update mountain facilities and infrastructure related to ski racing to continue to provide world class venues for Alpine events.
3. Regularly update guest services across the resort to respond to the needs and demands of Beaver Creek's market.
4. The goal of Beaver Creek's summer programs is to provide the guest with a wide variety of opportunities, activities, and experiences in a mountain setting ranging from very passive to very active. This requires continually identifying and responding to new opportunities for summer and off-season activities, both on and off the mountain, that capitalize on Beaver Creek's location and market.
5. Update family and service programs with additional activities both on and off the mountain.
6. Accommodate projected local population increases and destination visitation while maintaining a high quality recreational experience and pleasant setting.
7. Address identified deficiencies in beginner and low intermediate terrain (discussed in Chapter 3, and specifically in Table 3-3).
8. Enhance the quality and variety of ski and snowboard terrain for all segments of the market – from expert to first-time skiers.
9. Implement projects and operate in a sustainable manner.

## **F. ACCEPTANCE BY USFS**

This MDP was created using an iterative and collaborative process between Beaver Creek planners, White River National Forest staff, and SE GROUP planners. Forest Service *acceptance* of this MDP is consistent with the requirements of the Beaver Creek's SUP and updates the 1976 Environmental Analysis Report.

Acceptance of this document as a planning tool for Beaver Creek does not imply authorization to proceed with implementation of any of the projects that are identified herein. Therefore, all projects identified within this MDP that have not been previously approved will require site-specific

environmental analysis and approval per the National Environmental Policy Act (NEPA) before they can be implemented.

## **G. AMENDMENTS TO THE MDP**

### **1. Amendments**

This MDP is intended to be a dynamic document—i.e., it generally outlines Beaver Creek’s strategies for maintaining a quality recreational facility on National Forest System lands while allowing flexibility in achieving these goals due to an evolving skier market, business decisions and technological innovations.

In order to reflect existing conditions, changes in guest expectation, new technology, or other project influences, periodic amendments, conducted jointly by the permittee and the Forest Service, will be warranted for this MDP. Typical amendments could include realignments of lifts, relocation of trail systems, vegetative treatments, road improvements, changes in the location and capacity of facilities, or new projects that were not anticipated in this document but do not warrant a complete update of the MDP.

Any amendments and revisions to this MDP will be tracked by notations in the “Revisions Log” found in Section 9 at the end of this document.

### **2. Process**

Following acceptance of this MDP by the Forest Service, any requests to amend it will be submitted to the Forest Supervisor in the form of a written “Proposed Master Development Plan Amendment(s)” that relates to project-specific proposals.

## 2. DESIGN CRITERIA

The upgrading and improvement of a ski area is influenced by a variety of facility design criteria that help to create a quality ski experience. Chapter 2 provides an overview of the basic design criteria for which Chapter 3 (Existing Resort Facilities) and Chapter 4 (Upgrading Plan) are based. By design, information presented in Chapter 2 is general in nature, and related to the concept of resort master planning, rather than to Beaver Creek Four Season Resort specifically (with the exception of the “Manage-To” discussion in Section C). Chapters 4 and 5 present information that is specific to Beaver Creek.

### A. TRAIL DESIGN

#### 1. Slope Gradients and Terrain Breakdown

Terrain ability level designations are based on slope gradients and terrain features associated with the various ability designations unique to each mountain. Ability level designations for this analysis are based on the maximum sustained gradient calculated for each trail. Short sections of a trail can be more or less steep without affecting the run designation. For example, novice skiers are typically not intimidated by short, steeper pitches of slope, but a sustained steeper pitch may cause the trail to be classified with a higher difficulty rating. The following general gradients classify the skier difficulty level of the available terrain at Beaver Creek.

**TABLE 2-1:  
TERRAIN GRADIENTS**

Skier Ability	Slope Gradient
Beginner	8 to 12%
Novice	to 25%
Low Intermediate	to 35%
Intermediate	to 45%
Intermediate Advanced	to 55%
Expert	over 55%

Source: SE GROUP, Mountain Planning Guidelines

The distribution of terrain by skier ability level and slope gradient is then compared with the market demand for each ability level. The available ski terrain should be capable of accommodating the full range of ability levels reasonably consistent with market demand. The market breakdown for the Central Rocky Mountain skier market is shown in Table 2-2, illustrating that, in this region, intermediate skiers comprise the bulk of market demand. Beaver Creek’s specific skier ability breakdown is compared to the Central Rocky Mountain skier ability breakdown in Chapter 3, Section B (Table 3-3).



**TABLE 2-2:  
CENTRAL ROCKY MOUNTAIN SKIER ABILITY BREAKDOWN**

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

Source: SE GROUP, Mountain Planning Guidelines

## 2. Trail Density

The calculation of capacity for a ski area is based in part on the target number of skiers that can be accommodated (on average) on a theoretical acre of ski terrain at any one given time. The criteria for the range of trail densities for North American ski areas are listed below in Table 2-3.<sup>2</sup>

**TABLE 2-3:  
SKIER DENSITY PER ACRE**

Skier Ability	Percent of Skier Market
Beginner	25 to 40 skiers/acre
Novice	12 to 30 skiers/acre
Low Intermediate	8 to 25 skiers/acre
Intermediate	6 to 20 skiers/acre
Intermediate Advanced	4 to 15 skiers/acre
Expert	2 to 10 skiers/acre

Source: SE GROUP, Mountain Planning Guidelines

These density figures account for the skiers that are actually populating the ski trails and do not account for other guests who are either waiting in lift lines, riding the lifts, using the milling areas or other support facilities. Generally speaking (and depending on specific conditions), on an average day at any given ski area between 25 and 60 percent of the total number of skiers/riders can be expected to be on the trails at any one time. Additionally, areas on the mountain, such as merge zones, convergence areas, lift milling areas, major circulation routes, and egress routes, will experience higher densities periodically during the ski day.

## 3. Trail System

Each trail should provide an interesting and challenging experience for skiers with the ability level for which the trail is designed. Trail widths should vary depending upon topographic conditions and the caliber of the skier being served. The trail network should provide the full range of ability levels consistent with their market demand.

---

<sup>2</sup> It should be noted that Beaver Creek is operating, on average, at the lower end of the density ranges outlined in Table 2-3.



In terms of a ski area'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 variation in terrain. This means having developed runs of all ability levels: some groomed on a regular basis and some not, tree skiing, and terrain parks and pipes.

## **B. LIFT DESIGN**

The goal for lift design is to serve the available ski terrain in an efficient manner. Numerous factors should be considered including wind conditions, environmental resources (e.g., visuals, wetlands etc.), round-trip skiing, access needs, interconnectability between other lifts and trails, overall mountain circulation and the need for staging space at the lower and upper terminal sites. The vertical rise and length of ski lifts for a particular mountain are important measures of overall attractiveness and marketability of a ski area.

## **C. RESORT CAPACITY**

Beaver Creek's "Manage-To" process and Comfortable Carrying Capacity are introduced here, and detailed throughout Chapters 3 and 4.

### **1. Beaver Creek's Manage-To Process**

The "Manage-To" process allows Beaver Creek and the Forest Service to manage for health, safety and welfare considerations, and a high quality skier experience based on calculated planning numbers (threshold). Manage-To is a flexible process used by Beaver Creek when skier numbers exceed an agreed-upon threshold. Manage-To includes steps to manage skier numbers on subsequent days if it is likely that the subsequent day's skier numbers may again exceed the threshold.

Beaver Creek will hold a meeting including a Forest Service representative at the end of any day that exceeds the threshold to evaluate health, safety, and quality welfare considerations of the day's operation. Manage-To actions may be implemented as warranted by the review of the subject day's operational impacts.

There are a variety of Manage-To actions available to Beaver Creek, which help manage skier numbers. The following list is for illustrative purposes only and does not represent an all-inclusive list or mandatory steps.

1. restrictions on employee and dependant passes;
2. stop issuance of complimentary tickets;
3. manage ticket pricing; and
4. restrict student and merchant passes.

Beaver Creek will rely on evaluation of current operations and conditions, its prior experience and best judgment to determine which Manage-To action or actions, if any, to implement for management of skier volume on subsequent days.

Beaver Creek's Manage-To number was created via the Forest Service and Eagle County approvals of the development of Beaver Creek and Arrowhead – the 1976 Environmental Assessment Report, which approved Beaver Creek, and the Eagle County approval of the Arrowhead Ski Area. By design, Beaver Creek's Manage-To number is lower than its Comfortable Carrying Capacity (discussed below) in order to preserve the recreational experience that guests have come to expect.

## **2. Comfortable Carrying Capacity**

Comfortable Carrying Capacity (“CCC”) is a planning tool used to determine the optimum level of daily utilization for a resort – one that facilitates a pleasant recreational experience. This is a planning figure only and does not represent a regulatory cap on visitation. CCC is used to ensure that capacities are balanced across facilities and are sufficient to meet anticipated demand. CCC is based on a comparison of uphill vertical lift supply to downhill vertical skiing demand. Beaver Creek's CCC is discussed in detail in Chapter 3.

## **D. BALANCE OF FACILITIES**

The mountain master planning process emphasizes the importance of balancing recreational facility development in a manner consistent with Beaver Creek's core values. The capacities of the skier service functions should be adequate to provide a quality level of service on those days where skier numbers are approaching the Manage-To threshold. The future development of a ski area should be designed and coordinated to maintain a balance between skier demand, ski area capacity (lifts and trails), and the supporting equipment and facilities (e.g., grooming machines, day lodge services and facilities, utility infrastructure, access, and parking).

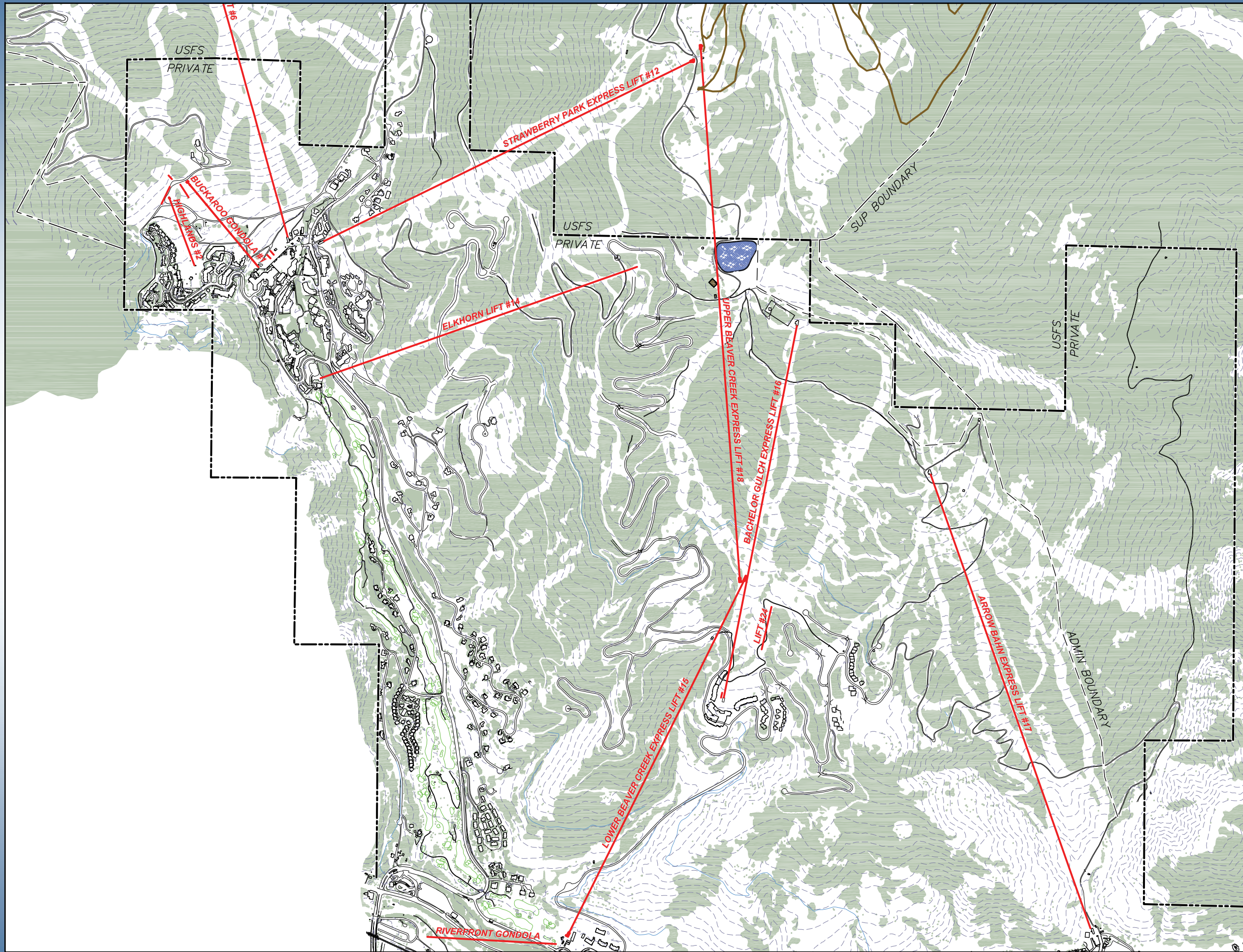
### **3. EXISTING SKI RESORT FACILITIES**

The following section contains an examination and analysis of existing skier facilities at Beaver Creek Four Season Resort. The resort inventory is the first step in the evaluation process and involves the collection of data pertaining to Beaver Creek's existing facilities. This inventory includes ski lifts, ski trails, the snowmaking system, base area structures, skier services, and day-use parking/shuttle services. The analysis of the inventory data involves the application of ski industry norms to Beaver Creek's existing conditions. This process allows for the comparison of Beaver Creek's existing ski facilities to those facilities commonly found at other North American ski resorts of similar size and composition.

The overall balance of the existing ski area is evaluated by calculating the skier capacities of Beaver Creek's various facility components and then comparing these capacities to the ski area's Manage-To planning number (discussed below in Section E). This examination of capacities helps to identify the ski area's strengths and weaknesses. Chapter 3 is concluded with a discussion of "Opportunities and Constraints" which provide the foundation for the Upgrade Plan in Chapter 4.

Beaver Creek's existing facilities are shown in Figure 3-1.



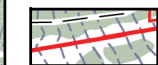


BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 3 - 1

EXISTING CONDITIONS  
LOWER MOUNTAIN

LEGEND



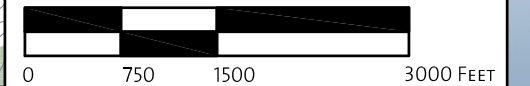
EXISTING LIFTS AND TRAILS



EXISTING NORDIC TRAILS



50' CONTOUR INTERVAL



PREPARED BY:

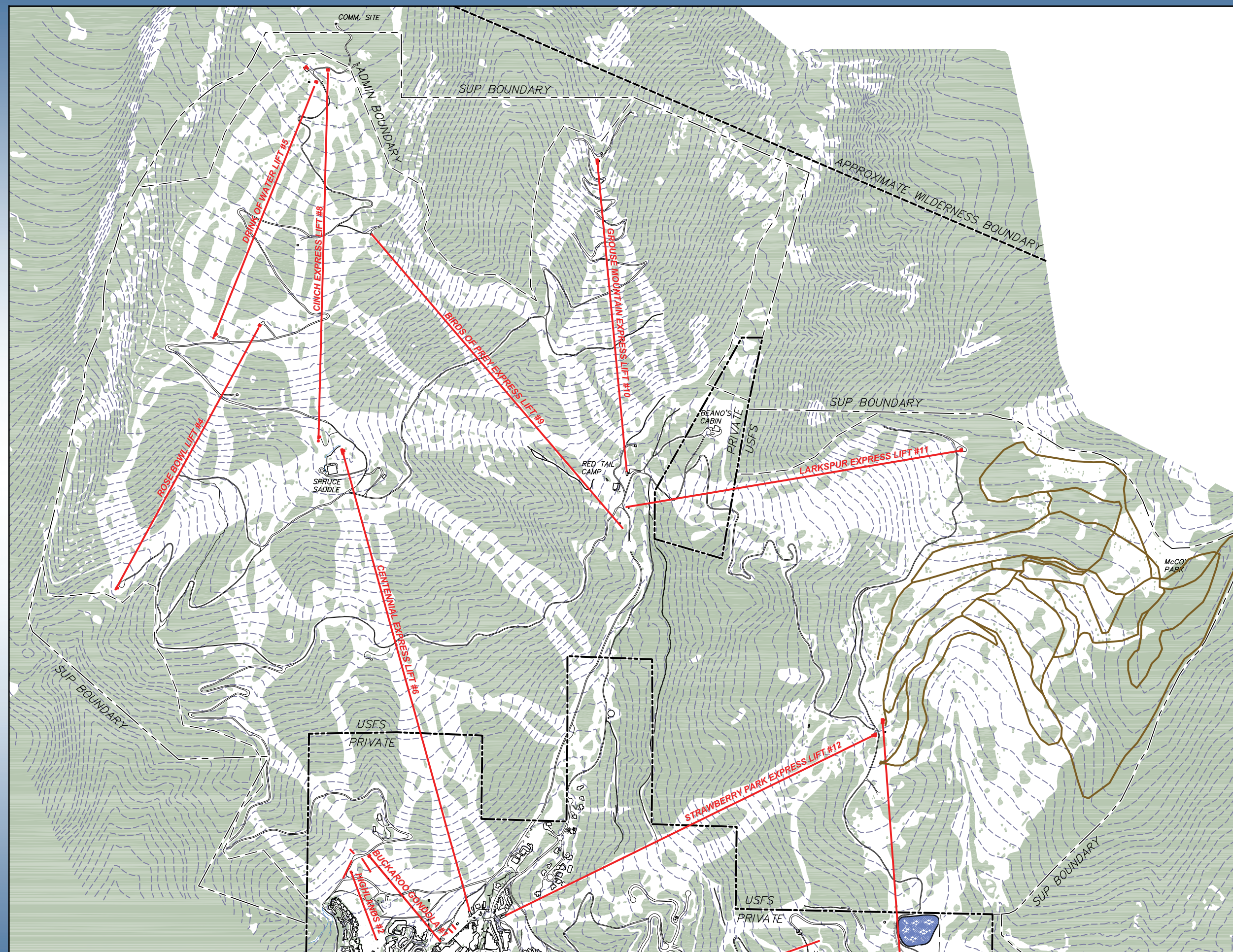


WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM





## EXISTING CONDITIONS UPPER MOUNTAIN



50' CONTOUR INTERVAL

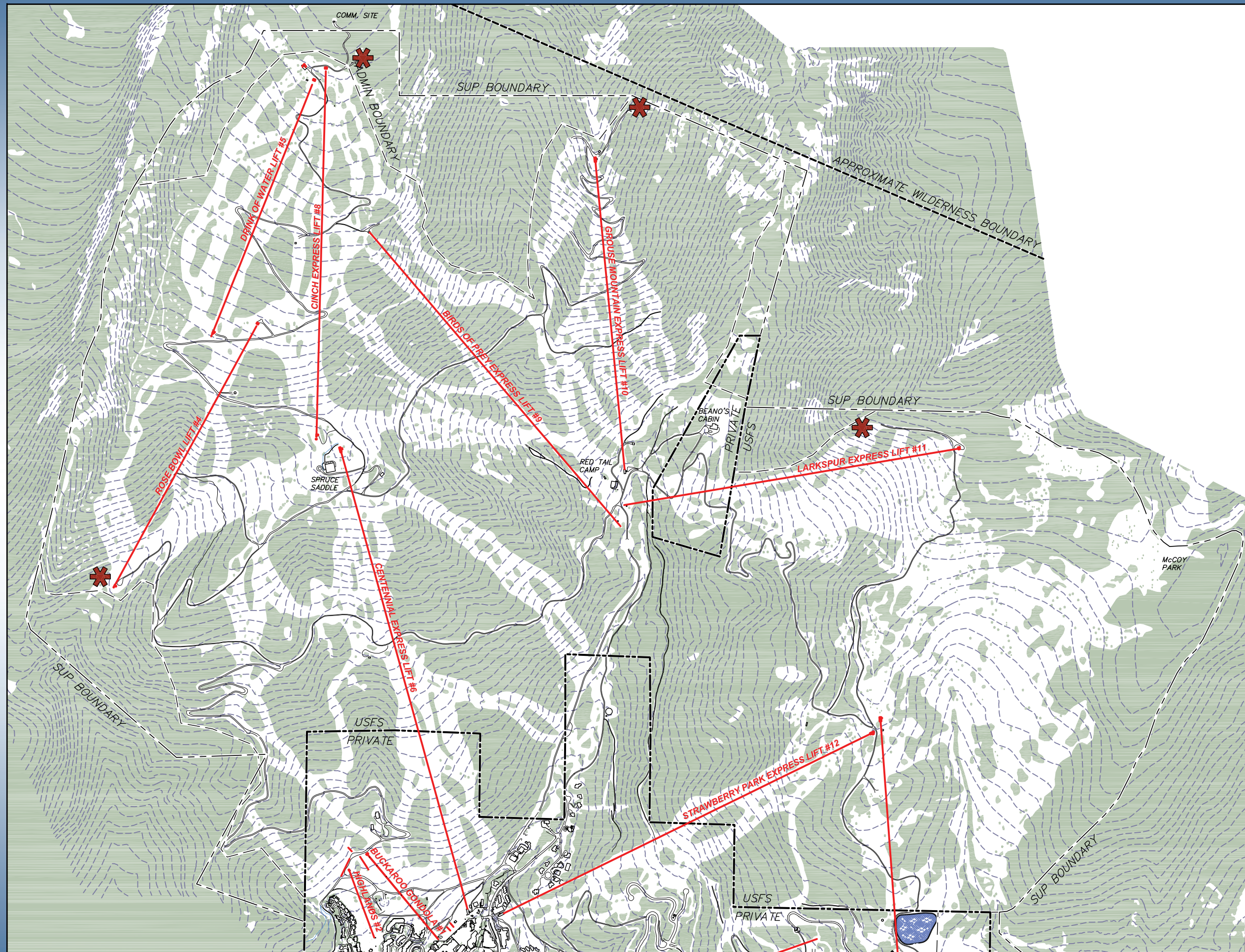
0 750 1500 3000 FEET

PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM



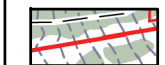


BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 3 - 3

BACKCOUNTRY ACCESS POINTS

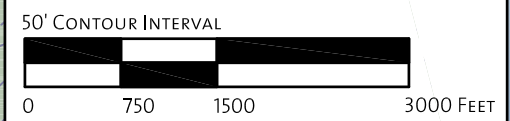
LEGEND



EXISTING LIFTS AND TRAILS



BACKCOUNTRY ACCESS POINT



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM



## **A. CHAIRLIFTS**

There are 23 existing lifts at Beaver Creek, consisting of 2 gondolas, 10 detachable quad “express” chairlifts, 2 fixed-grip triple chairlifts, 2 double chairlifts, 1 surface lift, and 6 conveyor carpets. In addition, there is a transportation gondola that connects the new Riverfront Village in the Town of Avon with the Lower Beaver Creek Mountain Express. This access gondola is not included in lift related calculations, as it does not have skiing directly associated with it. A short summary of Beaver Creek’s lift network follows.

1. The Buckaroo Gondola (Lift #1) was installed in 2007. This gondola was installed in an effort to better facilitate the transportation of children and adult beginner skiers.
2. Highlands Double (Lift #2) is an old lift located on private land.
3. Rose Bowl Triple (Lift #4) is one of the oldest lifts at Beaver Creek (installed as Chair 6 in 1980, relocated as Chair 4 in 1986). It is currently underutilized due to its slow speed and low capacity. However, it serves exciting and interesting terrain that guests would otherwise use.
4. Drink of Water Double (Lift #5) is an older lift that is currently functioning adequately but will need replacing in the future.
5. The Centennial Express (Lift #6) is a primary access lift for the mountain. This 24 year old lift is the primary out of valley lift and serves some of the most popular terrain in Beaver Creek which results in long lines on many days.
6. Cinch Express (Lift #8) functions well.
7. Birds of Prey Express (Lift #9) is a newer lift and is in good condition.
8. Grouse Mountain Express (Lift #10) is an older lift (installed in 1991) but is appropriately located and functions well.
9. Larkspur Express (Lift #11) is a newer lift that is properly located. It is in good condition.
10. Strawberry Park Express (Lift #12) was installed in 1994, and functions well for the use it receives.
11. Elkhorn Triple (Lift #14) is located on private land. It is an old lift with low utilization due to its role as access for homeowners rather than round trip skiing.
12. Lower Beaver Creek Mountain Express (Lift #15) is a newer lift. It is properly located and functions well.
13. Bachelor Gulch Express (Lift #16) is located on private land. This lift currently functions well.
14. Arrow Bahn Express (Lift #17) is located on private land. This is an older lift but functions well and is properly located.



15. Upper Beaver Creek Mountain Express (Lift #18) is a new lift that is located properly and functions well.
16. Cabin Fever (Lift 24) is an older surface lift on private property.
17. BC Magic Carpet (Lift 20) is located on private property and works well in its current location.
18. Bibber Bahn (Lift 21) is located on private property and works well in its current location.
19. Highlands Bahn (Lift 22) is located on private property and works well in its current location.
20. Gold Bahn (Lift 26) is located on private property and works well in its current location.
21. Silver Bahn (Lift 27) is located on private property and works well in its current location.
22. Kerch Bahn (Lift 28) is located on private property and works well in its current location.
23. Haymaker (Lift 29) is a carpet that is primarily used for snowtubing, but does serve a skier transportation role.

Specifications for the existing lifts are set forth in the following table. As indicated previously, the Riverfront Gondola is not included in Table 3-1 because it is not round trip skied.

**TABLE 3-1:  
SKI LIFT SPECIFICATIONS – EXISTING CONDITIONS**

Lift #	Lift Name and Type	Vert. Rise	Slope Length	Avg. Grade	Hourly Capacity	Rope Speed	Carrier Spacing	Type and Year Installed	Guests per Carrier
		(ft.)	(ft.)	(%)	(per/hr.)	(fpm)	(ft.)		
1	Buckaroo Gondola	336	1,712	20%	1,800	600	160	Doppelmayr/2007	8
2	Highlands Double	196	1,195	17%	1,200	300	30	YAN/1976	2
4	Rose Bowl Triple	1,329	4,929	28%	1,689	475	51	Doppelmayr/1980	3
5	Drink of Water Double	795	4,335	19%	1,200	500	50	Doppelmayr/1980	2
6	Centennial Express	2,102	7,735	28%	2,800	984	84	Doppelmayr/1986	4
8	Cinch Express	1,255	5,975	22%	2,400	1,000	100	CTEC/1997	4
9	Birds of Prey Express	2,162	6,453	36%	2,400	1,000	100	Doppelmayr/2004	4
10	Grouse Mountain Express	1,806	5,370	36%	2,400	984	98	CTEC/1991	4
11	Larkspur Express	1,529	5,566	29%	2,400	1,000	100	Doppelmayr/2005	4
12	Strawberry Park Express	1,742	6,912	26%	2,400	984	98	CTEC/1994	4
14	Elkhorn Triple	1,317	5,358	25%	1,246	450	65	Doppelmayr/1980	3
15	Lower BC Mtn Express	907	6,406	15%	2,400	1,000	100	Doppelmayr/2004	4
16	Bachelor Gulch Express	1,447	6,255	24%	2,400	984	98	CTEC/1996	4
17	Arrow Bahn Express	1,713	7,962	22%	2,187	984	108	Doppelmayr/1988	4
18	Upper BC Mtn Express	1,482	8,590	18%	2,400	1,000	100	Doppelmayr/2004	4
20	BC Magic Carpet	6	80	8%	1,500	157	6	Magic Carpet	1
21	Bibber Bahn	6	80	8%	1,500	157	6	Magic Carpet	1

**TABLE 3-1:  
SKI LIFT SPECIFICATIONS – EXISTING CONDITIONS**

Lift #	Lift Name and Type	Vert. Rise	Slope Length	Avg. Grade	Hourly Capacity	Rope Speed	Carrier Spacing	Type and Year Installed	Guests per Carrier
		(ft.)	(ft.)	(%)	(per/hr.)	(fpm)	(ft.)		
22	Highlands Bahn	29	240	12%	1,500	157	6	Magic Carpet	1
23	Ritz Bahn	17	120	7%	1,500	157	6	Magic Carpet	1
24	Cabin Fever	40	338	12%	600	300	30	Doppelmayr/2002	1
26	Gold Bahn	27	300	9%	1,500	157	6	Magic Carpet	1
27	Silver Bahn	10	120	8%	1,500	157	6	Magic Carpet	1
28	Kerch Bahn	13	110	12%	1,500	157	6	Magic Carpet	1
29	Haymaker	47	320	15%	1,500	157	6	Magic Carpet	1

## **B. SKI TERRAIN**

The existing ski terrain at Beaver Creek is comprised of 148 named trails, including maintained and groomed ski trails, skiways and glades. An inventory of all skiable terrain reveals that there is a total of approximately 1,570 acres of formalized lift-served skiable terrain at Beaver Creek. There are also approximately 774 acres of named glades, which increases the total skiable acreage to 2,344 acres.

The formalized ski trail network accommodates the entire range of skier ability levels from beginner to expert. Overall, the trail layout is well conceived, in terms of minimal cross-traffic, lack of skier traffic bottlenecks, and provision of a logical and free-flowing skier circulation.

Table 3-2 outlines the terrain that constitutes Beaver Creek's formal ski trail network.

**TABLE 3-2:  
TERRAIN SPECIFICATIONS – EXISTING CONDITIONS**

Trail Name	Top Elev.	Bottom Elev.	Vert Drop	Slope Length	Avg Width	Area	Avg. Grade	Max Grade	Ability Level
	(ft)	(ft)	(ft)	(ft)	(ft)	(acre)	(%)	(%)	
01 Haymeadow	8,458	8,112	346	1,989	694	31.7	18%	22%	Novice
02 Chair 2	8,399	8,221	178	1,201	367	10.1	15%	25%	Novice
04 Bridle	9,680	9,361	319	2,461	33	1.9	13%	19%	Novice
04 C Prime	10,152	9,649	503	2,175	246	12.3	24%	39%	Intermediate
04 Cataract	10,289	9,807	482	1,295	245	7.3	40%	53%	Adv. Intermediate
04 Ripsaw	10,443	9,360	1,083	4,209	265	25.6	27%	57%	Expert
04 Sheephorn Escape	10,487	10,464	23	858	75	1.5	3%	9%	Beginner
04 Spider	10,399	9,693	706	1,888	197	8.5	40%	55%	Adv. Intermediate
04 Stone Creek Meadows	10,066	9,360	705	3,304	362	27.4	22%	37%	Intermediate
04 Stone Creek Chutes	10,900	9,420	1,480	7,946	987	180.0	32%	85%	Expert
04 Web	9,881	9,535	346	1,077	245	6.1	34%	53%	Adv. Intermediate
05 Booth Gardens	11,419	10,660	759	4,422	209	21.2	17%	32%	Low Intermediate
05 Cinch	10,901	8,108	2,793	30,653	38	26.5	9%	13%	Novice
05 Jack Rabbit Alley	11,404	10,714	690	4,079	66	6.2	17%	27%	Low Intermediate
05 Mystic Island	11,263	11,099	163	824	173	3.3	20%	29%	Low Intermediate
05 Piney	11,289	11,010	279	1,615	189	7.0	18%	26%	Low Intermediate

**TABLE 3-2:  
TERRAIN SPECIFICATIONS – EXISTING CONDITIONS**

Trail Name	Top Elev.	Bottom Elev.	Vert Drop	Slope Length	Avg Width	Area	Avg. Grade	Max Grade	Ability Level
	(ft)	(ft)	(ft)	(ft)	(ft)	(acre)	(%)	(%)	
05 Powell	11,410	10,430	980	5,441	274	34.3	18%	33%	Low Intermediate
05 Red Buffalo	11,418	10,575	843	5,379	201	24.8	16%	28%	Low Intermediate
05 Sheephorn	11,014	10,172	843	3,495	346	27.8	25%	47%	Adv. Intermediate
05 Upper Sheephorn	11,153	11,014	138	793	175	3.2	18%	32%	Low Intermediate
06 Barrel Stave	9,885	9,529	356	1,316	314	9.5	28%	38%	Intermediate
06 1876	8,875	8,319	556	1,842	226	9.5	35%	45%	Intermediate
06 Addy's	9,763	9,374	389	1,092	117	2.9	38%	52%	Adv. Intermediate
06 Assay	8,948	8,378	569	1,905	399	17.5	31%	38%	Intermediate
06 Bear Trap	8,845	8,383	462	1,691	265	10.3	32%	45%	Intermediate
06 Bootleg	8,865	8,388	477	1,295	132	3.9	40%	52%	Adv. Intermediate
06 Buckboard	9,001	8,155	1,095	3,513	148	12.0	31%	46%	Adv. Intermediate
06 Charter Skiway	8,160	7,938	223	2,978	68	4.6	8%	34%	Low Intermediate
06 Creekside	8,122	7,970	152	2,433	84	4.7	6%	29%	Low Intermediate
06 Dally	9,498	8,124	1,374	14,953	4	1.4	9%	24%	Novice
06 Dally Alley	8,911	8,766	144	607	1,939	27.0	25%	32%	Low Intermediate
06 Double Diamond	10,165	9,436	729	2,325	344	18.3	33%	56%	Expert
06 Fool's Gold	9,509	9,085	424	1,389	237	7.6	32%	45%	Intermediate
06 Gold Rush	9,078	8,898	180	428	2,566	25.2	46%	48%	Adv. Intermediate
06 Half- Barrell Half Pipe	9,945	9,733	212	923	270	5.7	24%	32%	Low Intermediate
06 Half Hitch	10,167	9,526	641	2,144	169	8.3	32%	52%	Adv. Intermediate
06 Harrier	10,118	8,550	1,568	5,129	321	37.8	32%	56%	Expert
06 Highlands Skiway	8,229	8,144	85	768	39	0.7	11%	21%	Novice
06 Latigo	10,178	8,458	1,720	8,221	194	36.7	22%	74%	Expert
06 Meadows	8,368	8,243	125	2,043	35	1.6	6%	20%	Novice
06 Moonshine	9,124	8,410	713	2,491	251	14.3	30%	60%	Expert
06 Nastar Ski Racing	9,324	8,845	478	2,128	345	16.9	23%	35%	Low Intermediate
06 Redtail	10,131	8,872	1,259	4,638	418	44.5	28%	42%	Intermediate
06 West Fall Road	10,079	9,745	334	4,456	32	3.3	8%	16%	Novice
08 Centennial	11,433	8,139	3,293	14,644	247	83.2	23%	47%	Adv. Intermediate
08 Park101_Flattops	11,404	11,024	380	2,650	168	10.2	15%	23%	Novice
08 Zoom Room	11,421	11,081	340	2,486	119	6.8	14%	24%	Novice
09 Golden Eagle	11,129	8,938	2,191	7,160	246	40.5	34%	70%	Expert
09 Goshawk	10,995	9,489	1,505	4,416	245	24.9	37%	66%	Expert
09 Peregrine	10,995	9,183	1,811	4,926	222	25.1	40%	58%	Expert
09 Utility Corridor	9,237	8,925	312	2,189	80	4.0	14%	25%	Low Intermediate
10 Bald Eagle	10,685	9,043	1,642	4,411	156	15.8	42%	65%	Expert
10 Camprobbler Road	10,690	9,734	955	8,035	15	2.8	12%	19%	Novice
10 Falcon Park	10,100	9,037	1,063	2,878	128	8.5	51%	56%	Expert
10 Osprey	10,161	9,207	954	3,541	221	18.0	38%	65%	Expert
10 Ptarmigan	9,939	8,964	975	3,472	175	14.0	41%	60%	Expert
10 Raven Ridge	10,686	8,903	1,783	6,162	248	35.1	34%	50%	Adv. Intermediate
10 Ruffed Grouse	9,802	8,970	832	2,888	179	11.9	44%	66%	Expert

**TABLE 3-2:  
TERRAIN SPECIFICATIONS – EXISTING CONDITIONS**

Trail Name	Top Elev.	Bottom Elev.	Vert Drop	Slope Length	Avg Width	Area	Avg. Grade	Max Grade	Ability Level
	(ft)	(ft)	(ft)	(ft)	(ft)	(acre)	(%)	(%)	
10 Screech Owl	10,674	9,841	833	2,451	311	17.5	36%	54%	Adv. Intermediate
11 Bluebell	9,490	8,927	562	2,696	161	10.0	25%	44%	Intermediate
11 Loco	10,220	9,116	1,104	3,053	205	14.4	39%	59%	Expert
11 Lupine	10,287	9,976	311	965	307	6.8	43%	50%	Adv. Intermediate
11 Paintbrush	9,496	8,960	537	2,741	181	11.4	23%	50%	Adv. Intermediate
11 Primrose	10,369	9,112	1,256	15,829	48	17.4	8%	20%	Novice
11 S. Star	10,369	9,809	560	2,520	122	7.1	23%	55%	Adv. Intermediate
11 Three Tree Gully	10,023	9,494	529	2,228	78	4.0	25%	48%	Adv. Intermediate
11 Yarrow	10,228	9,312	916	3,511	453	36.5	29%	55%	Adv. Intermediate
12 Bitterroot	9,985	8,980	1,005	6,889	143	22.6	15%	42%	Intermediate
12 Overshot	9,512	9,324	188	1,886	52	2.3	10%	17%	Novice
12 Pitchfork	9,791	8,105	1,686	6,568	270	40.8	27%	44%	Intermediate
12 Stacker_lower	8,412	8,110	302	1,240	778	22.1	25%	39%	Intermediate
14 Boarders Loop	8,615	7,974	641	4,258	79	7.7	15%	36%	Intermediate
14 Gee	8,124	8,036	87	283	105	0.7	33%	40%	Intermediate
14 Haw	8,190	8,041	149	448	112	1.2	35%	38%	Intermediate
14 Homerun	8,563	8,185	379	1,395	132	4.2	28%	42%	Intermediate
14 Lamplighter	9,346	9,270	76	1,446	57	1.9	5%	29%	Low Intermediate
14 Maverick	9,262	8,929	333	3,417	73	5.7	10%	23%	Novice
14 McCoy	8,919	7,870	1,050	4,612	94	9.9	23%	37%	Intermediate
14 Meander	9,308	9,252	56	493	84	0.9	11%	19%	Novice
14 Pines Skiway	8,278	8,066	212	1,377	69	2.2	16%	21%	Novice
14 Second Chance	9,008	8,207	801	7,445	60	10.2	11%	31%	Low Intermediate
14 Settler's Way	8,980	7,977	1,003	4,195	149	14.4	25%	50%	Adv. Intermediate
14 Solitaire	9,120	9,052	68	1,131	35	0.9	6%	24%	Novice
15 Leav the Beav	8,107	7,511	596	6,014	81	11.2	10%	25%	Low Intermediate
16 Anderson's Alley	8,226	7,939	288	4,346	24	2.4	7%	32%	Low Intermediate
16 Bedstraw	8,679	8,153	525	3,453	65	5.1	16%	51%	Adv. Intermediate
16 Cabin Fever	9,552	8,135	1,417	8,002	202	37.1	18%	37%	Intermediate
16 Easy Come _Easy Go	8,900	8,757	143	1,270	35	1.0	11%	28%	Low Intermediate
16 Elkhorn	8,397	7,601	796	7,860	53	9.6	10%	39%	Intermediate
16 Grubstake	9,551	8,420	1,132	4,287	181	17.8	27%	48%	Adv. Intermediate
16 Gunder's	9,556	8,214	1,342	5,441	187	23.4	26%	40%	Intermediate
16 Holden	8,185	7,982	203	2,239	27	1.4	9%	22%	Novice
16 Homefire	8,296	8,226	70	622	45	0.6	11%	28%	Low Intermediate
16 Intertwine	9,550	8,110	1,440	12,193	51	14.2	12%	38%	Intermediate
16 Legacy	8,334	8,209	125	1,608	31	1.1	8%	21%	Novice
16 Ridge Point	7,767	7,651	115	1,895	34	1.5	6%	30%	Low Intermediate
16 Rubarb	8,247	8,003	244	3,442	40	3.1	7%	36%	Intermediate
16 Sawbuck	9,437	8,504	932	4,554	287	30.1	21%	36%	Intermediate
16 Stirrup	9,350	8,420	930	8,933	35	7.2	9%	15%	Novice
16 Tall Timber	8,366	8,216	150	1,178	34	0.9	13%	29%	Low Intermediate

**TABLE 3-2:  
TERRAIN SPECIFICATIONS – EXISTING CONDITIONS**

Trail Name	Top Elev.	Bottom Elev.	Vert Drop	Slope Length	Avg Width	Area	Avg. Grade	Max Grade	Ability Level
	(ft)	(ft)	(ft)	(ft)	(ft)	(acre)	(%)	(%)	
17 Bear Paw	8,517	8,497	20	1,155	26	0.7	2%	26%	Low Intermediate
17 Cold Snap	8,531	8,487	44	451	26	0.3	10%	18%	Novice
17 Cresta	9,094	7,409	1,685	8,379	161	30.9	21%	47%	Adv. Intermediate
17 Crossbow	9,017	8,982	36	300	186	1.3	12%	13%	Novice
17 Everkrisp	8,332	8,276	56	682	40	0.6	8%	16%	Novice
17 Flint	7,831	7,538	293	1,079	229	5.7	29%	55%	Adv. Intermediate
17 Golden Bear	9,010	7,476	1,534	6,606	233	35.3	24%	43%	Intermediate
17 Homeowner Skiway	8,321	7,976	345	3,700	20	1.7	9%	19%	Novice
17 Larkspur	10,364	8,886	1,478	6,060	411	57.1	28%	45%	Intermediate
17 Little Brave	8,992	7,584	1,408	7,501	113	19.4	19%	38%	Intermediate
17 Piece O' Cake	9,110	7,605	1,505	15,524	18	6.5	10%	35%	Intermediate
17 Pow Wow	8,980	8,555	425	2,346	187	10.1	18%	26%	Low Intermediate
17 Ridge Rider	8,465	8,203	262	3,224	72	5.3	8%	25%	Low Intermediate
17 Roughlock	8,638	8,122	516	3,092	91	6.4	17%	39%	Intermediate
17 Springtooth	8,855	8,523	332	1,768	79	3.2	19%	37%	Intermediate
17 Tomahawk	8,534	7,542	992	3,843	104	9.1	27%	49%	Adv. Intermediate
17 Wapti	9,080	8,109	971	4,024	133	12.3	25%	49%	Adv. Intermediate
18 BC Mtn Expressway	9,849	8,862	987	11,019	58	14.7	9%	15%	Novice
20 Beginner Terrain			6	80	100	0.2	8%	9%	Beginner
21 Beginner Terrain			6	80	120	0.2	8%	10%	Beginner
22 Beginner Terrain			29	240	110	0.6	12%	12%	Beginner
23 Beginner Terrain			17	120	140	0.4	7%	9%	Beginner
24 Beginner Terrain			40	338	160	1.3	12%	12%	Beginner
26 Beginner Terrain			27	300	130	0.9	9%	10%	Beginner
27 Beginner Terrain			10	120	90	0.2	8%	11%	Beginner
28 Beginner Terrain			13	110	120	0.3	12%	12%	Beginner
29 Beginner Terrain			47	320	160	1.2	15%	12%	Beginner
<b>TOTAL</b>				<b>468,545</b>		<b>1,758.2</b>			

The following table and charts illustrate the distribution of terrain by skier ability level for the developed trail network, as well as the distribution of the active skier population at Beaver Creek. The terrain distribution is compared to the industry norm for terrain distribution.

**TABLE 3-3:  
TERRAIN CAPACITY DISTRIBUTION BY ABILITY LEVEL – EXISTING CONDITIONS**

Skier/Rider Ability Level	Trail Area	Skier/Rider Capacity	Skier/Rider Distribution	Skier/Rider Market
	(acres)	(guests)	(%)	(%)
Beginner	6.8	169.3	1.8%	5%
Novice	154.8	1858.2	20.0%	15%
Low Intermediate	208.7	1669.4	18.0%	25%
Intermediate	503.3	3019.6	32.5%	35%
Adv. Intermediate	398.9	1595.8	17.2%	15%
Expert	485.7	971.5	10.5%	5%
<b>TOTAL</b>	1758.2	9,284	100%	100%

**CHART 3-1:  
TERRAIN CAPACITY DISTRIBUTION BY ABILITY LEVEL – EXISTING CONDITIONS**

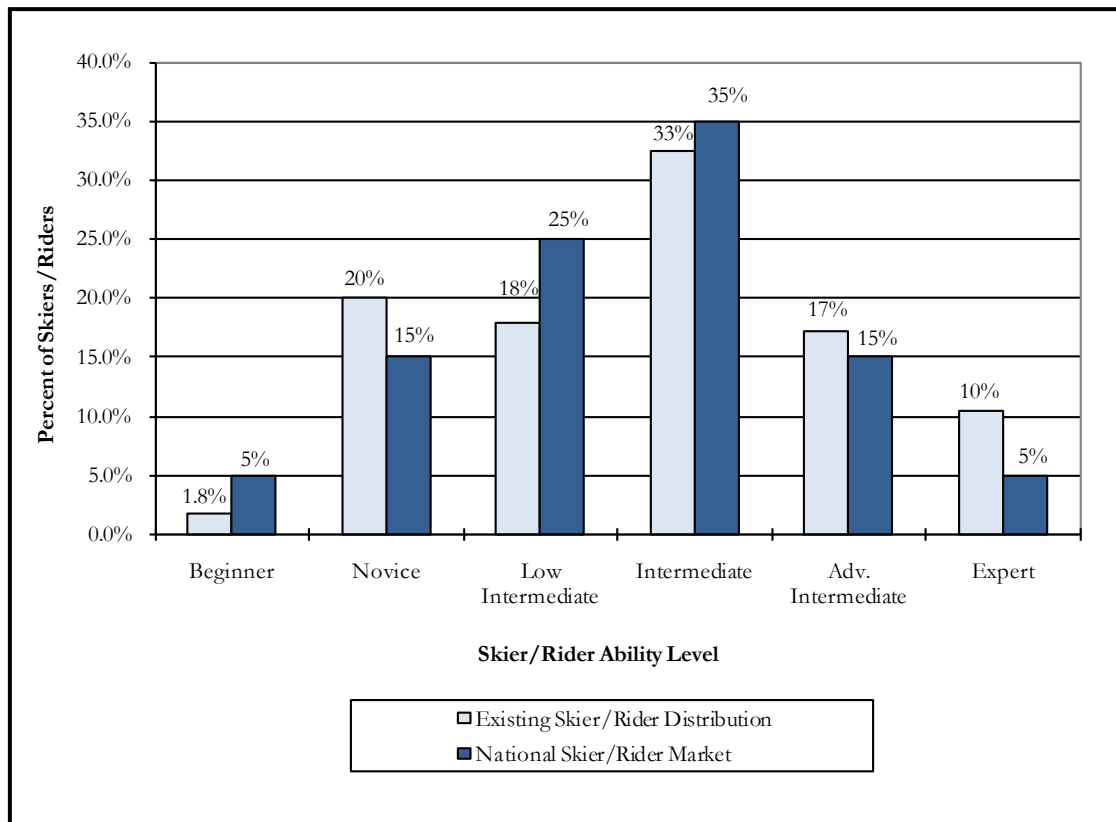


Table 3-3 indicates Beaver Creek has a notable deficiency in beginner and low intermediate and a slight deficiency of intermediate terrain. It has an abundance of novice, advanced intermediate and expert terrain compared to the market norms. Additionally, the beginner terrain associated with Chair 5 at the top of the mountain can be affected by high winds, making it less than ideal for novice skiers.

## **C. TERRAIN PARKS**

There are currently four terrain parks and a half pipe at Beaver Creek. These locations, and features within them, are subject to change from year-to-year.

Park 101 is an entry level park featuring rollers, dots, and rails that let lower level riders and skiers learn weighting and unweighting of boards and skis. Park 101 is located adjacent to the top terminal of the Cinch Express on upper Flattops.

Zoom Room is a progressive park, beginning with small introductory features such as rollers, tables, and rails, and graduating to larger features toward the end of the park. Zoom Room is also located to the west of the top terminal of the Cinch Express on upper Golden Eagle.

The Lumber Yard is an intermediate series of hits and rails. It is located below Spruce Saddle on upper Latigo above Cinch.

The Rodeo is Beaver Creek's most difficult park, featuring large tables, rails, jumps and logslides. The Rodeo is located in the Centennial Express lift pod on Buckboard.

The half pipe is located on upper Latigo below Cinch.

## **D. RACE VENUES**

Vail/Beaver Creek hosted the 1989 and 1999 World Alpine Ski Championships, and has been a part of the annual FIS Alpine World Cup race circuit since its inception in 1967. Since 1999, Beaver Creek has hosted the Birds of Prey™ World Cup Downhill ski race, which is on the Golden Eagle trail. Historically, the resort has hosted men's Giant Slalom, Super G, and Slalom races on the Birds of Prey™ course, as well. Notably, this is one of the few World Cup courses in the United States, and it is considered one of the premier courses on the World Cup circuit.

The Red Tail Camp facility provides guest services at the finish area of the Birds of Prey™ course, and a race building and commentator booths are permanently located at the finish line. A TV/Media compound is also located on the southwestern portion of Red Tail Camp that is used for events coverage. Temporary infrastructure is brought in for specific race events, including bleacher seating, video screens and additional tents for guest services. A temporary storage building is located at the top of the Birds of Prey Express for race-related equipment. Because this storage space is not adequate given current demand, a temporary structure (i.e., tent) is utilized at the starting area during race events.

## **E. RESORT CAPACITY**

### **1. Beaver Creek's Manage-To Process**

Beaver Creek's current Manage-To number is 11,000 skiers-at-one-time. This is derived from a combination of the 1976 Environmental Assessment Report, which approved Beaver Creek for 9,000 skiers at one time, and the Eagle County approval of the Arrowhead Ski Area for 2,000 skiers at one time. Both approvals were made before the advent of detachable lift technology, which greatly improved the ability to transport skiers. The recent installation of the lift out of Avon to Beaver Creek, and the improved skier transportation from Avon to Arrowhead, Bachelor Gulch and



the Beaver Creek village, have greatly improved access and distribution onto the mountain which in turn increases the mountain's ability to accommodate more guests.

The 11,000 number is currently exceeded a few times a year, especially during peak holiday times. As discussed in Chapter 2, Beaver Creek's goal for providing a high quality guest experience is – in part – possible because its Manage-To number is (by design) less than its calculated CCC.

## 2. Comfortable Carrying Capacity

At Beaver Creek, while the Manage-To threshold of 11,000 provides the goal for the resort as a whole and is used to manage daily visitation numbers, the ski area's CCC continues to represent the mountain facility's comfortable capacity. Beaver Creek desires to maintain a CCC in excess of the Manage-To threshold in order to ensure uncrowded trails, short lift lines and excellent guest service levels that provide a consistently great guest experience for all levels of guests. This is consistent with the resort's goal to maintain or improve its position as one of the top family ski destinations in the world.

As illustrated below in Table 3-4, the calculated CCC of the lift and trail network at Beaver Creek is 15,320 guests per day. Again, the CCC at Beaver Creek is not utilized to determine size of facilities, nor to manage skier numbers, but rather is a theoretical planning number that indicates that the mountain's capacity is in excess of the resort's Manage-To threshold, which directly translates to increased quality through lower skier densities and shorter lift lines.

The calculation of Beaver Creek's current CCC is described in the following table.

**TABLE 3-4:  
CALCULATION OF COMFORTABLE CARRYING CAPACITY – EXISTING CONDITIONS**

Lift #	Lift Name	Slope Length	Vert. Rise	Hourly Capacity	Oper. Hours	Transport Reduction Factor <sup>a</sup>	Misload. Stopping	Adjusted Hourly Capacity	VTF/ Day	Vert. Demand	CCC
		(ft.)	(ft.)	(per/hr.)	(hrs)	(%)	(%)	(per/hr)	(000)	(ft./day)	(guests)
1	Buckaroo Gondola	1,712	336	1,800	7.00	30	5	1,170	2,752	5,241	530
2	Highlands Double	1,195	196	1,200	7.00	0	10	1,080	1,482	3,303	450
4	Rose Bowl Triple	4,929	1,329	1,689	7.00	0	10	1,520	14,141	15,991	880
5	Drink of Water Double	4,335	795	1,200	7.00	0	10	1,080	6,010	7,260	830
6	Centennial Express	7,735	2,102	2,800	7.00	10	5	2,380	35,019	21,835	1,600
8	Cinch Express	5,975	1,255	2,400	7.00	0	5	2,280	20,030	16,190	1,240
9	Birds of Prey Express	6,453	2,162	2,400	7.00	0	5	2,280	34,506	27,816	1,240
10	Grouse Mountain Express	5,370	1,806	2,400	7.00	0	5	2,280	28,824	26,760	1,080
11	Larkspur Express	5,566	1,529	2,400	7.00	0	5	2,280	24,403	17,729	1,380
12	Strawberry Park Express	6,912	1,742	2,400	7.00	10	5	2,040	24,876	16,840	1,480
14	Elkhorn Triple	5,358	1,317	1,246	7.00	90	8	25	230	5,518	40
15	Lower BC Mtn Express	6,406	907	2,400	7.00	90	5	120	762	9,375	80
16	Bachelor Gulch Express	6,255	1,447	2,400	7.00	5	5	2,160	21,879	15,201	1,440
17	Arrow Bahn Express	7,962	1,713	2,187	7.00	20	5	1,640	19,669	14,688	1,340

**TABLE 3-4:  
CALCULATION OF COMFORTABLE CARRYING CAPACITY – EXISTING CONDITIONS**

Lift #	Lift Name	Slope Length	Vert. Rise	Hourly Capacity	Oper. Hours	Transport Reduction Factor <sup>a</sup>	Misload. Stopping	Adjusted Hourly Capacity	VTF/Day	Vert. Demand	CCC
		(ft.)	(ft.)	(per/hr.)	(hrs)	(%)	(%)	(per/hr)	(000)	(ft./day)	(guests)
18	Upper BC Mtn Express	8,590	1,482	2,400	7.00	80	5	360	3,735	11,948	310
20	BC Magic Carpet	80	6	1,500	7.00	0	10	1,350	60	537	110
21	Bibber Bahn	80	6	1,500	7.00	0	10	1,350	60	521	120
22	Highlands Bahn	240	29	1,500	7.00	0	10	1,350	272	1,426	190
23	Ritz Bahn	120	17	1,500	7.00	0	10	1,350	161	1,191	140
24	Cabin Fever	338	40	600	7.00	0	10	540	151	1,261	120
26	Gold Bahn	300	27	1,500	7.00	0	10	1,350	255	1,165	220
27	Silver Bahn	120	10	1,500	7.00	0	10	1,350	91	673	140
28	Kerch Bahn	110	13	1,500	7.00	0	10	1,350	125	958	130
29	Haymaker	320	47	1,500	7.00	.75	10	1,350	444	1,945	230
	<b>TOTAL</b>	86,461		43,922				34,035	239,937		15,320

<sup>a</sup> Transportation Reduction Factor (Access Reduction) – A percentage factor by which a lift’s effective hourly capacity is reduced to account for the lift’s role in transporting skiers from one area of the mountain to another. The application of a Transportation Reduction Factor means that a portion of the lift’s uphill hourly capacity, which is required for skier access to other points on the mountain, will not be used for repeat-ski access to ski trails served by the lift.

## F. RESORT DENSITY ANALYSIS

At any one time, the aggregate skier population is dispersed throughout a given resort, either at guest services buildings and milling areas, waiting in lift mazes, riding lifts, or on the trails. The proportion of skiers/riders that could be using the trail network at any given time, based upon the CCC calculation, is illustrated in Table 3-5, below. The total number of skiers/riders using the trail network at any one time can be compared to the estimated *capacity* of the ski terrain (as determined in Table 3-3) to determine if a sufficient amount of terrain has been planned to balance trail capacity with the overall CCC.

Depending on the time of day, of the total skier population, between 15 to 40 percent of each lift’s capacity can be assumed to be using guest service facilities or milling areas at any one time. I.e., over the course of the day, skiers will be actively skiing 60 to 85 percent of the time—the equivalent of four to six hours). This 15 to 40 percent of the skier population is the resort’s inactive population.

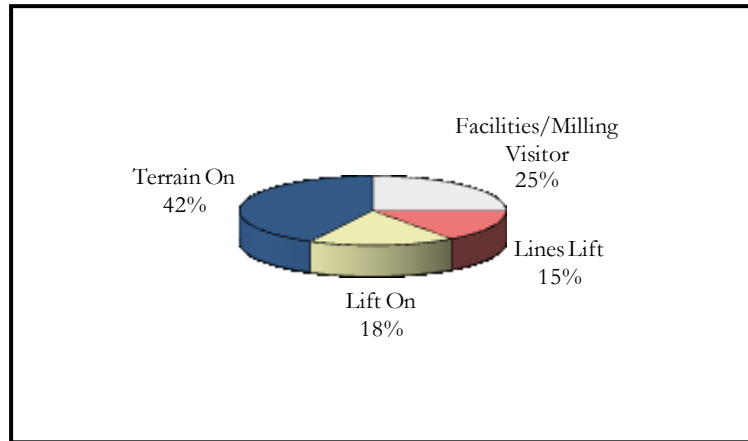
The remaining 60 to 85 percent of skiers/riders make up the active skier population who are either in lift lines, on lifts, or on trails. Typically, 25 to 60 percent of a resort’s active skier/rider population is assumed to be on the slopes while the remainder will be riding lifts, waiting in lift lines, or using guest service facilities. The number of guests 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. (For purposes of master planning, lift lines at Beaver Creek have been estimated to range from two to ten minutes.) The number of guests riding on each lift is the product of the speed of the chair, the number of carriers on the uphill line and the capacity of the lift’s carriers.

Based upon an estimated CCC of 15,320 guests, the estimated disbursement of Beaver Creek's skiers is illustrated in the following table and chart.

**TABLE 3-5:  
DISTRIBUTION OF SKIER POPULATION – EXISTING CONDITIONS**

Lift #	Lift Name	Daily Capacity	Disbursement of Skier/Rider Population			
			Support Fac./Milling	Lift Lines	On Lift	On Terrain
		(CCC)	(guests)	(guests)	(guests)	(guests)
1	Buckaroo Gondola	530	133	98	56	243
2	Highlands Double	450	113	90	72	175
4	Rose Bowl Triple	880	220	127	263	270
5	Drink of Water Double	830	208	90	156	376
6	Centennial Express	1,600	400	198	312	690
8	Cinch Express	1,240	310	190	227	513
9	Birds of Prey Express	1,240	310	190	245	495
10	Grouse Mountain Express	1,080	270	190	207	413
11	Larkspur Express	1,380	345	190	212	633
12	Strawberry Park Express	1,480	370	170	239	701
14	Elkhorn Triple	40	10	1	5	24
15	Lower BC Mtn Express	80	20	10	13	37
16	Bachelor Gulch Express	1,440	360	180	229	671
17	Arrow Bahn Express	1,340	335	137	221	647
18	Upper BC Mtn Express	310	78	30	52	150
20	BC Magic Carpet	110	28	45	11	26
21	Bibber Bahn	120	30	45	11	34
22	Highlands Bahn	190	48	45	34	63
23	Ritz Bahn	140	35	45	18	42
24	Cabin Fever	120	30	45	10	35
26	Gold Bahn	220	55	45	43	77
27	Silver Bahn	140	35	45	17	43
28	Kerch Bahn	130	33	45	16	36
29	Haymaker	230	58	45	48	79
	<b>TOTAL</b>	<b>15,320</b>	<b>3,834</b>	<b>2,296</b>	<b>2,717</b>	<b>6,473</b>

**CHART 3-2:  
DISTRIBUTION OF SKIER POPULATION – EXISTING CONDITIONS**



The table and chart show that of the total 15,320 CCC, 6,473 skiers/riders (46 percent) are anticipated to be on Beaver Creek's trails at one time (a proportion that falls within the typical 25 to 60 percent range). As calculated in Table 3-3, the existing trail network has an estimated skier capacity of 9,284. This illustrates that the trail capacity far exceeds the proportion of the CCC on the terrain at any given time, resulting in low terrain density. This is in keeping with Beaver Creek's goal of providing a high quality recreational experience.

## **G. MAINTENANCE FACILITIES/MOUNTAIN OPERATIONS, SNOWMAKING, AND UTILITIES**

### **1. Maintenance and Operational Facilities**

Wheeled vehicle and snowcat maintenance is undertaken at the Service Center, located at the base of the mountain adjacent to the Dally trail. On mountain fueling currently takes place at World Cup Storage and near the top of Chair 12.

Beaver Creek's Lift Maintenance department has facilities at the Service Center, at the top terminal of the River Front Gondola and at the Trappers Pump House.

Due to the location of maintenance facilities, Beaver Creek is not currently able to provide minor on-mountain maintenance of snowcats without having to return to the Service Center located at the base area. This results in vehicular traffic between the mountain and base area on a regular basis.

There are two storage buildings—World Cup and Mountain—below Spruce Saddle and west of Centennial, respectively. On-mountain fuel storage is located at Spruce Saddle.

Mountain operations offices are located in the Service Center. The lower patrol room is located in Beaver Creek Village. Ski School has facilities at Beaver Creek Village, Bachelor Gulch Village, at the base of Arrowhead, and at Spruce Saddle.

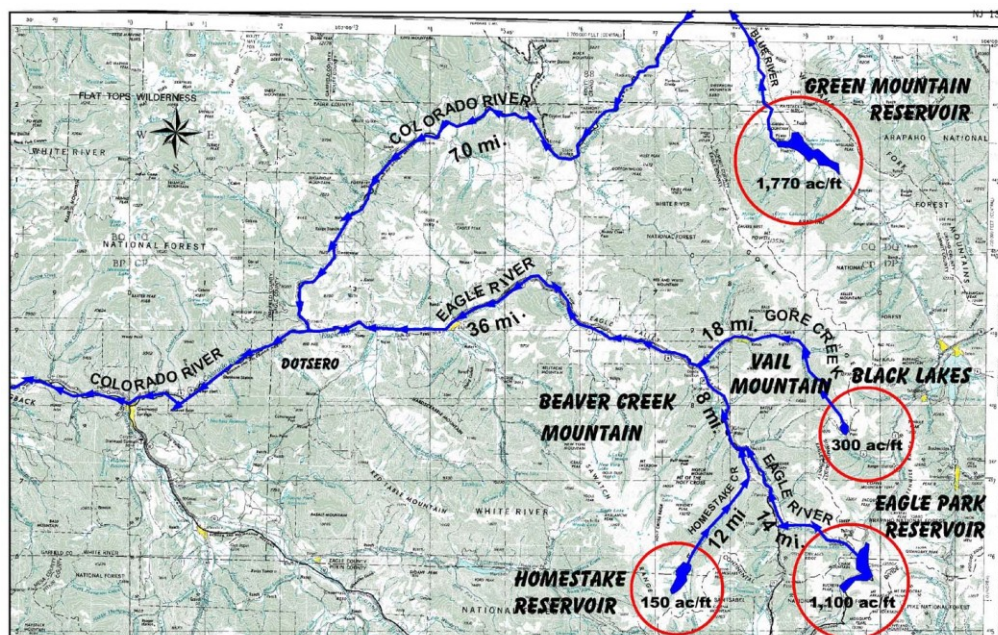
## 2. Snowmaking

Beaver Creek's snowmaking operations are intended to enhance the reliability and consistency of the snow surface in response to site-specific operational concerns, including but not limited to, below average natural snowfall, high snow wear areas, critical circulation routes and areas with high wind, and/or solar exposure. Guests may choose to ski Beaver Creek over other resorts because of the consistency and reliability of its high quality ski surfaces. This high quality ski surface is afforded in part by Beaver Creek's snowmaking system. The snowmaking system at Beaver Creek helps ensure a predictable opening date, high quality conditions during the early- and mid-season, and to provide reliable conditions through mid-April.

The snowmaking system at Beaver Creek covers a total of 648 acres of terrain (approximately 40 percent of its developed terrain network). Roughly 331 acres are on private land and 317 acres are on USFS land (see Figure 3-6 Existing Snowmaking, Lower Mountain and Figure 3-7 Existing Mountain, Upper Mountain).<sup>3</sup> Additionally Beaver Creek has a 130-acre foot reservoir located on the Western Hillside (private land).

Snowmaking pumphouses and compressor buildings are located at the base of Buckboard, on Golden Eagle, at the top of the Haymeadow trail, in Horseshoe Park, in Arrowhead on the Little Brave trail, and Trapper's Station near Trapper's Cabin in Bachelor Gulch. Pump stations are also located at Eagle River and the Beaver Creek golf course.

Water for snowmaking is supplied by the Green Mountain Reservoir by exchange, Eagle Park and Homestake reservoirs, and by Black Lakes. The locations and quantity of water available to Vail Resorts in storage at each location is illustrated in the image below.



<sup>3</sup> Snowmaking acreage has been computer generated from digital mapping and assumes the full trail width coverage of developed ski trails and full groomable width on catwalks. These area calculations differ from previous calculations due to updated cartography and that the existing system reflects full trail width coverage.

### **3. Utilities**

#### **Wastewater**

Wastewater generated at Beaver Creek Resort is piped to, and treated by, the Eagle River Water and Sanitation District in their plant within the Town of Avon and at their Edward's Plant. On-site septic systems are utilized at Patrol Headquarters. Refer to figures 3-4 and 3-5 for sewer line locations.

#### **Domestic Water**

Domestic water is supplied to the base area and on mountain facilities by the Upper Eagle River Water Authority. Refer to Figure 3-5 for tank locations.

#### **Communication Sites**

The communication site on Beaver Creek Mountain northeast of Patrol Headquarters is owned and operated by Holy Cross Electric.

#### **Power**

Electric power is supplied to Beaver Creek by Holy Cross Electric.

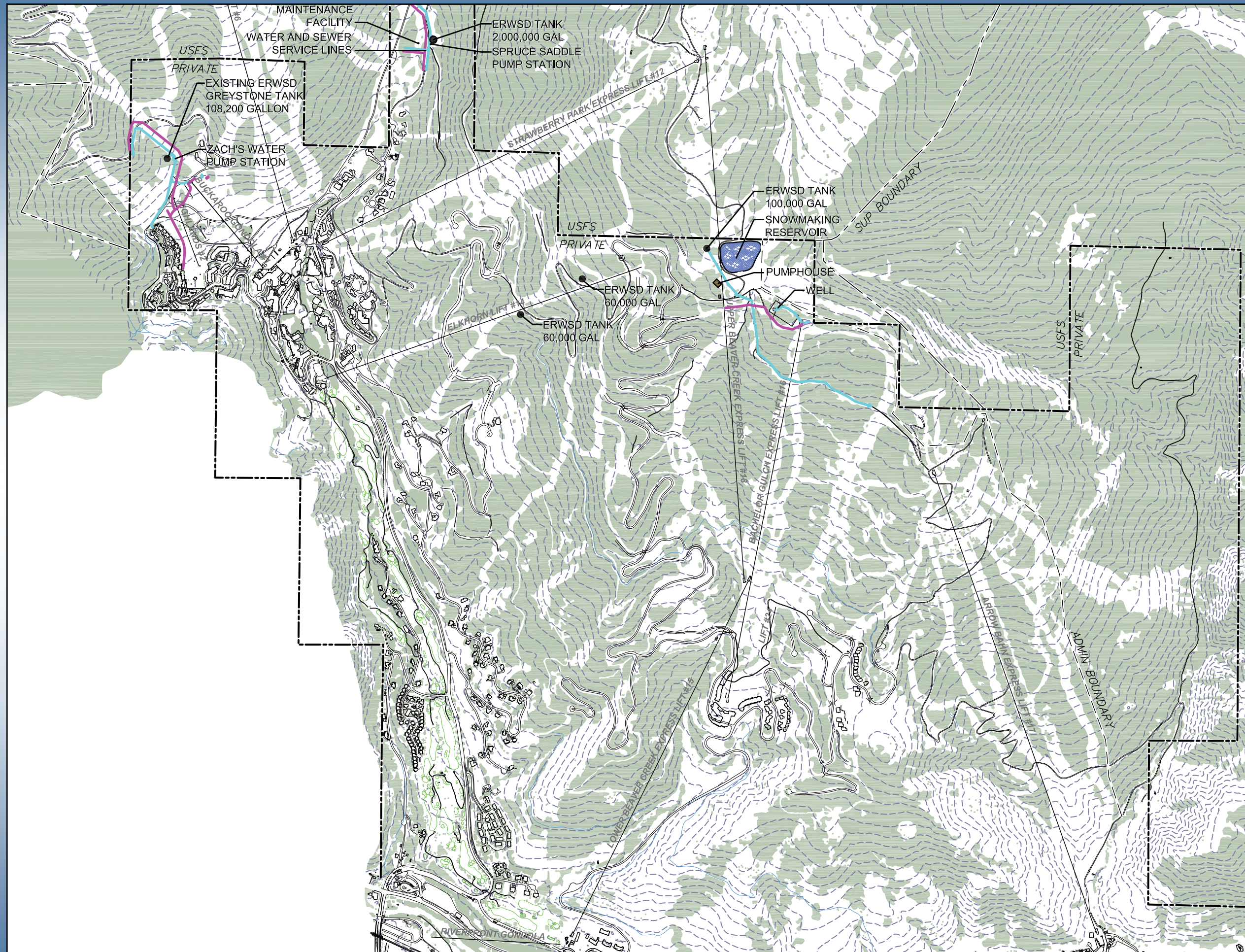
#### **Water Rights**

The following is a summary of the fully consumable snowmaking water available to Vail Associates from its portfolio of water rights for use at the Vail and Beaver Creek Ski Areas:

1. 1,100 acre feet – Eagle Park Reservoir (Case Nos. 92CW340, 95CW348, 98CW203 and 03CW211)\*
2. 271 acre feet – Homestake Reservoir water (Case No. 98CW270)
3. 603 acre feet – Gore Creek Snowmaking Pipeline (Case No. 82CW328)
4. 1,754 acre feet – Green Mountain Reservoir (Case Nos. 88CW456, 89CW201, 89CW296 and 94CW279)
5. 130 acre feet – Beaver Creek Snowmaking Reservoir (Case Nos. 94CW303 and 99CW90)
6. 32 acre feet – Beaver Creek reserved consumptive use water (Case Nos. W-2746, 80CW26 and 85CW608)
7. Total = 3,890 acre feet.

\*All case numbers refer to the District Court in and for Water Division No. 5, State of Colorado.





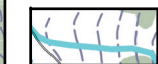


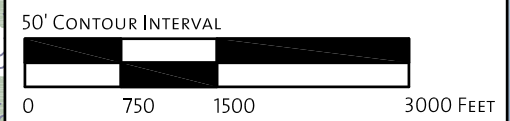
BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 3 - 4

EXISTING DOMESTIC  
WATER AND SANITATION FACILITIES  
LOWER MOUNTAIN

LEGEND

-  EXISTING LIFTS AND TRAILS
-  EXISTING SEWER LINE
-  EXISTING WATER LINE



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM



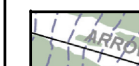


BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 3 - 5

EXISTING DOMESTIC  
WATER AND SANITATION FACILITIES  
UPPER MOUNTAIN

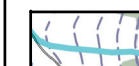
LEGEND



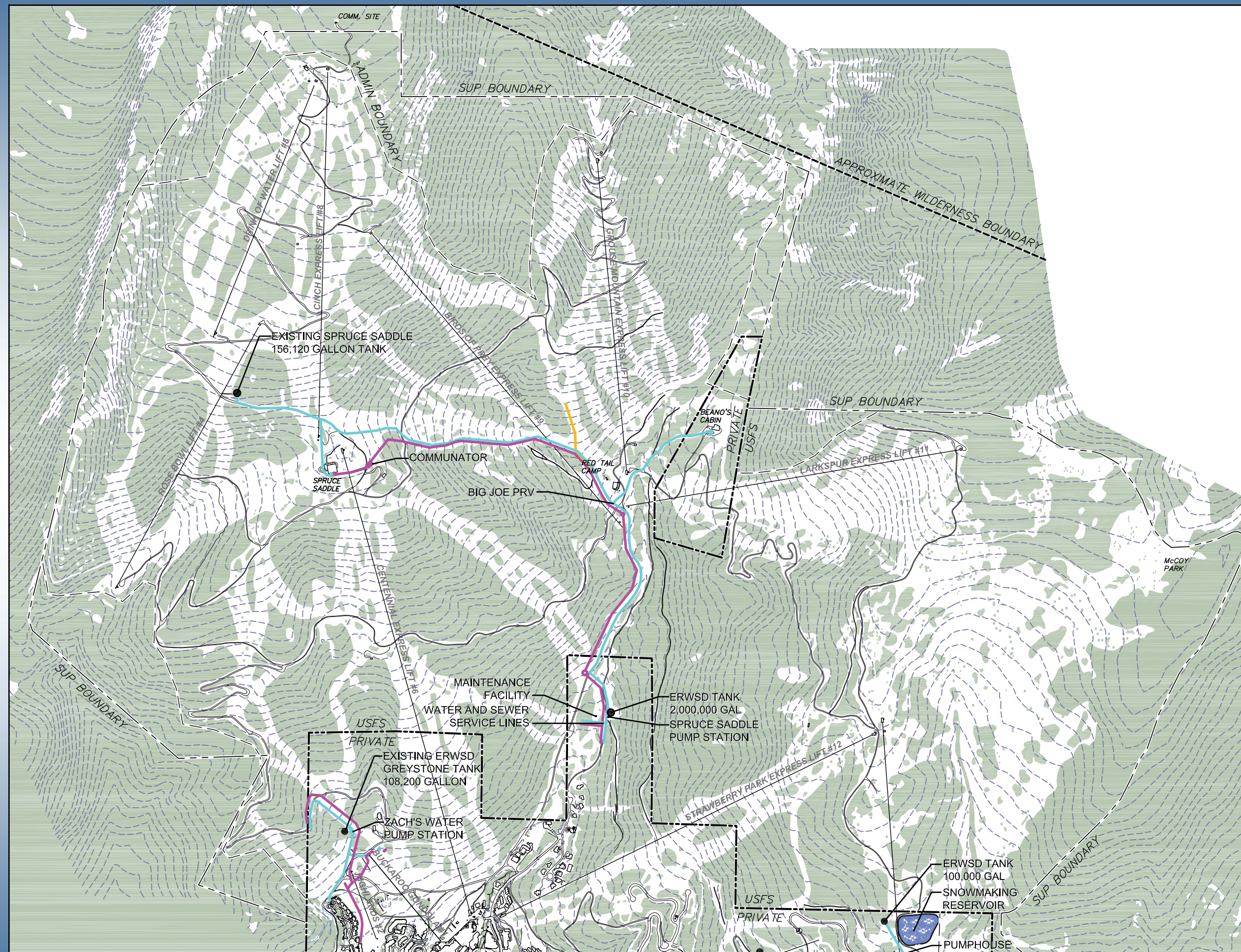
EXISTING LIFTS AND TRAILS



EXISTING SEWER LINE



EXISTING WATER LINE



50' CONTOUR INTERVAL

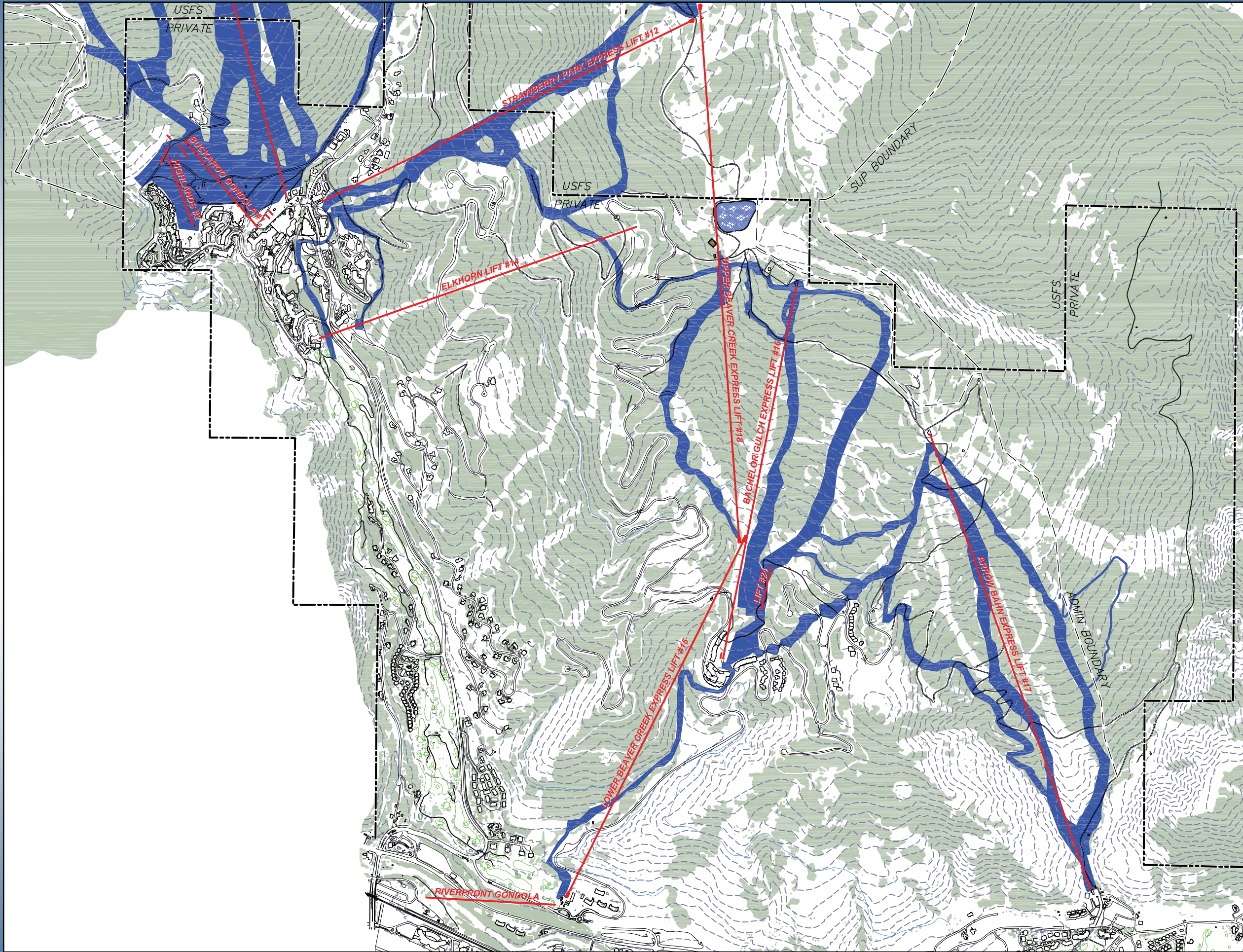


PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM



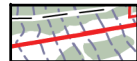



BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

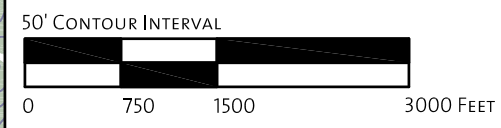
FIGURE 3 - 6

EXISTING SNOWMAKING  
LOWER MOUNTAIN

**LEGEND**

 EXISTING LIFTS AND TRAILS

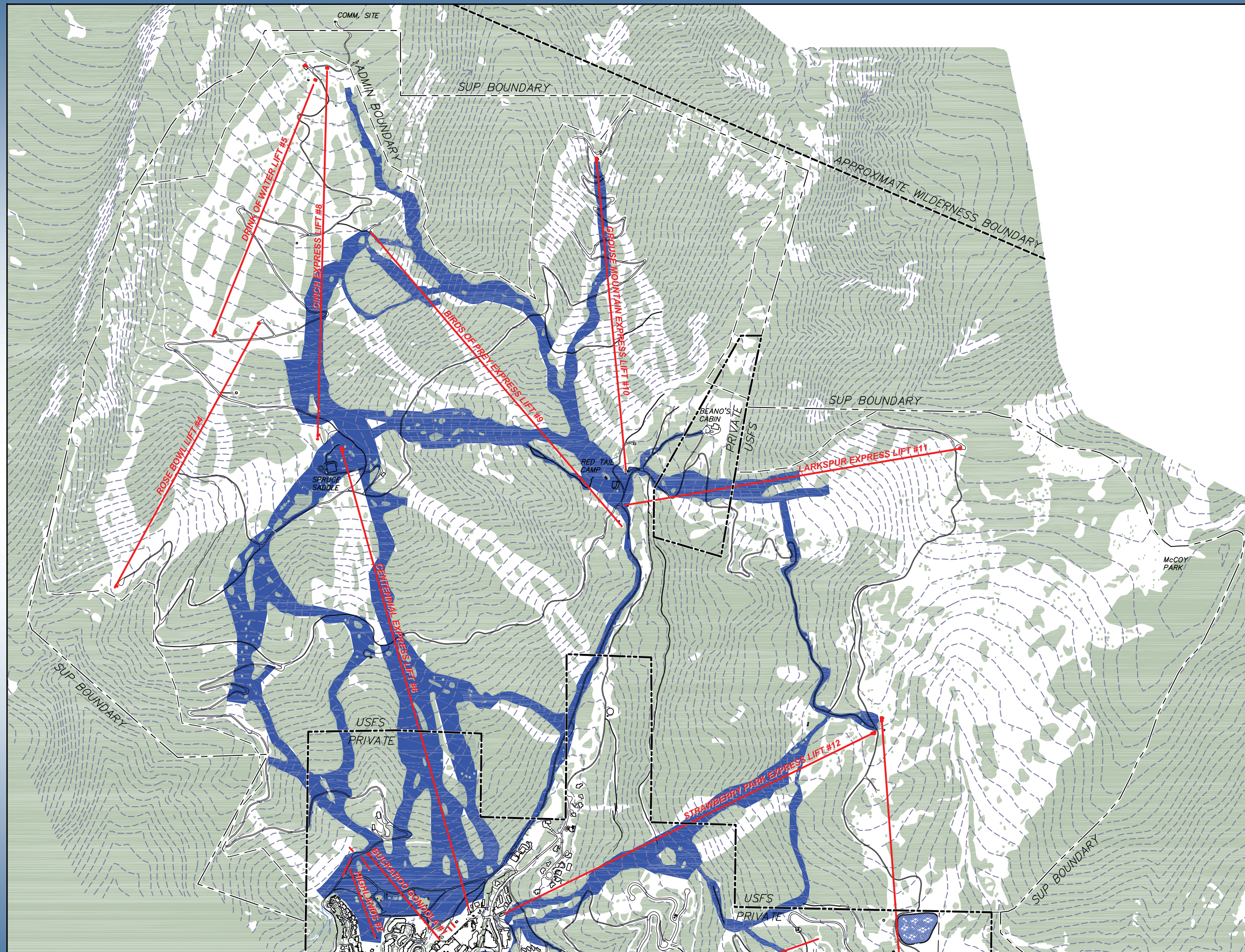
 EXISTING SNOWMAKING



PREPARED BY:





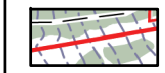


BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 3 - 7

EXISTING SNOWMAKING  
UPPER MOUNTAIN

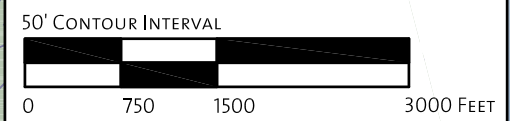
LEGEND



EXISTING LIFTS AND TRAILS



EXISTING SNOWMAKING



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM



## **H. ALTERNATIVE EXPERIENCE**

### **1. Hay Meadow**

A children's snowtubing area is currently operated on private lands in Hay Meadow.

### **2. McCoy Park**

The McCoy Park area began in 1986 with an outfitter guide permit to operate the McCoy Park track system for Nordic skiing. It was included as part of Beaver Creek's SUP area in 1999. The area is currently within an Inventoried Roadless Area. However, McCoy Park is specifically identified in the 2002 WRNF Land and Resource Management Plan Revision Environmental Impact Statement as a potential "Future Expansion" area.<sup>4</sup>

Beaver Creek operates McCoy Park as a Nordic ski area with 37 kilometers of snowcat groomed ski trails, a roped and signed boundary, a yurt warming hut, telephone, roads, ski patrol services (via snowmobiles), skiing instruction, and signing. In addition to its Nordic facilities, McCoy Park is a large open bowl with ideal beginner, novice and low intermediate alpine skiing terrain. It is estimated that 5,000 skiers took advantage of the McCoy Park facility during the 2009/10 ski season. McCoy Park is physically and operationally integrated with the overall Beaver Creek, Bachelor Gulch, and Arrowhead resort and skiing complex.

### **3. Summer Programs**

The goal of Beaver Creek's summer programs is to provide the guest with a wide variety of opportunities, activities, and experiences in a mountain setting ranging from very passive to very active. It is noteworthy that Beaver Creek Four Season Resort is constantly seeking new ways of providing summer recreational experiences for the whole family.

Currently Beaver Creek operates the Centennial Express from the Village to Spruce Saddle. The area surrounding Spruce Saddle has a disc golf course. Additionally, horseshoes and volleyball are available. Miniature golf and rebound tramelines are available at the base of the Centennial Express. Spruce Saddle has become a jumping off point for mountain bikers and hikers, in addition to being a popular location for both wedding and group events.

The Beaver Creek Activities Center offers scheduled guided hikes and other activities. For those who wish to hike on their own, trails throughout Beaver Creek's private and public lands are identified on summer trails maps. Beaver Creek's multiple use trail network stretches from Spruce Saddle to the base of Arrowhead.

A separate entity operates under an outfitter and guide permit from the WRNF for horseback tours. With the exception of dinner rides to Beano's Cabin and day rides to Beaver Lake, the equestrian trails all leave the SUP area to the east.

Finally, motorized four-wheel drive tours of the mountain are offered and, as of the time of publication of this MDP, a wedding deck is being constructed adjacent to Spruce Saddle.

---

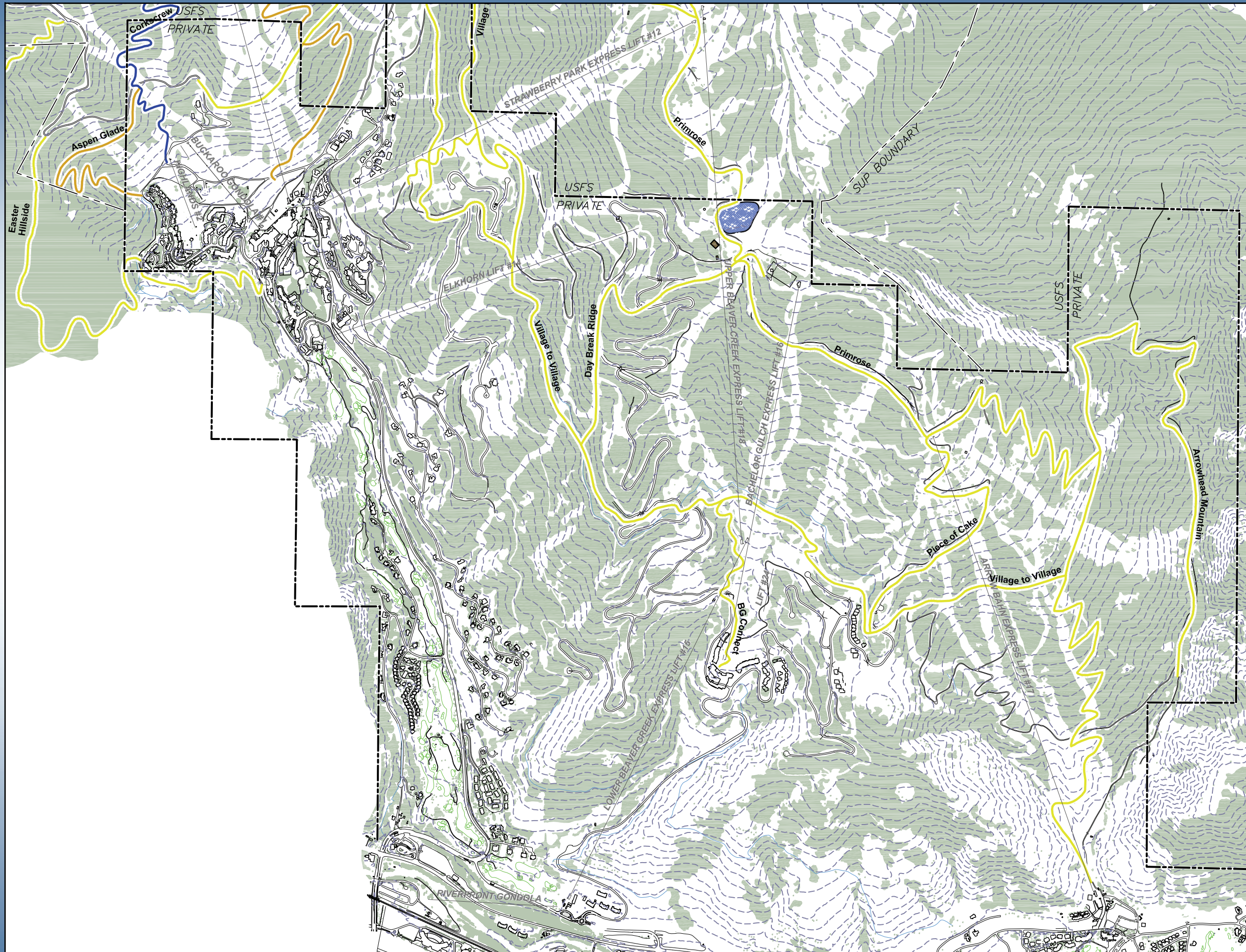
<sup>4</sup> Page 3-454


#### **4. Summer Trails**

Currently, Beaver Creek's summer trail system includes the following:

1. Mountain Biking: The Corkscrew Trail, connecting the village and Spruce Saddle. Approximately 2.8 miles
2. Hiking: Aspen Glade, Overlook, Royal Elk and Beaver Lake. Approximately 7.5 miles
3. Multi Use: PHQ Hill Climb, Paulie's Plunge, Paulie's Little Sister, Allie's Way, Beaver Lake, Village to Village, Beano's Hill Climb, Primrose, Day Break Ridge, Piece of Cake, Arrowhead Mountain, BG Connect. Approximately 27.3 miles
4. Guided interpretive nature hikes in and around Beaver Creek are provided to the guests.












BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 3 - 8

EXISTING SUMMER TRAILS  
AND ALTERNATE ACTIVITIES  
LOWER MOUNTAIN


LEGEND

	EXISTING LIFTS AND TRAILS
	EXISTING HIKING TRAIL
	EXISTING BIKING TRAIL
	EXISTING MULTI-USE TRAIL




NORTH

50' CONTOUR INTERVAL



0 750 1500 3000 FEET

PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM





## EXISTING SUMMER TRAILS AND ALTERNATE ACTIVITIES UPPER MOUNTAIN



NORTH

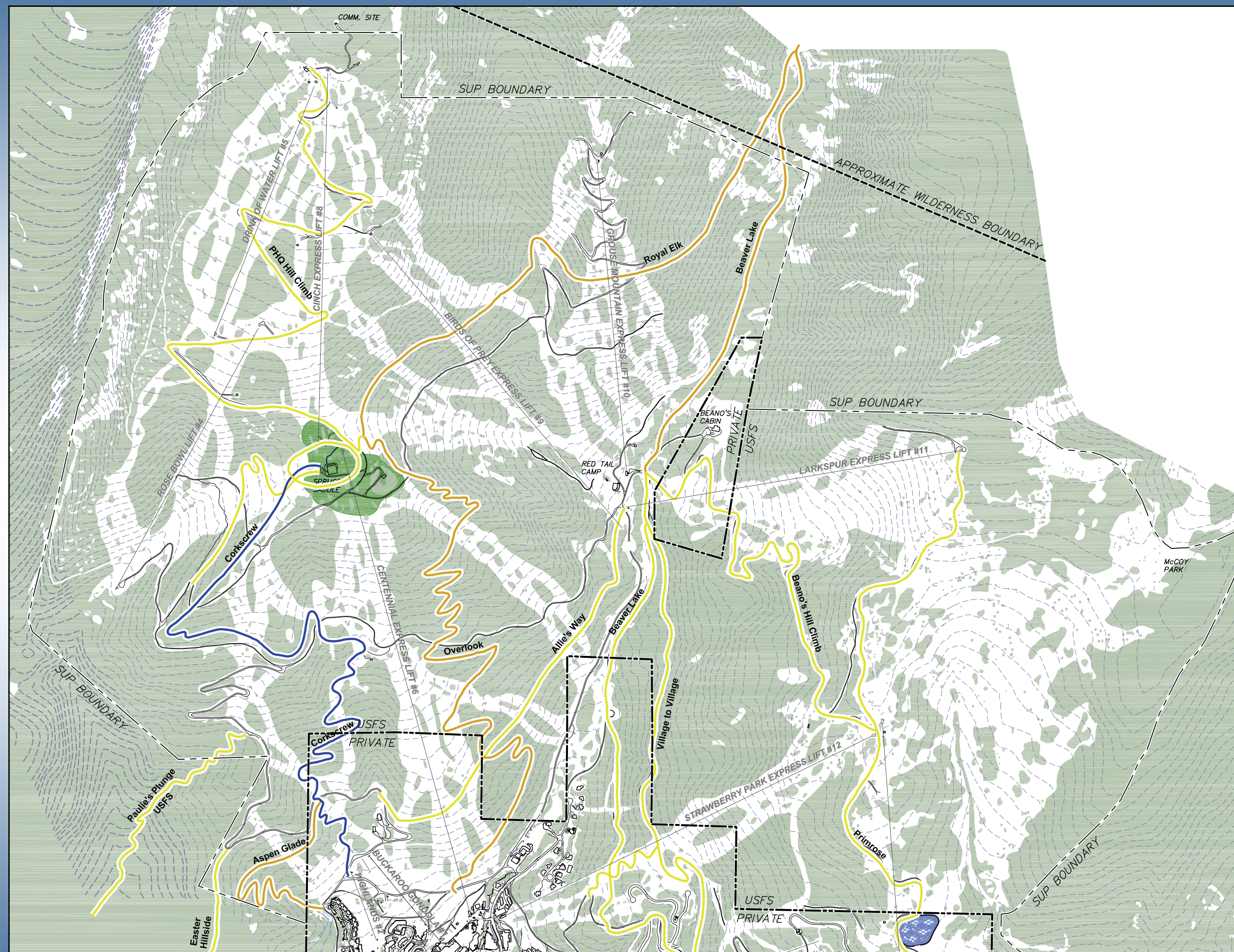
50-CONCOUR INTERVAL	

0 750 1500 3000 FEET



SE GROUP

WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM





## I. SKIER SERVICES BUILDINGS

Beaver Creek provides skier services at the Beaver Creek Village, Bachelor Gulch Village, Arrowhead Village and Beaver Creek Landing. Additional services, particularly food service, equipment rental/repair and retail, are provided in several village locations by third party entities. On-mountain services are provided at Spruce Saddle, Red Tail Camp, Allie's Cabin, Beano's Cabin, Zach's Cabin, and Arrowhead Mountain Club. The following table summarizes the existing guest service facilities at Beaver Creek.

**TABLE 3-6:  
EXISTING GUEST SERVICE FACILITIES**

Service Function	Base Area				On-mountain							
	Beaver Creek Village	Bachelor Gulch Village	Arrowhead Village	Beaver Creek Landing	Spruce Saddle	Red Tail Camp	Allie's Cabin	Beano's Cabin	Zach's Cabin	Arrowhead Mountain Club	The Ranch	Mamies
Ticket Sales	X	X	X	X							X	
Public Lockers	X	X	X	X	X							
Rentals/Repair	XO	XO	XO	XO	X		X					
Retail Sales	XO	XO	XO	X	X	X	X	X	O	O		
Bar/lounge	XO	XO	XO	O	X	X	X	X	X			
Adult Ski School	X	X	X	X	X							
Kid's Ski School	X		X		X						X	
Restaurant Seating - Indoor	XO	XO	XO	O	X	X	X	X	X	X	X	X
Rest rooms	X	X	X	X	X	X	X	X	X	X	X	
Ski Patrol*	X				X							
Administration	X	X	X		X	X					X	

X = operated by Beaver Creek Resorts

O = operated by others

\*Ski Patrol outposts are located at the top of lifts 10, 12 and 16.

## J. RESTAURANT SEATING

A key factor in evaluating restaurant capacity is the turnover rate of the seats. A turnover rate of two to five times per day is the standard range utilized in determining restaurant capacity. Fine dining at ski areas typically results in a turnover rate of two, while 'fast food' cafeteria style dining is characterized by a higher turnover rate. Occasionally a turnover rate greater than 5 may be utilized to reflect the true 'fast food' nature of the facility. Weather also has an influence on turnover rates at ski areas; for example, on snowy days skiers will spend more time indoors than on sunny days.

The following table summarizes the existing indoor and outdoor restaurant seating at Beaver Creek, as well as the "nice day" and "adverse day" seating capacities. These capacities are based on the

assumption that outdoor seating may be utilized when the weather is fair (i.e., nice day), while guests are limited to indoor seating during adverse weather days (i.e., adverse day).

**TABLE 3-7:  
EXISTING RESTAURANT SEATING**

<b>Restaurant</b>	<b>Indoor Seating</b>	<b>Outdoor Seating</b>	<b>Total Seating</b>	<b>Average Seat Turnover</b>	<b>Nice Day Capacity</b>	<b>Adverse Day Capacity</b>
Spruce Saddle	1,320	360	1,680	2.75	4,620	3,630
Red Tail Camp	269	206	475	3.0	1,425	807
Allie's Cabin	120	40	160	2.5	400	300
Beano's Cabin	144	40	184	2.5	460	360
Zach's Cabin	160	8	168	2.5	420	400
Broken Arrow Cafe	95	175	270	3.0	810	285
The Ranch	100	0	100	2.5	250	250
Mamie's	25	125	150	3.0	450	75
<b>TOTAL</b>	<b>2,233</b>	<b>954</b>	<b>3,187</b>		<b>8,835</b>	<b>6,107</b>

Table 3-7 illustrates that on nice days Beaver Creek has an on-mountain seating (indoor and on decks) capacity for 8,835 guests while on an adverse weather day the capacity drops to 6,107 (indoor only). Given the Manage-To number of 11,000 guests, there is not adequate on-mountain seating on busy days to meet the demand—even when the weather is fair and outdoor decks can be utilized. There are a number of restaurants in the base area villages operated by other entities: Beaver Creek Village, Bachelor Gulch Village, Arrowhead Village, and Beaver Creek Landing. These village restaurants currently offset the deficit of on-mountain seating. On busy days when the on-mountain restaurants are full, guests may ski down into one of the villages for lunch. Although the village restaurants offset the current deficit, future plans should include additional on-mountain restaurant space to meet the existing demand.

## **K. ARCHITECTURAL THEMES**

The architectural theme for the existing facilities on Beaver Creek Mountain may be characterized as being reminiscent of the influences of high alpine design techniques while reflecting the ranching and agricultural heritage of the area.

Buildings are typically one to three stories, have simple gable roof forms at pitches between 4:12 and 6:12, with broad overhangs. Individual building designs have avoided modern trends and are inspired by more traditional, historic examples. Roofs have been designed to retain snow. Structure is expressed in both scale and detailing to clearly communicate the extraordinary snow and wind loads that the structure must withstand.

Materials are natural and indigenous, such as stone, log timber, wood or stucco. Synthetic materials that simulate natural materials have been used. Detailing has been hewn, rugged and less refined. The exterior and interior use of materials conveys simplicity and craftsmanship. Use of materials



expresses mass at the base of the building, with lighter materials occurring toward the top of the structure.

While these are the current architectural themes for the on-mountain facilities at Beaver Creek, future construction and/or remodeling may explore a departure from these themes.

## **L. PARKING**

On busy days, parking demand is driven by skiers arriving in their personal vehicles, as well as the mountain's employees, the village's non-mountain employees, village shoppers and construction workers. On most days, the existing parking lots are adequate and the supply meets the demand. On up to 15 days per season, all parking areas are completely full and overflow parking occurs on Highway 6 and on the Avon Rodeo grounds.

The existing public and employee parking lots and their vehicles capacities are shown in Table 3-8.

**TABLE 3-8:  
PARKING LOTS AND CAPACITIES – EXISTING CONDITIONS**

<b>Parking Supply</b>	<b>Public Vehicles</b>	<b>Employee Vehicles</b>	<b>TOTAL Vehicles</b>
Elk Lot	300	300	600
Bear Lot	600	100	700
Prater Road	100	0	100
Wolf Lot	280	150	430
Tarnes	0	70	70
Municipal Services	0	41	41
Arrowhead	240	10	250
Village Hall	141	50	191
Elk Horn	70	0	70
Villa Montane	160	0	160
St James Place	174	0	174
Service Center	0	50	50
<b>TOTAL</b>	<b>2,065</b>	<b>771</b>	<b>2,836</b>

Source: SE GROUP

Assuming average vehicle occupancies of 2.8 persons (and 2.0 at the Service Center), 2,836 parking spaces would provide parking for 7,901 users.

Beaver Creek experiences a deficit of parking between 10 and 15 times per ski season. This is caused by a combination of factors, including day skiers, employees, construction workers, and village shoppers. This is offset through the use of Colorado Department of Transportation permits to park up to 150 cars on Highway 6 and the use of the 800 car Avon Rodeo grounds parking which Beaver Creek leases. Due to its remote location and need for additional busses, using the Rodeo grounds for parking tends to complicate the transportation system but is nonetheless utilized when necessary.

There are many destination/local skiers that do not contribute to parking needs/constraints. This parking deficiency ignores Beaver Creek, Bachelor Gulch, Arrowhead and Avon's bed base, which offsets parking demands since guests staying in local accommodations do not utilize day skier parking. Parking needs are further offset by the Avon and Eagle County bus systems.

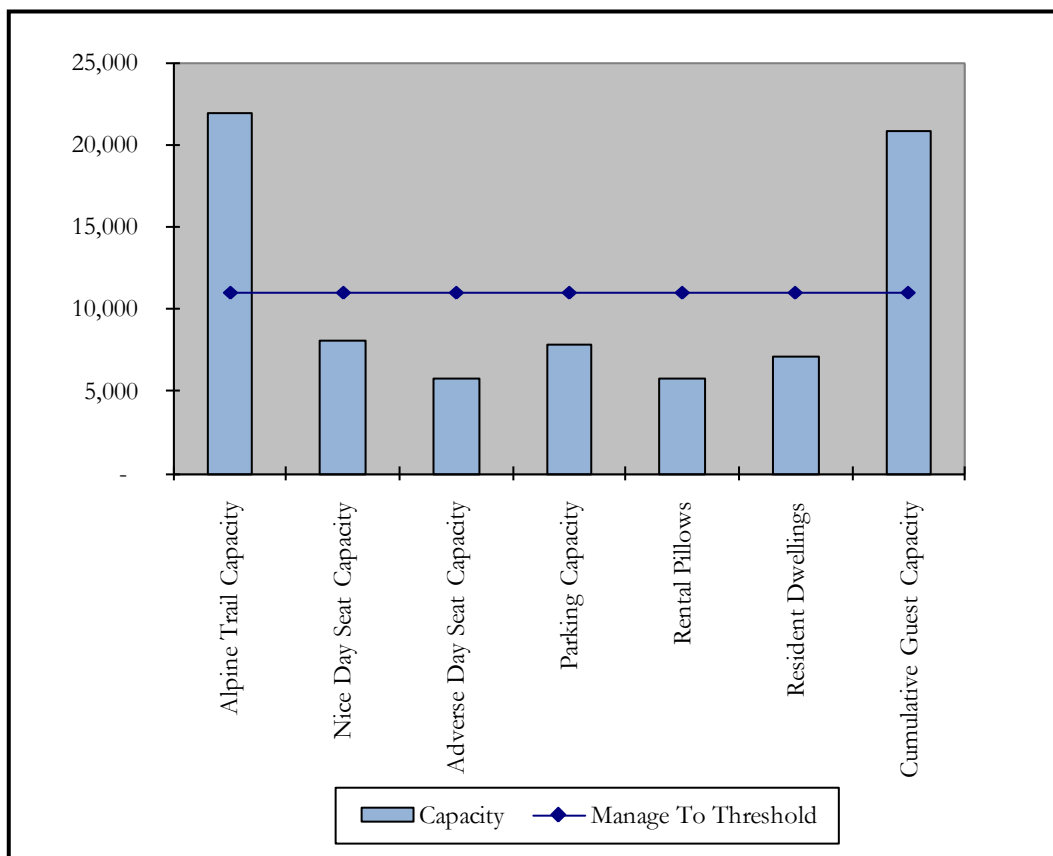
The River Front Gondola that connects Avon to the Beaver Creek Express lift at the Beaver Creek Landing serves the existing and proposed bedbase in the center of Avon. This decreases parking demand originating in Avon.

## M. RESORT BALANCE AND OPPORTUNITIES / CONSTRAINTS

### 1. Resort Balance

The overall balance of the existing ski area is evaluated by calculating the capacities of the resort's various components—lifts, terrain, skier services, food service seating and parking—as compared to the Manage-To threshold planning number. The capacities of various resort components have been combined into Chart 3-3.

**CHART 3-3:  
RESORT BALANCE – EXISTING CONDITIONS**



Note: Cumulative Guest Capacity is the total sum of Parking Capacity, Rental Pillows and Resident Dwellings.

As the above chart shows, and considering the Manage-To planning number of 11,000, the existing resort has adequate Alpine trail capacity (with identified deficits of beginner and intermediate terrain) and adequate lift network capacities.

## **2. Opportunities and Constraints**

### Lifts

- The Highlands Double (Lift #2) needs to be upgraded and replaced with a higher capacity lift. Optimally, the top terminal will be relocated east of the work road switch back.
- Due to its age, and low capacity, the Rose Bowl Triple (Lift #4) cannot not satisfy guests' preferences for high-speed conveyance. Because of this, many of Beaver Creek's guests avoid this area and instead use terrain served by the Centennial Express. Ideally, Lift 4's top terminal placement will be extended further up the mountain to connect with the Birds of Prey Express (Lift #9) terrain and the Stone Creek Chutes.
- As discussed previously, the Drink of Water Double (Lift #5) is an older lift that is currently functioning adequately but will need to be replaced in the future.
- The Centennial Express (Lift #6) needs to be replaced with a higher capacity lift. This is due to three important factors: 1) its age (installed in 1986); 2) it critical out-of-valley access role; and 3) the fact that it serves some of the most popular terrain in Beaver Creek, which results in long lines on many days.
- Future plans for McCoy Park may warrant upgrading the Strawberry Park Express (Lift #12) to a gondola or chondola to accommodate additional skier and foot traffic.
- Because of its age and low utilization (due to its role as access for homeowners rather than round trip skiing) Beaver Creek's guests would benefit from upgrading the Elkhorn Triple (Lift #14), which may include dividing it into two separate lifts.
- Replacing Cabin Fever (Lift 24) with a fixed grip chairlift in a modified alignment would benefit Beaver Creek's guests.

### Terrain

Notable terrain opportunities/constraints at Beaver Creek include:

- Beaver Creek has a notable deficiency in beginner and low intermediate and a slight deficiency of intermediate terrain, with an abundance of novice, advanced intermediate and expert terrain compared to the market norms. Additionally, the beginner terrain associated with Chair 5 at the top of the mountain can be affected by high winds, making it less than ideal for novice skiers.
- The trails surrounding Centennial Express (Lift #6 – the most utilized lift at Beaver Creek) are rated low intermediate on the upper terrain and advanced intermediate on the lower terrain. Lower intermediate guests need an alternative to descending the lower, steeper terrain of Lower Centennial, Buckboard or Bear Trap. Better access to Latigo, Gold Dust or the Cinch would greatly improve skier circulation.

- The NASTAR course on Lower Centennial closes off 40 percent of the lower mountain trails in this area, which affects skier circulation and therefore the recreational experience.
- Terrain in the Rose Bowl pod is underutilized because of the fixed-grip, slow lift. Skier preferences are clearly toward high-speed lifts.
- Beginner terrain served by both Lifts 5 and 8 is somewhat intimidating for beginners to reach, as they must ride the Centennial Chair. Furthermore, to reach Chair 5, beginner-level skiers and riders must ride two lifts (6 and 8). Once there, this terrain is exposed and can be affected by wind. Thus, this does not provide an ideal learning/teaching experience, and this situation is exacerbated by difficult egress back to Beaver Creek Village.

### Race Venues

Vail/Beaver Creek has been selected by the International Ski Federation (“FIS”) to host the 2015 World Alpine Championships. Events are scheduled to be hosted at both Vail and Beaver Creek and according to FIS requirements, separate venues for men’s and women’s world Alpine events are required. Due to topography, aspect and slope gradients, Beaver Creek is the logical choice for hosting the men’s and women’s downhill.

The well-known Birds of Prey™ men’s course is too steep to host women’s downhill events, and Beaver Creek does currently not offer any courses that are suitable for holding women’s downhill, slalom, giant slalom or Super G. Therefore, specific women’s downhill, slalom, giant slalom and Super G race courses are critical if Beaver Creek is to remain a true world-class recreational and competition venue, which is a rarity in North America.

### Maintenance

An on-mountain vehicular (i.e., snowcats and snowmobiles) maintenance/storage facility is needed. This would reduce vehicular traffic between the mountain and the base area, save in wear and tear on equipment, and reduce fuel consumption. In addition, the abandoned fuel site at the top of Chair 8 may need to be reactivated to augment fuel supplies on the mountain.

### Restaurant Seating

There is a deficiency in nice day and adverse day seating. The negative impacts of the seating deficiency are partially offset by the numerous restaurants available in Beaver Creek Village, and at the food service available at the Ritz-Carlton at Bachelor Gulch.

### Parking Capacity

Beaver Creek experiences a deficit of parking between 10 and 15 times per ski season, due to a combination of factors, including day skiers, employees, construction workers, and village shoppers. However, this is offset through the use of Colorado Department of Transportation permits to park vehicles on Highway 6 and the use of the Avon Rodeo grounds.

## **N. BOUNDARY MANAGEMENT**

### **1. Bald Spot**

The Bald Spot – accessed from the top of the Cinch Express and Drink of Water lifts (Chairs 8 and 5) – is heavily skied. The upper part of the bowl that is being accessed is within the Holy Cross Wilderness. Users return to the ski area at the bottom of the Birds Of Prey Express, Grouse Mountain Express and Larkspur Express (lifts 9, 10, and 11). This avalanche prone area is not within the ski area permit and is not managed, patrolled, or subject to avalanche control work.

### **2. Slick Slide, Y Chute and Stairway to Heaven**

The Slick Slide, Y Chute and Stairway to Heaven are accessed from the top of the Larkspur Express (Lift 11) and is heavily skied. These avalanche prone areas are not within the ski area permit and are not managed, patrolled or subject to avalanche control work. Users skiing the east face of the western hillside and return to the ski area at the bottom of the Birds Of Prey Express, Grouse Mountain Express and Larkspur Express (chairs 9, 10, and 11).

### **3. Lower Stone Creek**

These areas are accessed from the bottom of the Rose Bowl lift (Chair 4) and are heavily skied. This area is not within the ski area permit and is not managed, patrolled or subject to avalanche control work. Users are skiing down the Stone Creek drainage to the Eagle-Vail PUD, not back into the ski area.

### **4. Alta Chute and Grandpa's**

These areas are accessed from the top of the Grouse Mountain Express (Lift 10) and are heavily skied. These avalanche prone areas are not within the SUP area and are not managed, patrolled, or subject to avalanche control work. Those skiing the west shoulder of Grouse Mountain and returning to the ski area do so through the bottom of the Birds Of Prey Express, Grouse Mountain Express and Larkspur Express (lifts 9, 10, and 11).

#### **4. PREVIOUSLY-APPROVED, NOT YET IMPLEMENTED PROJECTS**

Snowmaking upgrades on the following terrain have been previously approved, but have not yet been implemented (as illustrated on Figure 5-4): Cinch, Stone Creek Meadows, Harrier, Ptarmigan, Upper Larkspur, Lower Paintbrush, Primrose, Sawbuck, Stacker, as well as on the proposed terrain through Thresher Glades and on the west side of the Centennial Express.

Approvals are contained in the 1998 Decision Notice and Finding of No Significant Impact, Snowmaking Expansion Beaver Creek Resort.

## 5. UPGRADING PLAN

The purpose of the Upgrading Plan is to provide direction for Beaver Creek's future in response to the goals and objectives that were identified in Chapter 1. This is intended to be accomplished by ensuring the greatest practical use of the existing lands in a sustainable and environmentally responsible manner. As discussed in Chapter 1, the goal of the Upgrading Plan for Beaver Creek is to provide a high quality recreational experience that is aligned with its stakeholders and core values, including: appealing to guests of all ages and ability levels; maintaining or improving its position as one of the top family ski destinations in the world; and protecting the environment in which Beaver Creek operates.

Accordingly, the Upgrading Plan is tailored to improve Beaver Creek's ability to respond to its changing market/guests' demands through maintaining a variety of terrain that continues to provide a challenge for the majority of the ski/snowboard market, improving inter-mountain circulation, providing a more efficient lift system utilizing high-speed lift technology, and creating additional seating and parking.

Specific objectives are identified in Chapter 1 to guide the future direction of Beaver Creek, and help achieve its goal of maintaining/improving its position in the industry. This Upgrading Plan has therefore been crafted around these nine objectives:

1. Continue to update mountain facilities and infrastructure in order to provide the highest quality guest experience possible.
2. Update mountain facilities and infrastructure related to ski racing to continue to provide world class venues for Alpine events.
3. Regularly update guest services across the resort to respond to the needs and demands of Beaver Creek's market.
4. The goal of Beaver Creek's summer programs is to provide the guest with a wide variety of opportunities, activities, and experiences in a mountain setting ranging from very passive to very active. This requires continually identifying and responding to new opportunities for summer and off-season activities, both on and off the mountain, that capitalize on Beaver Creek's location and market.
5. Update family and service programs with additional activities both on and off the mountain.
6. Accommodate projected local population increases and destination visitation while maintaining a high quality recreational experience and pleasant setting.
7. Address identified deficiencies in beginner and low intermediate terrain (discussed in Chapter 3, and specifically in Table 3-3).
8. Enhance the quality and variety of ski and snowboard terrain for all segments of the market – from expert to first-time skiers.
9. Implement projects and operate in a sustainable manner.

This Upgrading Plan reflects the findings of the existing facilities analysis (Chapter 3), with the assumption that the Previously Approved, Not Yet Implemented projects (Chapter 4) will be implemented. Unless stated otherwise, the planned conditions detailed in this section reflect a full build-out scenario, with all projects being completed. The projects outlined in this Upgrading Plan are depicted in Figures 5-1 and 5-2.

## **A. LIFTS**

The lift upgrading plan calls for the installation of two new chairlifts and two new carpet conveyor lifts, and the replacement of five existing lifts. The focus on the upgrading plan is on improving the customer experience through shortened lift lines and improved circulation around the mountain, especially for beginner/novice guests. Figures 5-1 and 5-2 identify new and improved lifts, and Table 5-1 provides lift specifications.

### **1. New Lifts**

The planned lifts include the new McCoy Park quad chairlift for round trip novice and low intermediate skiing, an egress triple chairlift out of McCoy Park, and two new carpet conveyor lifts for beginners located at the top of the Strawberry Park Gondola replacement lift.

### **2. Upgraded Lifts**

The Highlands Triple (Lift #2), an old lift located on private property, is currently planned to be re-aligned and upgraded to a fixed-grip quad chairlift. Upgrading this lift will enable Ski School instructors to ride with students.

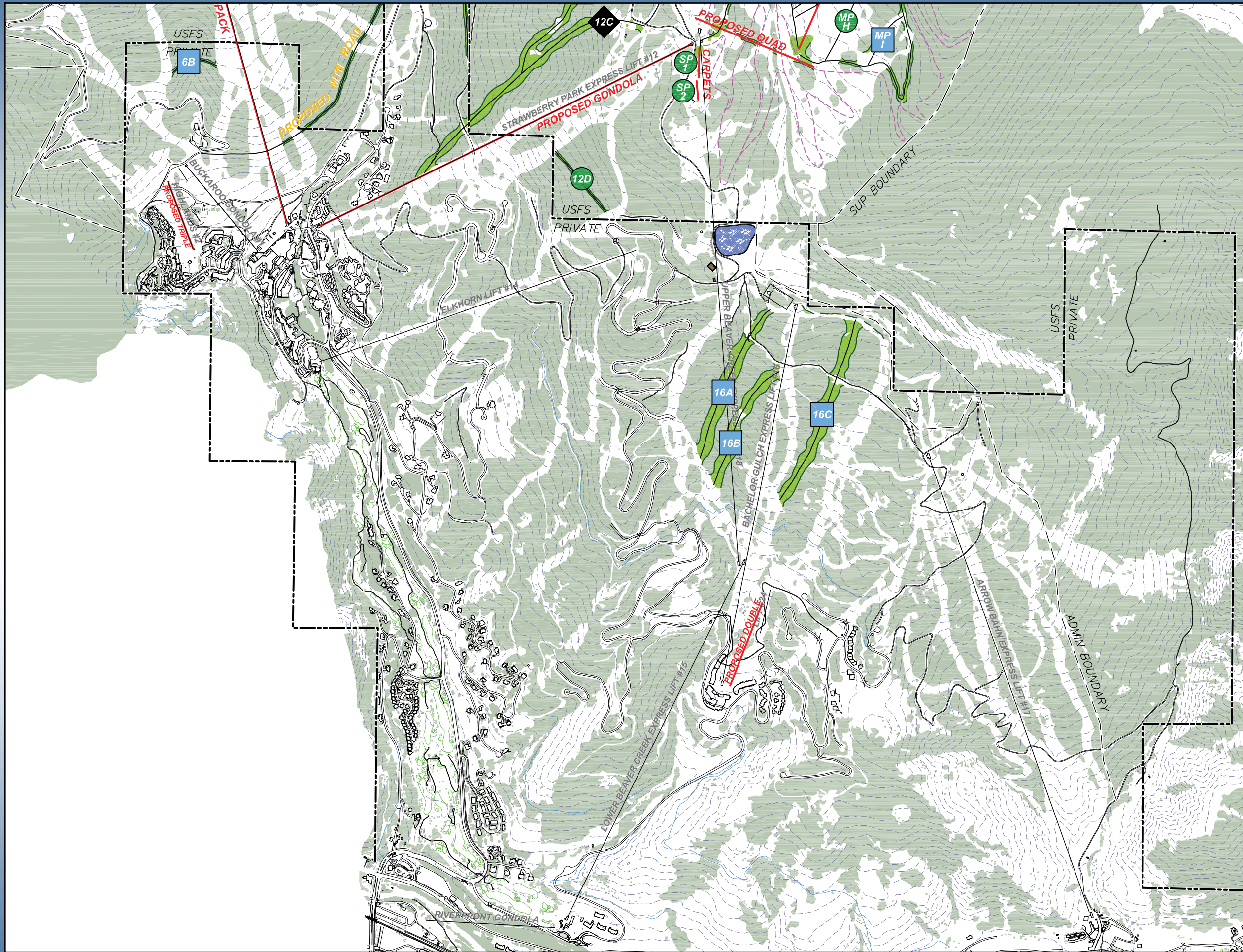
The Rose Bowl Triple (Lift #4) will be upgraded to a high-speed quad chairlift. The top terminal may be relocated uphill of the current location, to improve access to the upper Stone Creek chutes, Birds of Prey Express (Lift #9) terrain and the Cinch Express (Lift #8). Additionally, by meeting skier expectations by upgrading Lift #4 to a high-speed lift, it will encourage more skiers to utilize the terrain in the Rose Bowl which has historically been underutilized. It is believed that these additional skiers in Rose Bowl would come from the population of those typically using terrain associated with the Centennial Express (Lift #6), which is over utilized.

The Centennial Express (Lift #6) is a major out-of-base lift and also offers substantial round trip skiing opportunities. Additional capacity is required to accommodate both demands. As such, the existing lift will be upgraded to a high-speed six-passenger lift or eight-passenger Chondola. Loading carpets may be utilized for this lift to improve the loading efficiency.

The Strawberry Park Express (Lift #12) will be upgraded to a gondola, to facilitate the use of the planned McCoy Park terrain and restaurant facility.

The Cabin Fever surface lift (Lift #24), located on private property, will be upgraded to a double chairlift to improve access to teaching terrain in Bachelor Gulch.



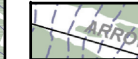






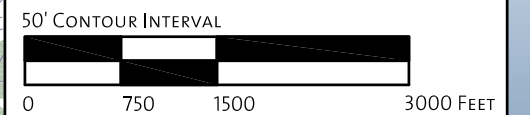
BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 5 - 1

PROPOSED CONDITIONS  
LOWER MOUNTAIN

LEGEND

-  EXISTING LIFTS AND TRAILS
-  PROPOSED LIFT
-  PROPOSED TRAIL
-  PROPOSED MOUNTAIN ROAD
-  PROPOSED NORDIC TRAIL



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM



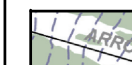


BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 5 - 2

PROPOSED CONDITIONS  
UPPER MOUNTAIN

LEGEND



EXISTING LIFTS AND TRAILS



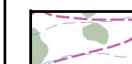
PROPOSED LIFT



PROPOSED TRAIL



PROPOSED MOUNTAIN ROAD



PROPOSED NORDIC TRAIL



NORTH

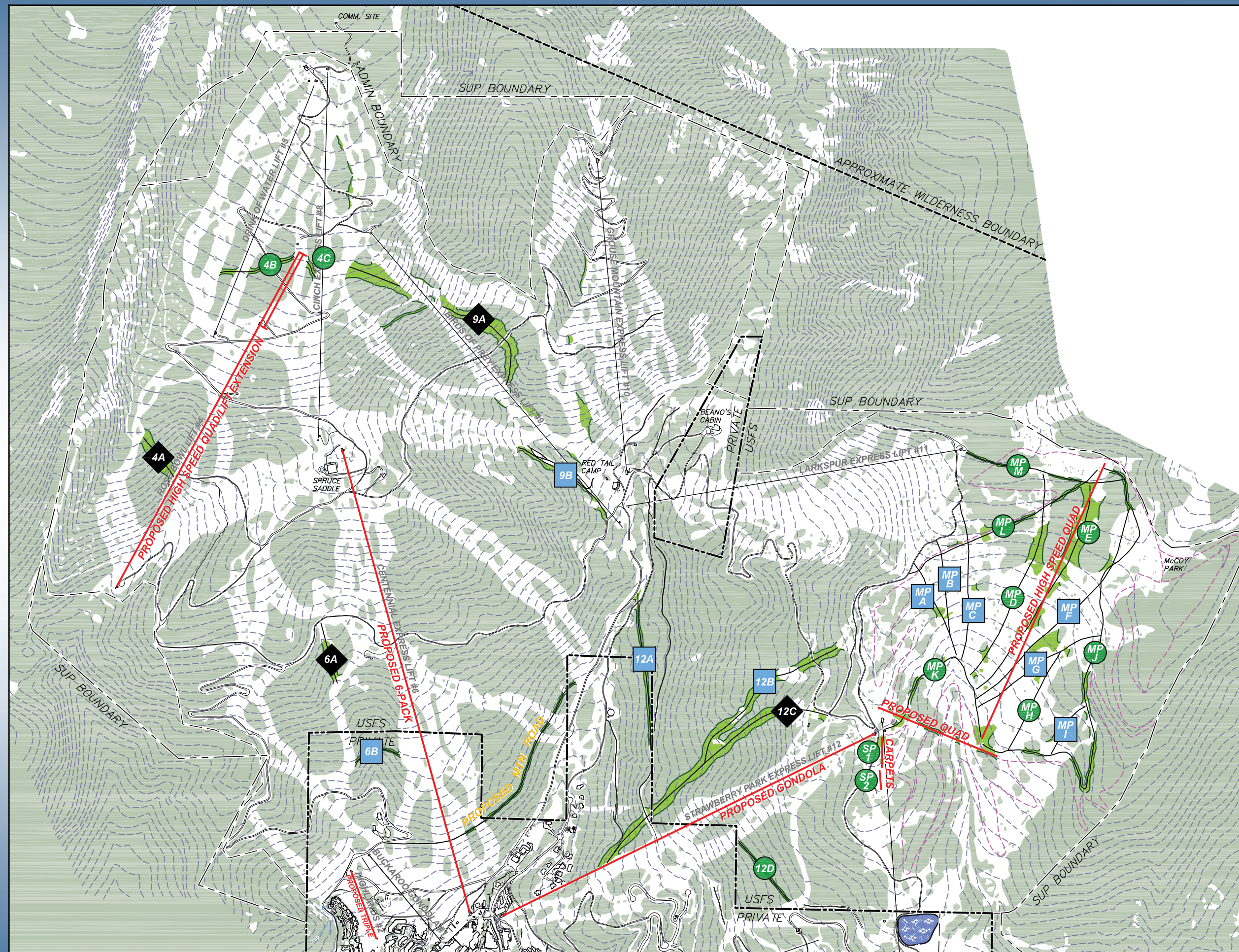
50' CONTOUR INTERVAL



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM





The following table details the lift specifications of the Upgrade Plan. New lifts are indicated in **bold** text, while planned upgrades are indicated in ***italicized bold*** text.

**TABLE 5-1:  
SKI LIFT SPECIFICATIONS – UPGRADE PLAN**

Lift #	Lift Name and Type	Vert. Rise	Slope Length	Avg. Grade	Hourly Capacity	Rope Speed	Carrier Spacing	Type and Year Installed	Guests per Carrier
		(ft.)	(ft.)	(%)	(per/hr.)	(fpm)	(ft.)		
1	Buckaroo Gondola	336	1,712	0	1,800	600	160	Doppelmayr/2007	8
2	<i><b>Highlands Triple</b></i>	<i><b>196</b></i>	<i><b>1,195</b></i>	<i><b>0</b></i>	<i><b>1,500</b></i>	<i><b>300</b></i>	<i><b>36</b></i>	<i><b>Upgrade</b></i>	<i><b>3</b></i>
4	<i><b>Rose Bowl Express</b></i>	<i><b>1595</b></i>	<i><b>6,315</b></i>	<i><b>0</b></i>	<i><b>2,400</b></i>	<i><b>1,000</b></i>	<i><b>100</b></i>	<i><b>Upgrade</b></i>	<i><b>4</b></i>
5	Drink of Water Double	795	4,335	0	1,200	500	50	Doppelmayr/1980	2
6	<i><b>Centennial Express</b></i>	<i><b>2102</b></i>	<i><b>7,735</b></i>	<i><b>0</b></i>	<i><b>3,200</b></i>	<i><b>1,000</b></i>	<i><b>113</b></i>	<i><b>Upgrade</b></i>	<i><b>6 or 8</b></i>
8	Cinch Express	1,255	5,975	0	2,400	1,000	100	CTEC/1997	4
9	Birds of Prey Express	2162	6,453	0	2,400	1,000	100	Doppelmayr/2004	4
10	Grouse Mountain Express	1806	5,370	0	2,400	984	98	CTEC/1991	4
11	Larkspur Express	1529	5,566	0	2,400	1,000	100	Doppelmayr/2005	4
12	Strawberry Park Gondola	1742	6,912	0	2,600	984	91	Upgrade	4
14	Elkhorn Triple	1317	5,358	0	1,246	450	65	Doppelmayr/1980	3
15	Lower BC Mtn Express	907	6,406	0	2,400	1,000	100	Doppelmayr/2004	4
16	Bachelor Gulch Express	1447	6,255	0	2,400	984	98	CTEC/1996	4
17	Arrow Bahn Express	1713	7,962	0	2,187	984	108	Doppelmayr/1988	4
18	Upper BC Mtn Express	1482	8,590	0	2,400	1,000	100	Doppelmayr/2004	4
20	BC Magic Carpet	6	80	0	1,500	157	6	Sun Kidd	1
21	Bibber Bahn	6	80	0	1,500	157	6	Sun Kidd	1
22	Highlands Bahn	29	240	0	1,500	157	6	Sun Kidd	1
23	Ritz Bahn	17	120	0.07	1,500	157	6	Magic Carpet	1
24	<i><b>Cabin Fever</b></i>	<i><b>230</b></i>	<i><b>1,518</b></i>	<i><b>0</b></i>	<i><b>1,000</b></i>	<i><b>300</b></i>	<i><b>36</b></i>	<i><b>Upgrade</b></i>	<i><b>2</b></i>
26	Gold Bahn	27	300	0	1,500	157	6	Sun Kidd	1
27	Silver Bahn	12	80	0	1,500	157	6	Sun Kidd	1
28	Kerch Bahn	13	110	0	1,500	157	6	Sun Kidd	1
29	Haymaker	47	320	0.15	1,500	157	6	Magic Carpet	1
30	<i><b>Strawberry Carpet 1</b></i>	<i><b>45</b></i>	<i><b>500</b></i>	<i><b>0</b></i>	<i><b>1,500</b></i>	<i><b>157</b></i>	<i><b>6</b></i>	<i><b>Planned</b></i>	<i><b>1</b></i>
31	<i><b>Strawberry Carpet 2</b></i>	<i><b>30</b></i>	<i><b>300</b></i>	<i><b>0</b></i>	<i><b>1,500</b></i>	<i><b>157</b></i>	<i><b>6</b></i>	<i><b>Planned</b></i>	<i><b>1</b></i>
32	<i><b>McCoy Park Quad</b></i>	<i><b>710</b></i>	<i><b>4,746</b></i>	<i><b>0</b></i>	<i><b>2,400</b></i>	<i><b>1,000</b></i>	<i><b>100</b></i>	<i><b>Planned</b></i>	<i><b>4</b></i>
33	<i><b>McCoy Egress</b></i>	<i><b>300</b></i>	<i><b>2,022</b></i>	<i><b>0.15</b></i>	<i><b>1,200</b></i>	<i><b>450</b></i>	<i><b>68</b></i>	<i><b>Planned</b></i>	<i><b>3</b></i>

## B. SKI TERRAIN

Table 5-2 outlines the terrain that constitutes Beaver Creek's ski trail network under the Upgrading Plan. Newly planned terrain is indicated in *italicized bold* text.

**TABLE 5-2:  
TERRAIN SPECIFICATIONS – UPGRADING PLAN**

Trail Name	Top Elev.	Bottom Elev.	Vert Drop	Horiz. Length	Slope Length	Avg Width	Area	Avg. Grade	Max Grade	Ability Level
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(acre)	(%)	(%)	
01 Haymeadow	8,458	8,112	346	1,956	1,989	694	31.7	0.2	0.2	Novice
02 Chair 2	8,399	8,221	178	1,185	1,201	367	10.1	0.2	0.3	Novice
04 Bridle	9,680	9,361	319	2,431	2,461	33	1.9	0.1	0.2	Novice
04 C Prime	10,152	9,649	503	2,111	2,175	246	12.3	0.2	0.4	Intermediate
04 Cataract	10,289	9,807	482	1,193	1,295	245	7.3	0.4	0.5	Adv. Intermediate
04 Ripsaw	10,443	9,360	1,083	4,025	4,209	265	25.6	0.3	0.6	Expert
04 Sheephorn Escape	10,487	10,464	23	857	858	75	1.5	0.0	0.1	Beginner
04 Spider	10,399	9,693	706	1,744	1,888	197	8.5	0.4	0.5	Adv. Intermediate
04 Stone Creek Meadows	10,066	9,360	705	3,215	3,304	362	27.4	0.2	0.4	Intermediate
04 Stone Creek Chutes	10,900	9,420	1,480	7,807	7,946	987	180.0	0.3	85.0	Expert
04 Web	9,881	9,535	346	1,005	1,077	245	6.1	0.3	0.5	Adv. Intermediate
05 Booth Gardens	11,419	10,660	759	4,350	4,422	209	21.2	0.2	0.3	Low Intermediate
05 Cinch	10,901	8,108	2,793	30,207	30,653	38	26.5	0.1	0.1	Novice
05 Jack Rabbit Alley	11,404	10,714	690	4,015	4,079	66	6.2	0.2	0.3	Low Intermediate
05 Mystic Island	11,263	11,099	163	806	824	173	3.3	0.2	0.3	Low Intermediate
05 Piney	11,289	11,010	279	1,589	1,615	189	7.0	0.2	0.3	Low Intermediate
05 Powell	11,410	10,430	980	5,343	5,441	274	34.3	0.2	0.3	Low Intermediate
05 Red Buffalo	11,418	10,575	843	5,303	5,379	201	24.8	0.2	0.3	Low Intermediate
05 Sheephorn	11,014	10,172	843	3,375	3,495	346	27.8	0.2	0.5	Adv. Intermediate
05 Upper Sheephorn	11,153	11,014	138	778	793	175	3.2	0.2	0.3	Low Intermediate
06 Barrel Stave	9,885	9,529	356	1,264	1,316	314	9.5	0.3	0.4	Intermediate
06 1876	8,875	8,319	556	1,582	1,842	226	9.5	0.4	0.5	Intermediate
06 Addy's	9,763	9,374	389	1,014	1,092	117	2.9	0.4	0.5	Adv. Intermediate
06 Assay	8,948	8,378	569	1,816	1,905	399	17.5	0.3	0.4	Intermediate
06 Bear Trap	8,845	8,383	462	1,450	1,691	265	10.3	0.3	0.5	Intermediate
06 Bootleg	8,865	8,388	477	1,199	1,295	132	3.9	0.4	0.5	Adv. Intermediate
06 Buckboard	8,866	8,155	710	2,226	2,525	223	12.9	0.3	0.5	Adv. Intermediate
06 Charter Skiway	8,160	7,938	223	2,935	2,978	68	4.6	0.1	0.3	Low Intermediate
06 Creekside	8,122	7,970	152	2,413	2,433	84	4.7	0.1	0.3	Low Intermediate
06 Dally	9,498	8,124	1,374	14,800	14,953	4	1.4	0.1	0.2	Novice
06 Dally Alley	8,911	8,766	144	585	607	1,939	27.0	0.2	0.3	Low Intermediate
06 Double Diamond	10,165	9,436	729	2,196	2,325	344	18.3	0.3	0.6	Expert
06 Fool's Gold	9,509	9,085	424	1,316	1,389	237	7.6	0.3	0.4	Intermediate
06 Gold Rush	9,078	8,898	180	388	428	2,566	25.2	0.5	0.5	Adv. Intermediate

**TABLE 5-2:  
TERRAIN SPECIFICATIONS – UPGRADING PLAN**

Trail Name	Top Elev.	Bottom Elev.	Vert Drop	Horiz. Length	Slope Length	Avg Width	Area	Avg. Grade	Max Grade	Ability Level
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(acre)	(%)	(%)	
06 Half-Barrell Half Pipe	9,945	9,733	212	897	923	270	5.7	0.2	0.3	Low Intermediate
06 Half Hitch	10,167	9,526	641	2,035	2,144	169	8.3	0.3	0.5	Adv. Intermediate
06 Harrier	10,118	8,550	1,568	4,852	5,129	321	37.8	0.3	0.6	Expert
06 Highlands Skiway	8,229	8,144	85	755	768	39	0.7	0.1	0.2	Novice
06 Latigo	10,178	8,458	1,720	7,880	8,221	194	36.7	0.2	0.7	Expert
06 Meadows	8,368	8,243	125	2,023	2,043	35	1.6	0.1	0.2	Novice
06 Moonshine	9,124	8,410	713	2,370	2,491	251	14.3	0.3	0.6	Expert
06 Nastar Ski Racing	9,324	8,845	478	2,067	2,128	345	16.9	0.2	0.3	Low Intermediate
06 Redtail	10,131	8,872	1,259	4,438	4,638	418	44.5	0.3	0.4	Intermediate
06 West Fall Road	10,079	9,745	334	4,420	4,456	32	3.3	0.1	0.2	Novice
08 Centennial	11,433	8,139	3,293	14,016	14,644	247	83.2	0.2	0.5	Adv. Intermediate
08 Park101_Flattops	11,404	11,024	380	2,618	2,650	168	10.2	0.1	0.2	Novice
08 Zoom Room	11,421	11,081	340	2,460	2,486	119	6.8	0.1	0.2	Novice
09 Golden Eagle	11,129	8,938	2,191	6,407	7,160	246	40.5	0.3	0.7	Expert
09 Goshawk	10,995	9,489	1,505	4,108	4,416	245	24.9	0.4	0.7	Expert
09 Peregrine	10,995	9,183	1,811	4,537	4,926	222	25.1	0.4	0.6	Expert
09 Utility Corridor	9,237	8,925	312	2,152	2,189	80	4.0	0.1	0.3	Low Intermediate
10 Bald Eagle	10,685	9,043	1,642	3,868	4,411	156	15.8	0.4	0.7	Expert
10 Camprobbler Road	10,690	9,734	955	7,943	8,035	15	2.8	0.1	0.2	Novice
10 Falcon Park	10,100	9,037	1,063	2,091	2,878	128	8.5	0.5	0.6	Expert
10 Osprey	10,161	9,207	954	2,527	3,541	221	18.0	0.4	0.7	Expert
10 Ptarmigan	9,939	8,964	975	2,354	3,472	175	14.0	0.4	0.6	Expert
10 Raven Ridge	10,686	8,903	1,783	5,218	6,162	248	35.1	0.3	0.5	Adv. Intermediate
10 Ruffed Grouse	9,802	8,970	832	1,884	2,888	179	11.9	0.4	0.7	Expert
10 Screech Owl	10,674	9,841	833	2,291	2,451	311	17.5	0.4	0.5	Adv. Intermediate
11 Bluebell	9,490	8,927	562	2,249	2,696	161	10.0	0.3	0.4	Intermediate
11 Loco	10,220	9,116	1,104	2,835	3,053	205	14.4	0.4	0.6	Expert
11 Lupine	10,287	9,976	311	723	965	307	6.8	0.4	0.5	Adv. Intermediate
11 Paintbrush	9,496	8,960	537	2,335	2,741	181	11.4	0.2	0.5	Adv. Intermediate
11 Primrose	10,369	9,112	1,256	15,598	15,829	48	17.4	0.1	0.2	Novice
11 S. Star	10,369	9,809	560	2,399	2,520	122	7.1	0.2	0.5	Adv. Intermediate
11 Three Tree Gully	10,023	9,494	529	2,145	2,228	78	4.0	0.2	0.5	Adv. Intermediate
11 Yarrow	10,228	9,312	916	3,203	3,511	453	36.5	0.3	0.6	Adv. Intermediate
12 Bitterroot	9,985	8,980	1,005	6,784	6,889	143	22.6	0.1	0.4	Intermediate
12 Overshot	9,512	9,324	188	1,872	1,886	52	2.3	0.1	0.2	Novice
12 Pitchfork	9,791	8,105	1,686	6,311	6,568	270	40.8	0.3	0.4	Intermediate
12 Stacker_lower	8,412	8,110	302	1,196	1,240	778	22.1	0.3	0.4	Intermediate
14 Boarders Loop	8,615	7,974	641	4,178	4,258	79	7.7	0.2	0.4	Intermediate
14 Gee	8,124	8,036	87	267	283	105	0.7	0.3	0.4	Intermediate
14 Haw	8,190	8,041	149	422	448	112	1.2	0.4	0.4	Intermediate
14 Homerun	8,563	8,185	379	1,335	1,395	132	4.2	0.3	0.4	Intermediate

**TABLE 5-2:  
TERRAIN SPECIFICATIONS – UPGRADING PLAN**

Trail Name	Top Elev.	Bottom Elev.	Vert Drop	Horiz. Length	Slope Length	Avg Width	Area	Avg. Grade	Max Grade	Ability Level
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(acre)	(%)	(%)	
14 Lamplighter	9,346	9,270	76	1,434	1,446	57	1.9	0.1	0.3	Low Intermediate
14 Maverick	9,262	8,929	333	3,386	3,417	73	5.7	0.1	0.2	Novice
14 McCoy	8,919	7,870	1,050	4,469	4,612	94	9.9	0.2	0.4	Intermediate
14 Meander	9,308	9,252	56	489	493	84	0.9	0.1	0.2	Novice
14 Pines Skiway	8,278	8,066	212	1,356	1,377	69	2.2	0.2	0.2	Novice
14 Second Chance	9,008	8,207	801	7,364	7,445	60	10.2	0.1	0.3	Low Intermediate
14 Settler's Way	8,980	7,977	1,003	4,030	4,195	149	14.4	0.2	0.5	Adv. Intermediate
14 Solitaire	9,120	9,052	68	1,117	1,131	35	0.9	0.1	0.2	Novice
15 Leav the Beav	8,107	7,511	596	5,932	6,014	81	11.2	0.1	0.3	Low Intermediate
16 Anderson's Alley	8,226	7,939	288	4,300	4,346	24	2.4	0.1	0.3	Low Intermediate
16 Bedstraw	8,679	8,153	525	3,374	3,453	65	5.1	0.2	0.5	Adv. Intermediate
16 Cabin Fever	9,552	8,135	1,417	7,841	8,002	202	37.1	0.2	0.4	Intermediate
16 Easy Come_Easy Go	8,900	8,757	143	1,252	1,270	35	1.0	0.1	0.3	Low Intermediate
16 Elkhorn	8,397	7,601	796	7,766	7,860	53	9.6	0.1	0.4	Intermediate
16 Grubstake	9,551	8,420	1,132	4,119	4,287	181	17.8	0.3	0.5	Adv. Intermediate
16 Gunder's	9,556	8,214	1,342	5,252	5,441	187	23.4	0.3	0.4	Intermediate
16 Holden	8,185	7,982	203	2,218	2,239	27	1.4	0.1	0.2	Novice
16 Homefire	8,296	8,226	70	614	622	45	0.6	0.1	0.3	Low Intermediate
16 Intertwine	9,550	8,110	1,440	12,026	12,193	51	14.2	0.1	0.4	Intermediate
16 Legacy	8,334	8,209	125	1,595	1,608	31	1.1	0.1	0.2	Novice
16 Ridge Point	7,767	7,651	115	1,877	1,895	34	1.5	0.1	0.3	Low Intermediate
16 Rubarb	8,247	8,003	244	3,393	3,442	40	3.1	0.1	0.4	Intermediate
16 Sawbuck	9,437	8,504	932	4,423	4,554	287	30.1	0.2	0.4	Intermediate
16 Stirrup	9,350	8,420	930	8,885	8,933	35	7.2	0.9	0.2	Novice
16 Tall Timber	8,366	8,216	150	1,161	1,178	34	0.9	0.1	0.3	Low Intermediate
17 Bear Paw	8,517	8,497	20	1,145	1,155	26	0.7	0.0	0.3	Low Intermediate
17 Cold Snap	8,531	8,487	44	446	451	26	0.3	0.1	0.2	Novice
17 Cresta	9,094	7,409	1,685	8,140	8,379	161	30.9	0.2	0.5	Adv. Intermediate
17 Crossbow	9,017	8,982	36	298	300	186	1.3	0.1	0.1	Novice
17 Everkrisp	8,332	8,276	56	675	682	40	0.6	0.1	0.2	Novice
17 Flint	7,831	7,538	293	1,028	1,079	229	5.7	0.3	0.5	Adv. Intermediate
17 Golden Bear	9,010	7,476	1,534	6,378	6,606	233	35.3	0.2	0.4	Intermediate
17 Homeowner Skiway	8,321	7,976	345	3,671	3,700	20	1.7	0.1	0.2	Novice
17 Larkspur	10,364	8,886	1,478	5,302	6,060	411	57.1	0.3	0.5	Intermediate
17 Little Brave	8,992	7,584	1,408	7,335	7,501	113	19.4	0.2	0.4	Intermediate
17 Piece O' Cake	9,110	7,605	1,505	15,367	15,524	18	6.5	0.1	0.4	Intermediate
17 Pow Wow	8,980	8,555	425	2,302	2,346	187	10.1	0.2	0.3	Low Intermediate
17 Ridge Rider	8,465	8,203	262	3,192	3,224	72	5.3	0.1	0.3	Low Intermediate
17 Roughlock	8,638	8,122	516	3,017	3,092	91	6.4	0.2	0.4	Intermediate
17 Springtooth	8,855	8,523	332	1,728	1,768	79	3.2	0.2	0.4	Intermediate

**TABLE 5-2:  
TERRAIN SPECIFICATIONS – UPGRADING PLAN**

Trail Name	Top Elev. (ft)	Bottom Elev. (ft)	Vert Drop (ft)	Horiz. Length (ft)	Slope Length (ft)	Avg Width (ft)	Area (acre)	Avg. Grade (%)	Max Grade (%)	Ability Level
17 Tomahawk	8,534	7,542	992	3,684	3,843	104	9.1	0.3	0.5	Adv. Intermediate
17 Wapti	9,080	8,109	971	3,884	4,024	133	12.3	0.2	0.5	Adv. Intermediate
18 BC Mtn Expressway	9,849	8,862	987	10,576	11,019	58	14.7	0.1	0.2	Novice
<i>12A (SW)</i>	<i>8,798</i>	<i>8,678</i>	<i>120</i>	<i>2,354</i>	<i>2,381</i>	<i>50</i>	<i>2.7</i>	<i>0.1</i>	<i>0.1</i>	<i>Intermediate</i>
<i>12B</i>	<i>9,806</i>	<i>9,064</i>	<i>743</i>	<i>2,923</i>	<i>3,027</i>	<i>125</i>	<i>8.7</i>	<i>0.3</i>	<i>0.4</i>	<i>Intermediate</i>
<i>12C</i>	<i>9,798</i>	<i>8,559</i>	<i>1,239</i>	<i>4,456</i>	<i>4,673</i>	<i>125</i>	<i>13.4</i>	<i>0.3</i>	<i>0.6</i>	<i>Expert</i>
<i>12D (SW)</i>	<i>9,285</i>	<i>9,190</i>	<i>95</i>	<i>1,259</i>	<i>1,265</i>	<i>50</i>	<i>1.5</i>	<i>0.1</i>	<i>0.2</i>	<i>Novice</i>
<i>16A</i>	<i>9,516</i>	<i>8,733</i>	<i>783</i>	<i>2,634</i>	<i>2,761</i>	<i>125</i>	<i>7.9</i>	<i>0.3</i>	<i>0.4</i>	<i>Intermediate</i>
<i>16B</i>	<i>9,278</i>	<i>8,663</i>	<i>615</i>	<i>2,119</i>	<i>2,215</i>	<i>125</i>	<i>6.4</i>	<i>0.3</i>	<i>0.4</i>	<i>Intermediate</i>
<i>16C</i>	<i>9,472</i>	<i>8,687</i>	<i>785</i>	<i>3,114</i>	<i>3,220</i>	<i>125</i>	<i>9.2</i>	<i>0.3</i>	<i>0.4</i>	<i>Intermediate</i>
<i>4A</i>	<i>10,171</i>	<i>9,769</i>	<i>401</i>	<i>781</i>	<i>880</i>	<i>125</i>	<i>2.5</i>	<i>0.5</i>	<i>0.6</i>	<i>Expert</i>
<i>4B (SW)</i>	<i>10,902</i>	<i>10,808</i>	<i>95</i>	<i>780</i>	<i>787</i>	<i>50</i>	<i>0.9</i>	<i>0.1</i>	<i>0.2</i>	<i>Novice</i>
<i>4C (SW)</i>	<i>10,899</i>	<i>10,852</i>	<i>46</i>	<i>288</i>	<i>292</i>	<i>50</i>	<i>0.3</i>	<i>0.2</i>	<i>0.2</i>	<i>Novice</i>
<i>6A</i>	<i>9,441</i>	<i>9,191</i>	<i>251</i>	<i>990</i>	<i>1,028</i>	<i>125</i>	<i>2.9</i>	<i>0.3</i>	<i>0.5</i>	<i>Intermediate</i>
<i>6B (SW)</i>	<i>8,890</i>	<i>8,842</i>	<i>48</i>	<i>787</i>	<i>807</i>	<i>50</i>	<i>0.9</i>	<i>0.1</i>	<i>0.3</i>	<i>Low Intermediate</i>
<i>9A</i>	<i>10,238</i>	<i>9,480</i>	<i>758</i>	<i>1,888</i>	<i>2,059</i>	<i>125</i>	<i>5.9</i>	<i>0.4</i>	<i>0.6</i>	<i>Expert</i>
<i>9B</i>	<i>9,292</i>	<i>8,888</i>	<i>404</i>	<i>1,853</i>	<i>1,904</i>	<i>125</i>	<i>5.5</i>	<i>0.2</i>	<i>0.3</i>	<i>Low Intermediate</i>
<i>MP-A</i>	<i>10,024</i>	<i>9,710</i>	<i>314</i>	<i>1,421</i>	<i>1,460</i>	<i>125</i>	<i>4.2</i>	<i>0.2</i>	<i>0.3</i>	<i>Low Intermediate</i>
<i>MP-B</i>	<i>10,065</i>	<i>9,815</i>	<i>250</i>	<i>1,235</i>	<i>1,261</i>	<i>125</i>	<i>3.6</i>	<i>0.2</i>	<i>0.3</i>	<i>Low Intermediate</i>
<i>MP-C</i>	<i>10,112</i>	<i>9,706</i>	<i>406</i>	<i>1,878</i>	<i>1,948</i>	<i>125</i>	<i>5.6</i>	<i>0.2</i>	<i>0.3</i>	<i>Low Intermediate</i>
<i>MP-D</i>	<i>10,221</i>	<i>9,681</i>	<i>539</i>	<i>2,893</i>	<i>2,944</i>	<i>125</i>	<i>8.4</i>	<i>0.2</i>	<i>0.2</i>	<i>Novice</i>
<i>MP-E</i>	<i>10,302</i>	<i>9,664</i>	<i>638</i>	<i>3,868</i>	<i>3,923</i>	<i>125</i>	<i>11.3</i>	<i>0.2</i>	<i>0.2</i>	<i>Novice</i>
<i>MP-F</i>	<i>10,244</i>	<i>9,645</i>	<i>599</i>	<i>3,988</i>	<i>4,038</i>	<i>125</i>	<i>11.6</i>	<i>0.2</i>	<i>0.3</i>	<i>Low Intermediate</i>
<i>MP-G</i>	<i>10,030</i>	<i>9,633</i>	<i>397</i>	<i>2,279</i>	<i>2,316</i>	<i>125</i>	<i>6.6</i>	<i>0.2</i>	<i>0.3</i>	<i>Low Intermediate</i>
<i>MP-H</i>	<i>9,909</i>	<i>9,648</i>	<i>261</i>	<i>1,757</i>	<i>1,776</i>	<i>125</i>	<i>5.1</i>	<i>0.1</i>	<i>0.2</i>	<i>Novice</i>
<i>MP-I</i>	<i>9,908</i>	<i>9,717</i>	<i>191</i>	<i>953</i>	<i>973</i>	<i>125</i>	<i>2.8</i>	<i>0.2</i>	<i>0.3</i>	<i>Low Intermediate</i>
<i>MP-J (SW)</i>	<i>10,322</i>	<i>9,608</i>	<i>714</i>	<i>7,760</i>	<i>7,800</i>	<i>50</i>	<i>9.0</i>	<i>0.1</i>	<i>0.2</i>	<i>Novice</i>
<i>MP-K(SW)</i>	<i>9,848</i>	<i>9,608</i>	<i>240</i>	<i>3,084</i>	<i>3,097</i>	<i>50</i>	<i>3.6</i>	<i>0.1</i>	<i>0.1</i>	<i>Novice</i>
<i>MP-L (SW)</i>	<i>10,322</i>	<i>10,017</i>	<i>305</i>	<i>3,458</i>	<i>3,553</i>	<i>50</i>	<i>4.1</i>	<i>0.1</i>	<i>0.2</i>	<i>Novice</i>
<i>MP-M (SW)</i>	<i>10,213</i>	<i>10,159</i>	<i>54</i>	<i>849</i>	<i>851</i>	<i>50</i>	<i>1.0</i>	<i>0.1</i>	<i>0.1</i>	<i>Novice</i>
20 Beginner Terrain			6	80	80	100	0.2	0.1	0.1	Beginner
21 Beginner Terrain			6	80	80	120	0.2	0.1	0.1	Beginner
22 Beginner Terrain			29	238	240	110	0.6	0.1	0.1	Beginner
23 Beginner Terrain			17	119	120	140	0.4	0.1	0.1	Beginner

**TABLE 5-2:  
TERRAIN SPECIFICATIONS – UPGRADING PLAN**

Trail Name	Top Elev. (ft)	Bottom Elev. (ft)	Vert Drop (ft)	Horiz. Length (ft)	Slope Length (ft)	Avg Width (ft)	Area (acre)	Avg. Grade (%)	Max Grade (%)	Ability Level
24 Beginner Terrain			230	1,500	1,518	160	5.6	0.2	0.1	Beginner
26 Beginner Terrain			27	299	300	130	0.9	0.1	0.1	Beginner
27 Beginner Terrain			10	120	120	90	0.2	0.1	0.1	Beginner
28 Beginner Terrain			13	109	110	120	0.3	0.1	0.1	Beginner
29 Beginner Terrain			47	317	320	160	1.2	0.2	0.1	Beginner
<b>SP-1</b>	<b>9,840</b>	<b>9,795</b>	<b>45</b>	<b>496</b>	<b>500</b>	<b>200</b>	<b>2.3</b>	<b>0.1</b>	<b>0.1</b>	<b>Beginner</b>
<b>SP-2</b>	<b>9,825</b>	<b>9,795</b>	<b>30</b>	<b>298</b>	<b>300</b>	<b>200</b>	<b>1.4</b>	<b>0.1</b>	<b>0.1</b>	<b>Beginner</b>
<b>TOTAL</b>					<b>532,774</b>		<b>1,912.8</b>			

The following table and charts illustrate the distribution of terrain by skier ability level for the planned trail network, as well as the distribution of the active skier population at Beaver Creek. The terrain distribution is compared to the industry norm. These exhibits show that the upgraded trail network at Beaver Creek accommodates a range of skier ability levels—from beginner to expert—responding to the MDP goal of enhancing the variety of ski and snowboard terrain for all segments of the skier population, from expert and first-time skiers.

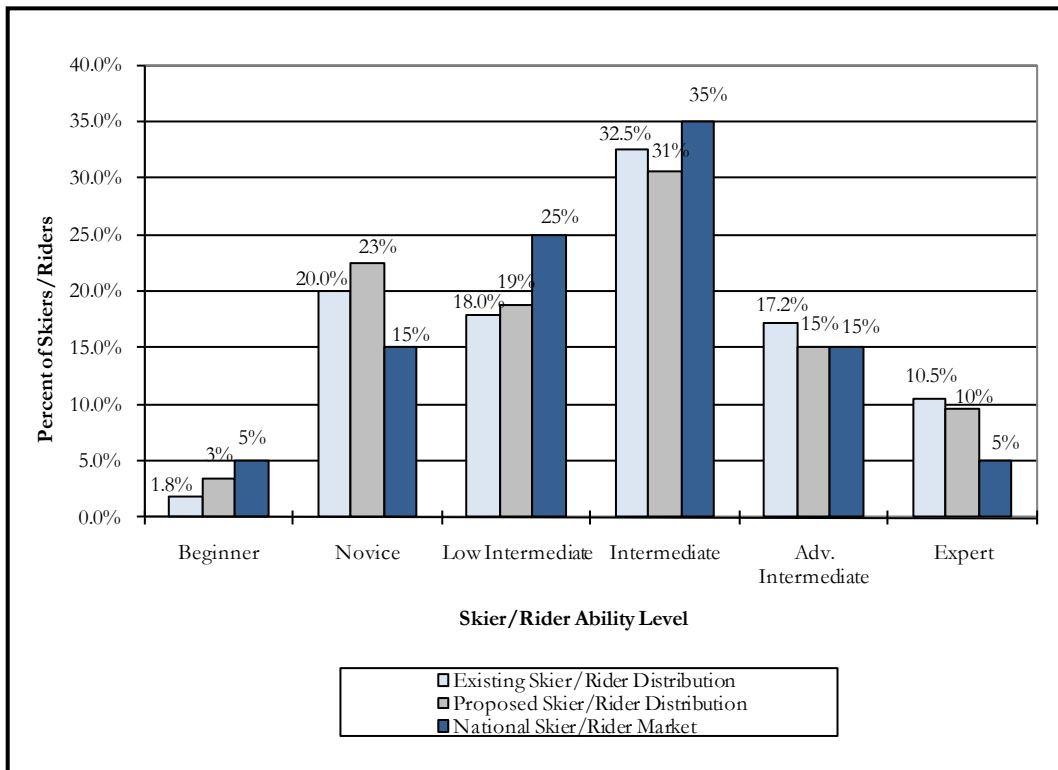
The terrain distribution for the upgrading plan at Beaver Creek as illustrated in Table 5-3 shows a notable (120 percent) increase in beginner terrain—from 6.8 acres to 14.8 acres, bringing the resort closer to the Central Rocky Mountain market. Low intermediate terrain, which is also deficient at Beaver Creek, increases by roughly 41 acres (20 percent) under the Upgrading Plan. However, because the resort’s total amount of skiable terrain increases under the Upgrading Plan, the contribution of low intermediate terrain as a percentage of the resort total is less obvious, but it is important nonetheless. Increases in beginner and low intermediate terrain are in direct response to achieving Beaver Creeks’ stated goals and objectives.

**TABLE 5-3:  
TERRAIN CAPACITY DISTRIBUTION BY ABILITY LEVEL – UPGRADING PLAN**

Skier/Rider Ability Level	Trail Area (acres)	Skier/Rider Capacity (guests)	Beaver Creek Skier/Rider Distribution (%)	Skier/Rider Market (%)
Beginner	14.8	370.8	3.5	5
Novice	199.9	2398.8	22.6	15
Low Intermediate	249.5	1995.9	18.8	25
Intermediate	541.1	3246.9	30.6	35
Adv. Intermediate	399.9	1599.5	15.1	15
Expert	507.6	1015.2	9.6	5
<b>TOTAL</b>	<b>1912.8</b>	<b>10,627</b>	<b>100</b>	<b>100</b>



**CHART 5-1:  
TERRAIN CAPACITY DISTRIBUTION BY ABILITY LEVEL – UPGRADING PLAN**



### 1. Bachelor Gulch

There are three new intermediate-level groomed gladed areas (16A, B and C) planned on the private land in the Bachelor Gulch area. These groomed glades provide an alternative tree skiing experience for intermediate skiers.

A new trail (16D) will provide a top-to-bottom novice trail in Bachelor Gulch, which is currently unavailable from chair 16. The majority of this trail is also located on private land.

### 2. Strawberry Park/Western Hillside

The central area of the Western Hillside terrain is naturally gladed, but currently has no means of egress. As a result, it is closed to the public. A planned egress route (12A) would allow much of this naturally gladed terrain to be opened for skiing.

A new intermediate interconnect trail (12B) will provide a route between the Larkspur and the Strawberry Park Express terrain, and access back to the Beaver Creek base village.

A new intermediate trail (12C) follows the line of the existing Thresher Glades providing additional round trip skiing terrain for the Strawberry Park Express lift.

A new connector trail (12D) from Bachelor Gulch to the Strawberry Park Express terrain will provide an alternate route to spread out traffic between Bachelor Gulch and the village.

### **3. McCoy Park**

Table 3-3 identifies an existing deficit of beginner and low intermediate terrain at Beaver Creek. Addressing this terrain deficiency is a critical step in achieving Beaver Creek's goal of maintaining and improving its position as one of the top family ski destinations in the world. The large open bowl that defines McCoy Park represents a tremendous opportunity for providing needed beginner, novice and low intermediate Alpine skiing terrain, and is a logical extension of ski area infrastructure. Furthermore, the planned McCoy Park pod (identified on Figure 5-2) will be easily accessible via the Strawberry Park Gondola, the Larkspur Express (via planned skiways), or from the Lower/Upper Beaver Creek Mountain Express. McCoy Park is extremely accessible for low- and intermediate-level skiers and riders, is protected from the wind, and has excellent potential for providing a logical terrain progression for new skiers and riders. Furthermore, it is within Beaver Creek's SUP area, and is identified as a "Future Expansion Area" in the 2002 WRNF Land and Resource Management Plan.

Planned terrain in McCoy Park totals approximately 77 acres. While a portion of the existing Nordic loop will be retained, some Nordic trails will need to be removed to avoid intersecting planned Alpine trails. The terrain here is already relatively open, requiring very little cutting ( $\pm 10$  acres); much of the timber in the upper basin was clear-cut a century ago. Planned novice and low intermediate terrain will be served by a new high-speed quad chairlift. In addition, a planned triple chairlift will enable expedited egress out of the McCoy Park pod, providing easy access to: the Strawberry Park pod; the Upper/Lower Beaver Creek Express pod(s); Bachelor Gulch; and the planned Strawberry Restaurant. Two new carpet conveyor lifts will serve additional beginner terrain within the pod.

In summary, McCoy Park is a clear choice for meeting Beaver Creek's need for additional beginner and low intermediate terrain and commitment to sustainability. McCoy Park can be developed with a "light on the land" approach: i.e., one lift and approximately 10 acres of vegetation removal will open up almost 80 acres of new beginner and intermediate terrain. Importantly, McCoy Park is sufficiently isolated from other lift/terrain pods at Beaver Creek that beginner and intermediate-level skiers and riders will not be intimidated by higher ability level skiers and riders passing through the area.

### **4. Centennial Express**

A new low intermediate trail (6A) will follow the existing line of the Head's Up glades. This trail will be created as the result of timber removal to create a glade.

A new novice trail (6B) will cut through the lower end of the 4get About It glades, allowing lower intermediate guests an alternative to skiing the lower, steeper terrain of Lower Centennial, Buckboard or Bear Trap. This new traverse will allow guests access over to Latigo, Gold Dust or the novice Cinch trail.

A new low intermediate trail (6C) between Bootleg and Buckaroo follows the area of previously approved, not yet implemented snowmaking (see Figure 5-4).

## **5. Rose Bowl**

To diversify the terrain offered in Rose Bowl, a new expert trail (4A) is planned from the lower Ripsaw trail over to lower Web.

The planned extension of the Rose Bowl lift will require access trails (4B and 4C) from the top terminal toward both the Stone Creek Chutes and Birds of Prey terrain.

### **C. TERRAIN PARKS**

As with any ski area, Beaver Creek's terrain parks evolve along with the sport. Beaver Creek will continue modifying features to respond to ever-changing market demands and specific circulation needs. As opportunities present themselves in appropriate locations, Beaver Creek will convert feature construction from snow to partial 'dirt', in an effort to reduce snowmaking needs, which may increase the sustainability of Beaver Creek's operations through decreased energy consumption.

### **D. RACE VENUES**

As noted in Chapter 3, Vail/Beaver Creek has been selected to host the 2015 World Alpine Championships. Because the FIS requires a separate venue for men's and women's Alpine events, new women's downhill and giant slalom courses are planned. Vegetation removal related to the downhill and giant slalom courses is shown on Figure 5-2. The women's downhill course will more-or-less parallel the Birds of Prey<sup>TM</sup> course, requiring widening along Flat Tops and construction of a new trail (planned Trail 9A) off of Peregrine. The women's giant slalom course planned on Grouse Mountain will require vegetation removal along Raven Edge and Golden Eagle, and will be served by the Grouse Mountain Express. Additional snowmaking coverage (discussed in Section 5G) will be necessary for both the women's downhill and giant slalom course. Also, start houses, fencing (A and B types) and gates will be installed commensurate with final orientation and operation of the race courses.

Red Tail Camp will continue to serve as the finish area for Alpine race events. However, in order to function for men's and women's events – including downhill, giant slalom, slalom and Super G – the Red Tail Camp area will need to be completely re-graded and re-configured. This will involve, among other things:

- Removing, rebuilding and relocating the Red Tail Camp Restaurant
- Replacing and extending existing utilities (power, water, sewer)
- Expanding the existing TV compound
- Relocating the existing race timing building that is currently in the center of the finish area
- Culverting an approximate 150 foot segment of Westfall Creek
- Relocating/replacing TV commentator booths
- Installing a new 150,000-gallon domestic water tank at the intersection of the Beaver Creek Expressway and Paint Brush

The addition of women's downhill and giant slalom race courses will complement the existing Birds of Prey™ men's race course, and will allow Beaver Creek to compete on the world stage for hosting major international ski racing competitions well into the future.

## **E. RESORT CAPACITY**

### **1. Beaver Creek's Manage-To Process**

Beaver Creek is planning to change the Manage-To number from 11,000 to 13,000 to reflect changed conditions since the original number was determined.

Beaver Creek recognize that the threshold limits of skiers, as well as perceived limits to carrying capacity (particularly traffic, parking, and on-mountain ingress and egress) can be altered by a variety of important factors. Increasing the Manage-To threshold at Beaver Creek is based on the following factors:

- decisions to expand mass transit, improve parking capacities and efficiencies, improved roadways and intersections,
- changes to basic land use patterns,
- changes in bed base, and
- improved technologies that allow for better distribution of skiers (e.g., high speed lifts).

As previously discussed, the Manage-To threshold (11,000) is derived from a combination of the 1976 Environmental Assessment Report, which approved Beaver Creek for 9,000 skiers at one time, and the Eagle County approval of the Arrowhead Ski Area for 2,000 skiers at one time. Beaver Creek desires to preserve a CCC in excess of the planned Manage-To threshold of 13,000, in order to ensure a quality experience that provides a challenge for the majority of the ski/snowboard market, and a consistently great guest experience for all guests.

### **2. Comfortable Carrying Capacity**

The calculation of Beaver Creek's CCC under the Upgrading Plan is described in the following table. As shown, the upgrading program increases the CCC of the lifts at Beaver Creek to roughly 18,560 guests per day, an increase of 2,920 guests, or 17 percent. Again, Beaver Creek desires to preserve a CCC in excess of the existing Manage-To threshold (planned to increase to 13,000) in order to ensure a consistently great guest experience for all guests. This is consistent with the resort's goal of maintaining or improving its position as one of the top family ski destinations in the world.

**TABLE 5-4:  
CALCULATION OF COMFORTABLE CARRYING CAPACITY – UPGRADING PLAN**

Lift #	Lift Name	Slope Length	Vert. Rise	Hourly Capacity	Oper. Hours	Transport Reduction Factor	Misload. Stopping	Adjusted Hourly Capacity	VTF/ Day	Vert. Demand	CCC
		(ft.)	(ft.)	(pers/hr)	(hrs)	(%)	(%)	(pers/hr)	(000)	(ft./day)	(guests)
1	Buckaroo Gondola	1,712	336	1,800	7.00	30	5	1,170	2,752	5,241	530
2	Highlands Triple	1,195	196	1,500	7.00	0	10	1,350	1,852	3,303	560
4	Rose Bowl Express	6,315	1,595	2,400	7.00	0	5	2,280	25,456	19,676	1,290
5	Drink of Water Double	4,335	795	1,200	7.00	0	10	1,080	6,010	7,260	830
6	Centennial Express	7,735	2,102	3,200	7.00	10	5	2,720	40,022	21,922	1,830
8	Cinch Express	5,975	1,255	2,400	7.00	0	5	2,280	20,030	16,190	1,240
9	Birds of Prey Express	6,453	2,162	2,400	7.00	0	5	2,280	34,506	27,816	1,240
10	Grouse Mountain Express	5,370	1,806	2,400	7.00	0	5	2,280	28,824	26,760	1,080
11	Larkspur Express	5,566	1,529	2,400	7.00	0	5	2,280	24,403	17,729	1,380
12	Strawberry Park Gondola	6,912	1,742	2,600	7.00	10	5	2,210	26,949	16,840	1,600
14	Elkhorn Triple	5,358	1,317	1,246	7.00	90	8	25	230	13,795	20
15	Lower BC Mtn Express	6,406	907	2,400	7.00	90	5	120	762	9,375	80
16	Bachelor Gulch Express	6,255	1,447	2,400	7.00	5	5	2,160	21,879	15,201	1,440
17	Arrow Bahn Express	7,962	1,713	2,187	7.00	20	5	1,640	19,669	14,688	1,340
18	Upper BC Mtn Express	8,590	1,482	2,400	7.00	80	5	360	3,735	11,948	310
20	BC Magic Carpet	80	6	1,500	7.00	0	10	1,350	60	537	110
21	Bibber Bahn	80	6	1,500	7.00	0	10	1,350	60	521	120
22	Highlands Bahn	240	29	1,500	7.00	0	10	1,350	272	1,426	190
23	Ritz Bahn	120	17	1,500	7.00	0	10	1,350	161	1,191	140
24	Cabin Fever	1,518	230	900	7.00	0	10	810	1,304	4,019	320
26	Gold Bahn	300	27	1,500	7.00	0	10	1,350	255	1,165	220
27	Silver Bahn	120	10	1,500	7.00	0	10	1,350	91	673	140
28	Kerch Bahn	110	13	1,500	7.00	0	10	1,350	125	958	130
29	Haymaker	320	47	1,500	7.00	0	10	1,350	444	1,945	230
30	Strawberry Carpet 1	500	45	1,500	7.00	0	10	1,350	425	1,361	310
31	Strawberry Carpet 2	300	30	1,500	7.00	0	10	1,350	284	1,296	220
32	McCoy Park Quad	4,746	710	2,400	7.00	0	5	2,280	11,332	6,909	1,640
33	McCoy Egress	2,022	300	1,200	7.00	85	10	60	126	5,603	20
	<b>TOTAL</b>	<b>96,595</b>		<b>52,433</b>				<b>40,885</b>	<b>272,018</b>		<b>18,560</b>

## F. RESORT DENSITY ANALYSIS

At any one time, the aggregate skier population is dispersed throughout the resort, either at guest services buildings and milling areas, waiting in lift mazes, riding lifts, or skiing on the trails. The proportion of skiers that will be using the trail network at any given time, based upon the CCC calculation, is illustrated in Table 5-5 below. The total number of skiers using the trail network at any one time can be compared to the estimated *capacity* of the ski terrain (as determined in Table 3-3) to determine if a sufficient amount of terrain has been planned to balance trail capacity with the overall CCC.

Of the total skier population, 15 to 40 percent of each lift's capacity will be using guest service facilities or milling areas at any one time (i.e., over the course of the day, skiers will be actively skiing 60 to 85 percent of the time—the equivalent of four to six hours). This 15 to 40 percent of the skier population is the resort's inactive population.

The remaining 60 to 85 percent of visitors at the resort make up the active skier population who are either in lift lines, on lifts, or on trails. Typically, 25 to 60 percent of the resort's active skier population will be on the slopes while the remaining skiers will be riding the lifts or waiting in lift lines. The number of skiers 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. (For purposes of master planning, lift lines at Beaver Creek have been estimated to range from two to ten minutes.) The number of guests riding on each lift is the product of the number of carriers on the uphill line and the capacity of the lift's carriers. The remainder of the skier/snowboarder population (i.e., 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 actively skiing/riding.

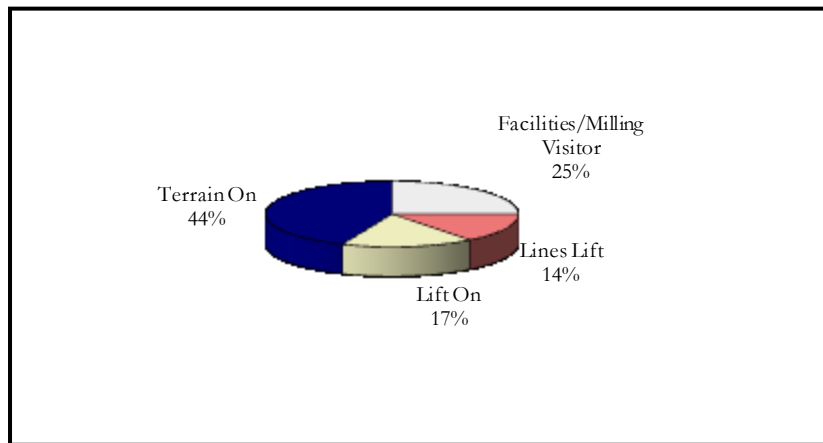
Based upon an estimated CCC of 18,560 guests, the estimated disbursement of Beaver Creek's skiers is illustrated in the following table and chart.



**TABLE 5-5:  
DISTRIBUTION OF SKIER POPULATION – UPGRADING PLAN**

Lift #	Lift Name	Daily Capacity	Disbursement of Skier/Rider Population			
			Support Fac./Milling	Lift Lines	On Lift	Skiers on Trails
		(CCC)	(Skiers)	(Skiers)	(Skiers)	
1	Buckaroo Gondola	530	133	98	56	243
2	Highlands Triple	560	140	113	90	217
4	Rose Bowl Express	1,290	323	190	240	537
5	Drink of Water Double	830	208	90	156	376
6	Centennial Express	1,830	458	227	351	794
8	Cinch Express	1,240	310	190	227	513
9	Birds of Prey Express	1,240	310	190	245	495
10	Grouse Mountain Express	1,080	270	190	207	413
11	Larkspur Express	1,380	345	190	212	633
12	Strawberry Park Gondola	1,600	400	184	259	757
14	Elkhorn Triple	20	5	1	5	9
15	Lower BC Mtn Express	80	20	10	13	37
16	Bachelor Gulch Express	1,440	360	180	229	671
17	Arrow Bahn Express	1,340	335	137	221	647
18	Upper BC Mtn Express	310	78	30	52	150
20	BC Magic Carpet	110	28	45	11	26
21	Bibber Bahn	120	30	45	11	34
22	Highlands Bahn	190	48	45	34	63
23	Ritz Bahn	140	35	45	18	42
24	Cabin Fever	320	80	27	68	145
26	Gold Bahn	220	55	45	43	77
27	Silver Bahn	140	35	45	17	43
28	Kerch Bahn	130	33	45	16	36
29	Haymaker	230	58	45	48	79
30	Strawberry Carpet 1	310	78	45	72	115
31	Strawberry Carpet 2	220	55	45	43	77
32	McCoy Park Quad	1,640	410	190	180	860
33	McCoy Egress	20	5	2	4	9
	<b>TOTAL</b>	<b>18,560</b>	<b>4,645</b>	<b>2,689</b>	<b>3,128</b>	<b>8,098</b>

**CHART 5-2:  
DISTRIBUTION OF SKIER POPULATION – UPGRADING PLANS**



The table and chart show that based on the total 18,560 CCC, a theoretical maximum of 8,098 skiers (44 percent) could be on the ski trails at one time (a proportion that falls within the typical 25 to 60 percent range). Given the lower (planned) Manage-To threshold of 13,000, 8,098 skiers (44%) are anticipated to be on the ski trails at one time. However, higher densities of skiers can be expected at other areas such as lift mazes, merge zones, egress routes, and areas near special events. As calculated in Table 5-3, the existing trail network has an estimated skier capacity of 10,627 skiers. This illustrates that the trail capacity will continue to exceed the proportion of the CCC on the terrain at any given time, resulting in a maintained low terrain density. This is in keeping with Beaver Creek's goal to provide the highest quality recreational experience possible.

## **G. MAINTENANCE FACILITIES, UTILITIES, SNOWMAKING COVERAGE, AND GROOMING**

### **1. Snowcat Maintenance Garage**

In order to accommodate minor maintenance needs of snowcats without having to return to the Service Center located at the base area, an on-mountain maintenance facility is needed. Therefore, a new Snowcat Maintenance Garage/Storage Facility is planned to be located on the west side of the Centennial Express near the top of Harrier. This is the existing site of the World Cup storage facility. An on-hill maintenance facility for snowcats and snowmachines will keep this vehicular traffic out of the base area, minimize skier/snowmachine interaction on-mountain, and increase efficiency, which should result in lower fuel consumption and greater sustainability of Beaver Creek's operations.

The new facility will be approximately 6,000 square feet, and will include four snowcat bays, restrooms and lockers.

### **2. Mountain Access Road**

A new mountain access road is planned from the top of the Buckaroo gondola over to the existing mountain access road. This new road will decrease the summertime maintenance traffic through the upper village. This route is currently a 10-foot wide horse trail, and would need to be widened to accommodate summer truck traffic.

### **3. Utilities**

#### **Domestic Water**

A new 150,000-gallon water tank is planned to be located at the intersection of the Beaver Creek Expressway and Paint Brush. This location is necessary in order to provide necessary static head pressure for downhill domestic water and fire suppression needs at Beano's Cabin and Red Tail Camp. Additional distribution lines will also be necessary. This tank will also decrease the demand placed on the existing Spruce Saddle Tank.

An additional water tank is associated with the planned restaurant at the top of the Strawberry Park Express gondola. The tank will be located on the ridge above the planned restaurant.

The existing water line from the Spruce Saddle Tank is 30 years old and is due to be replaced in the short-term.

### **4. Snowmaking**

Currently Beaver Creek has water rights adjudicated for a withdrawal rate of twelve cubic feet per second (cfs) from the Eagle River and an approved withdrawal rate of 7.5 cfs. The resort is in the process of bringing the withdrawal rate up to the water right amount.

Beaver Creek currently holds water rights that are more than adequate for this Upgrading Plan (i.e., existing + previously approved + planned). The court-approved decrees for these rights include operating constraints and requirements for augmentation that assure the protection of the minimum stream flow water rights that have been established by the Colorado Water Conservation Board for Gore Creek and the Eagle River. Stream flow augmentation sources in which Beaver Creek holds Water rights include Black Lakes, Homestake Reservoir and Eagle Park Reservoir.

The snowmaking upgrading plan is intended to enhance the reliability and consistency of the skiing surface in response to site-specific operational concerns, including but not limited to:

- below average natural snowfall,
- high snow wear areas,
- critical circulation routes, and
- areas with high wind and or intense solar exposure (i.e., south-facing slopes).

Site specific locations of future pipes, valves, vaults, pumps, pressure controls, air compressor equipment and associated structures on Forest Service lands will be detailed in subsequent site specific proposals.

Much of the snowmaking plan features previously approved, not yet implemented coverage. New coverage is associated with the planned women's downhill course. In addition, new coverage is planned for Upper Sheephorn (between the Rose Bowl lift and the Cinch Express) which will allow Beaver Creek to relocate the NASTAR course. This relocation is designed to resolve historic circulation issues in the Centennial Pod when races force certain key trails to be closed off to the public. New, replaced and extended snowmaking infrastructure is also planned on Peregrine and planned Trail 9A to accommodate the new women's downhill race course. Likewise, new

snowmaking infrastructure is planned for the women's giant slalom course on Grouse Mountain. Refer to Figure 5-4 – Planned Snowmaking to for the location of existing, previously-approved/not-yet-implemented and new snowmaking.

In the future, Beaver Creek's snowmaking system will require continuing maintenance (i.e., replacement of aging infrastructure) to ensure that it operates effectively and efficiently.

The additional snowmaking coverage illustrated on the plan increases Beaver Creek's coverage by approximately 193 acres, for a total of approximately 840 acres. Of this total, 357 acres of coverage occurs on private land (331 acres existing and 26 acres planned) and 483 acres occurs on USFS land (317 acres existing, 147 acres previously approved and 20 acres planned).





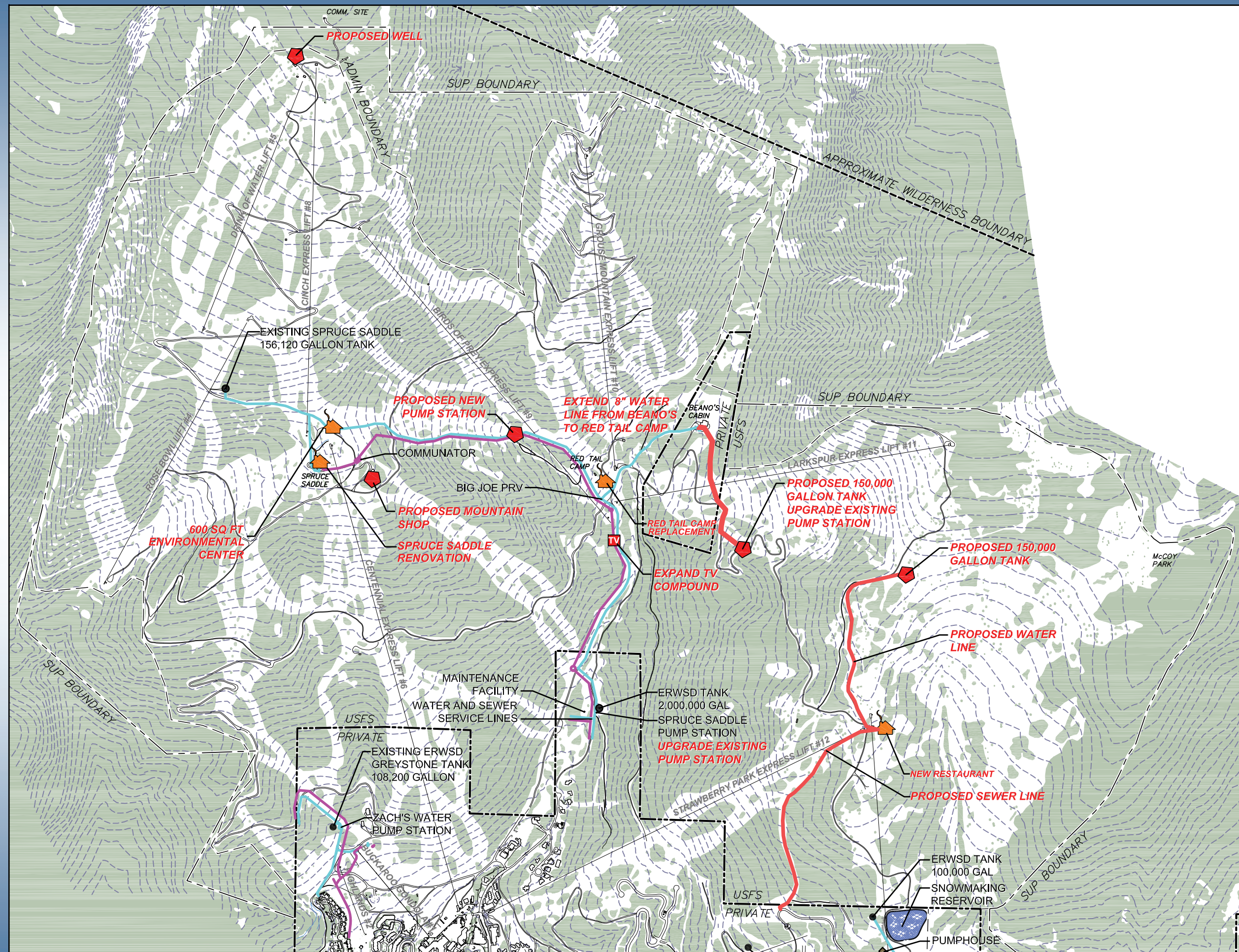
BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 5 - 3

PROPOSED INFRASTRUCTURE,  
WATER AND SANITATION FACILITIES

LEGEND

- EXISTING LIFTS AND TRAILS
- EXISTING SEWER LINE
- EXISTING WATER LINE
- PROPOSED UTILITY PROJECT
- PROPOSED RESTAURANT
- PROPOSED UTILITY LINE



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM



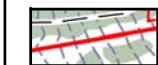


BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 5 - 4

PROPOSED AND PREVIOUSLY APPROVED  
SNOWMAKING

LEGEND



EXISTING LIFTS AND TRAILS



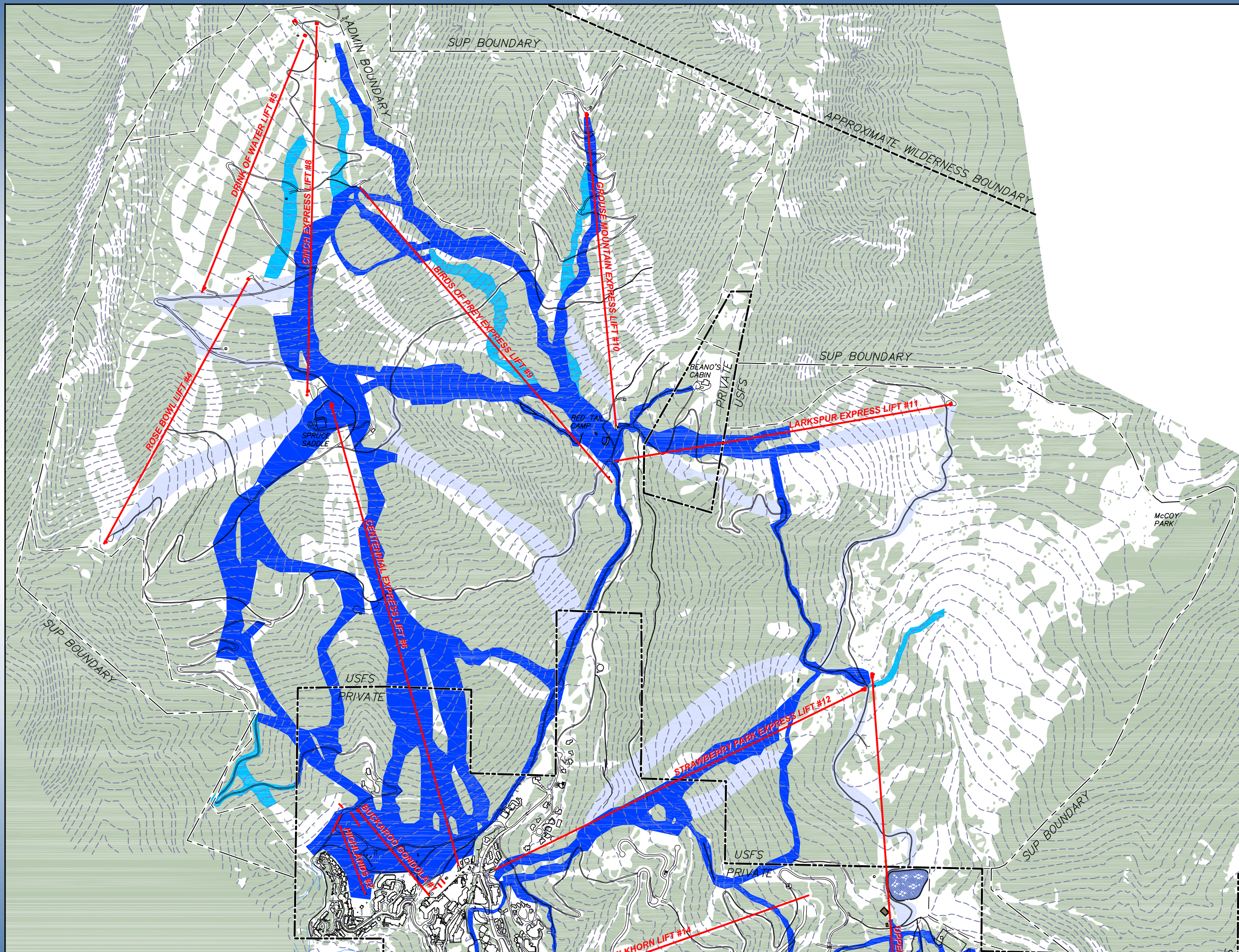
EXISTING SNOWMAKING



PREVIOUSLY APPROVED  
SNOWMAKING



PROPOSED SNOWMAKING



50' CONTOUR INTERVAL



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM



## **H. ALTERNATIVE EXPERIENCE AREA UPGRADE PLAN**

An area around Spruce Saddle has been identified as an Alternate Experience Area on the Zoning Map. Refer to the associated descriptions for additional information.

## **I. ALTERNATIVE EXPERIENCE**

### **1. Hay Meadow**

Beaver Creek does not currently have any plans for non-skiing based activities in Hay Meadow. The children's snowtubing facility will likely stay in its current configuration. Although Beaver Creek pursued approval to construct and operate an Alpine coaster in Hay Meadow recently, this project has been postponed pending further review by Vail Resorts.

### **2. McCoy Park**

The existing McCoy Park Nordic skiing trails will be reconfigured to accommodate planned Alpine skiing in the area. No multiple-use trails or other non-winter activities are planned for McCoy Park.

As always, Beaver Creek will explore new opportunities for providing summer recreation.

### **3. Trails**

In addition to the existing summer trail system at Beaver Creek, a new multiple use trail is planned to connect the work road which runs parallel to, and below, the Royal Elk hiking trail with the work road that runs between the Overlook hiking trail and Red Tail Camp. A second new trail will connect the existing Village to Village and Day Break Ridge multi use trails. These trails would total approximately 9.6 miles.

See Figure 5-5 for the locations of planned trails.





BEAVER CREEK RESORT  
2010 MASTER DEVELOPMENT PLAN

FIGURE 5 - 5

PROPOSED SUMMER TRAILS  
AND ALTERNATE ACTIVITIES

LEGEND



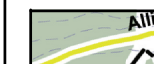
EXISTING LIFTS AND TRAILS



EXISTING HIKING TRAIL



EXISTING BIKING TRAIL



EXISTING MULTI-USE TRAIL



DISC GOLF AREA



PROPOSED MULTI-USE TRAIL



NORTH

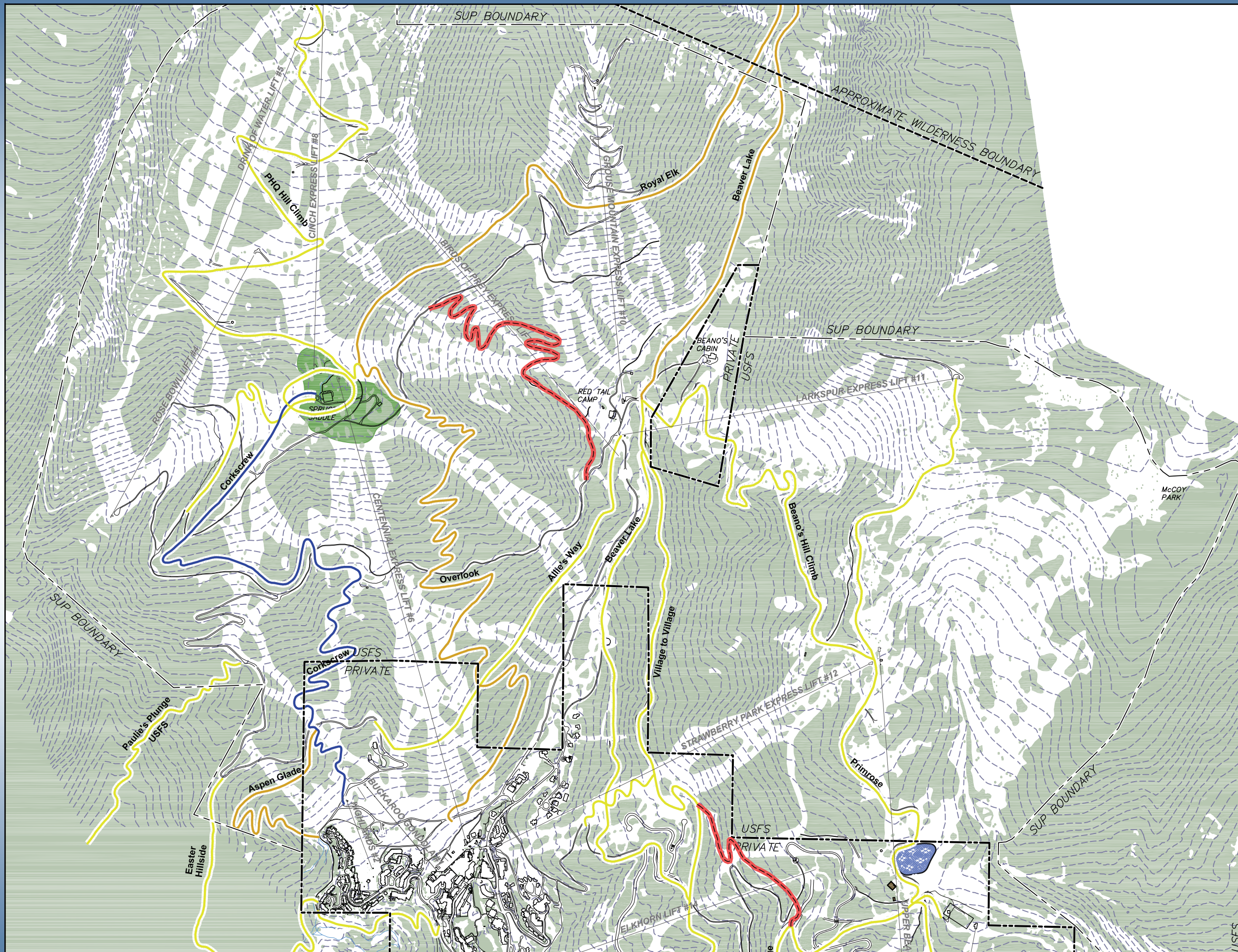
50' CONTOUR INTERVAL



PREPARED BY:



WASHINGTON UTAH COLORADO VERMONT  
WWW.SEGROUP.COM





## **J. SKIER SERVICES UPGRADE PLAN**

### **1. Spruce Saddle Renovation**

The Spruce Saddle facility is planned to be remodeled to add 100 indoor seats. The addition of an umbrella bar is an option for adding more seating.

### **2. Red Tail Camp**

The existing Red Tail Camp facility is planned to be removed and replaced with a new building. The new facility, in a yet-to-be determined location in the Red Tail Camp area, will accommodate approximately 600 indoor seats (500 indoor cafeteria seats and 100 indoor table service seats), and roughly 160 outdoor seats. This is an integral component of Beaver Creek's ability to host international Alpine racing events in the future.

### **3. Strawberry Park Restaurant**

A new 300 indoor/200 outdoor seat restaurant is planned for the top of the Strawberry Park Express gondola. The new restaurant will service the expanded McCoy Park terrain, and will provide publicly-accessible food service to the western hillside and Bachelor Gulch terrain which is currently only served by private clubs (Zach's, Allie's, and Beano's).

### **4. Spruce Saddle Environmental Center**

A new 600-square foot facility will provide year-round environmental education opportunities. The facility will consolidate on-mountain guest service programs including the Mountain Host program, Ski with a Ranger, and Children's Ski School Skecology. Educational displays and trained naturalists will engage guests with local history, ecology and environmental stewardship.

The following table summarizes the planned guest service facilities at Beaver Creek.

**TABLE 5-6:  
PLANNED GUEST SERVICE FACILITIES**

Service Function	Base Area				On-mountain								
	Beaver Creek Village	Bachelor Gulch Village	Arrowhead Village	Beaver Creek Landing	<i>Spruce Saddle</i>	<i>Red Tail Camp</i>	Allie's Cabin	Beano's Cabin	Zach's Cabin	Arrowhead Mountain Club	<i>Strawberry Park Restaurant</i>	The Ranch	Mamie's
Ticket Sales	X	X	X	X									
Public Lockers	X	X	X	X	X								
Rentals/Repair	XO	XO	XO	XO	X		X						
Retail Sales	XO	XO	XO	X	X	X	X	X	O	O	X		
Bar/lounge	XO	XO	XO	O	X	X	X	X	X		X		
Adult Ski School	X	X	X	X	X								
Kid's Ski School	X		X		X							X	
Restaurant Seating - Indoor	XO	XO	XO	O	X	X	X	X	X	X	X	X	X
Rest rooms	X	X	X	X	X	X	X	X	X	X	X	X	
Ski Patrol*	X				X								
Administration	X	X	X		X	X							

X = operated by Beaver Creek Resorts

O = operated by others

Italicized facilities indicate upgrades

\*Patrol outposts are located at the top of lifts 10, 12 and 16.

## K. RESTAURANT SEATING

On-mountain indoor restaurant seating will continue to be provided at Spruce Saddle, Red Tail Camp, Allie's Cabin, Beano's Cabin, Zach's Cabin, and Broken Arrow Cafe. Additional food service is provided in several village locations (on private lands) by third party entities. In addition to the on-mountain indoor seating currently provided, a 300-seat restaurant is planned at the top of the Strawberry Park Express gondola.

The following table summarizes the planned seating at Beaver Creek.



**TABLE 5-7:  
PLANNED RESTAURANT SEATING**

<b>Restaurant</b>	<b>Indoor Seating</b>	<b>Outdoor Seating</b>	<b>Total Seating</b>	<b>Average Seat Turnover</b>	<b>Nice Day Capacity</b>	<b>Adverse Day Capacity</b>
Spruce Saddle	1,420	360	1,780	2.75	4,895.0	3,905.0
Red Tail Camp	600	160	760	3.0	1,680.0	1,200.0
Allie's Cabin	120	40	160	2.5	400.0	300.0
Beano's Cabin	144	40	184	2.5	460.0	360.0
Zach's Cabin	160	8	168	2.5	420.0	400.0
Broken Arrow Café	95	175	270	3.0	810.0	285.0
Strawberry Park	300	200	500	0	0.0	0.0
The Ranch	100	0	100	2.5	250.0	250.0
Mamie's	25	125	150	3.0	450.0	75.0
<b>TOTAL</b>	<b>2,964</b>	<b>1,108</b>	<b>4,072</b>		<b>10,615</b>	<b>7,525</b>

Table 5-7 illustrates that on nice days Beaver Creek will have a restaurant seating capacity for 10,615 guests while on an adverse weather day the restaurant seating capacity will be 7,525. Given the planned Manage-To capacity of 13,000 guests, there is still not enough on-mountain seating on busy days to meet the demand—even when the weather is fair and outdoor decks can be utilized. There are a number of restaurants in the base area villages operated by other entities: Beaver Creek Village, Bachelor Gulch Village, Arrowhead Village, and Beaver Creek Landing. These village restaurants will continue to offset the deficit of on-mountain seating. On busy days when the on-mountain restaurants are full, guests may ski down into one of the villages for lunch.

## **L. PARKING**

Beaver Creek experiences a deficit of parking between 10 and 15 times per ski season. This is offset through the use of Colorado Department of Transportation permits to park up to 150 cars on Highway 6 and the use of the Avon Rodeo grounds parking which can accommodate up to 800 cars. The Rodeo grounds will continue to be utilized when necessary, but tend to complicate the parking and bus situation. The parking deficit will be offset by the number of rental pillows and resident dwellings at the resort. Guests that are staying at the resort have parking supplied with their dwelling units, and thus do not require additional resort parking.

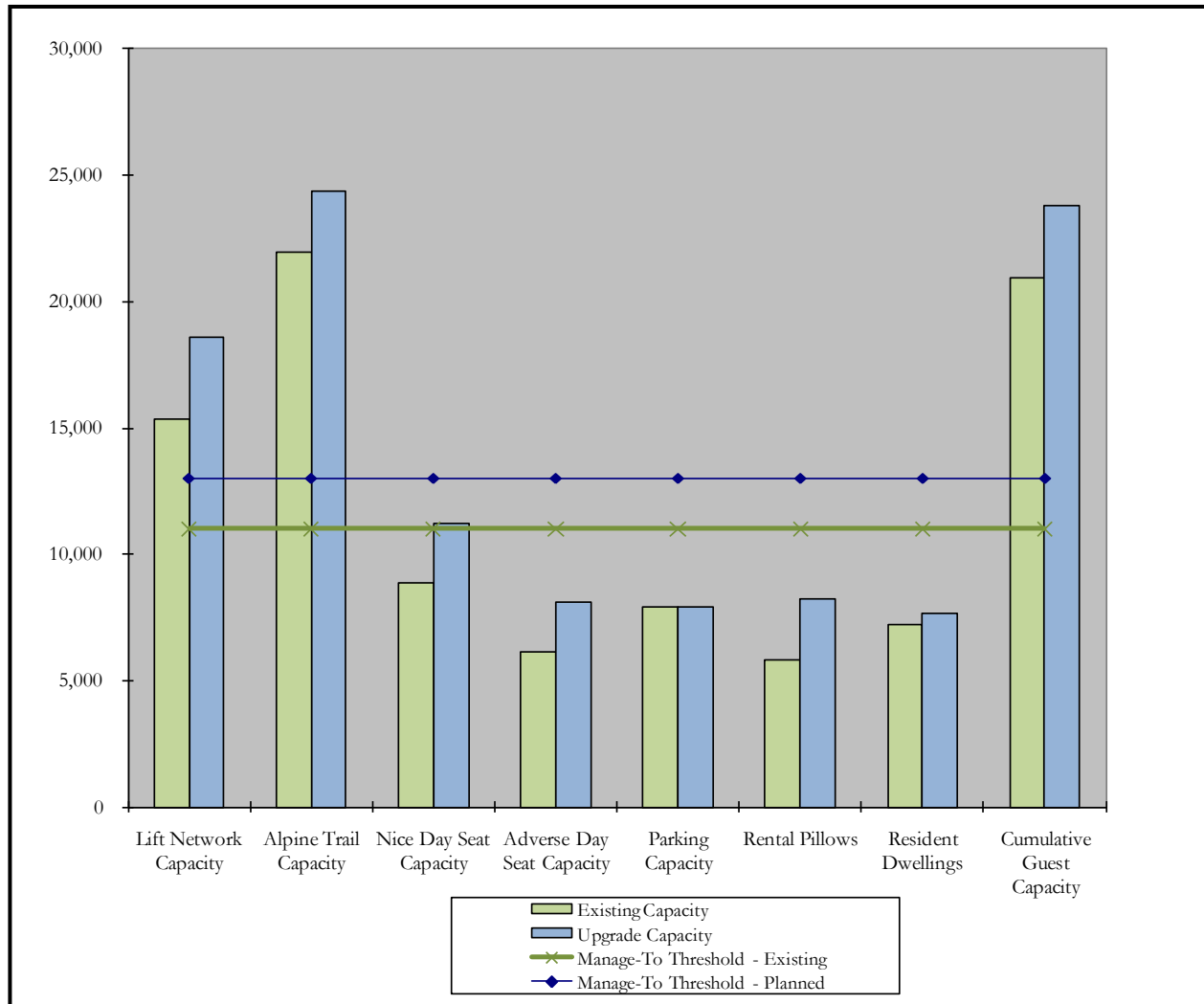
The existing and proposed bedbase in the center of Avon is planned to be served by the new River Front Gondola that connects Avon to the Beaver Creek Express lift at the Beaver Creek Landing.

At some time in the future, the Bear Lot may be converted to bed base. If this takes place, the Elk Lot would be structured to maintain the amount of parking currently available. Beaver Creek continues to evaluate the option of charging for parking at some point in the future. This option is one alternative that may be implemented to encourage visitors to better utilize public transportation.

## M. RESORT BALANCE AND LIMITING FACTORS

The overall balance of the ski area is evaluated by calculating the capacities of the resort's various facilities, as compared to the resort's Manage-To planning number. The capacities discussed above are shown in Chart 5-3.

**CHART 5-3:  
RESORT BALANCE – UPGRADING PLAN**



Note: Cumulative Guest Capacity is the total sum of Parking Capacity, Rental Pillows and Resident Dwellings.

As Chart 6-2 illustrates, the implementation of this Upgrading Plan will increase the capacities of Beaver Creek's facilities. This will improve guest services and the quality of the guest experience. This is consistent with the resort's goal of remaining the industry leader in quality. It should be noted that the chart shows a deficit in parking capacity; however, this is offset by the number of rental pillows and resident dwellings at the resort. As noted, guests that are staying at the resort have parking supplied with their dwelling units, and thus do not require additional resort parking. Likewise, deficits in on-mountain food service seating are compensated for by third party entities operating on private lands at the base area.

## **N. VEGETATION MANAGEMENT**

Beaver Creek, with the Eagle Holy Cross Ranger District, updated the existing Vegetation Management Plan (VMP) to identify tree stands that have been affected by the mountain pine beetle infestation as well as other agents. The VMP identifies what, if any, remedial steps would be appropriate. As of preparation of the MDP, the Forest Service has initiated preparation of an Environmental Assessment to analyze implementation of the VMP on the human and biological environments.

## 6. GLOSSARY

**Ability Level:** The relative rank of a skier or snowboarder, or the relative rank given to alpine terrain. The ten ability levels relied upon by SE GROUP are as follows: first-time beginner, beginner, advanced beginner, novice, low intermediate, intermediate, advanced intermediate, expert, advanced expert, and extreme.

**Acceptable Trail Density:** The maximum number of skiers and snowboarders that can slide on an acre of trail at any given time without causing uncomfortable crowding on the trail. Acceptable trail density is measured in skiers and snowboarders per acre. *As a general rule, the difficulty of the trail and acceptable trail density share an inverse relationship.*

**Acre foot:** The amount of water, or snow, necessary to cover 1 acre to a depth of 1 foot. In general terms, 1 acre foot of water yields 2 feet of snow, but depends on variables such as temperature and relatively humidity.

**Active Skiers and Snowboarders:** Skiers and snowboarders are considered active if they are: (1) waiting in a lift line, (2) riding a lift, or (3) enjoying a downhill descent. Depending primarily upon weather and snow conditions, 70 to 85 percent of a resort's skiers and snowboarders are active. The remaining 15 to 30 percent of a resort's skiers and snowboarders are either using a resort's support facilities and amenities or are circulating in a resort's various staging and milling areas. These guests are considered non-active.

**Alpine Skiers at One Time (Alpine SAOT):** Alpine SAOT is the comfortable, daily capacity of a resort's skiing/snowboarding lifts. In short, Alpine SAOT is derived from the supply of vertical transport (i.e., the combined uphill hourly capacities of the lifts) and the demand for vertical transport (i.e., the aggregate number of runs demanded multiplied by the vertical rise associated with those runs). In some instances, Alpine SAOT is also called skiers at one time (SAOT) capacity.

**Best Management Practices (BMPs):** Methods, measures, and practices specifically adopted for local conditions that deal effectively and practically with a given problem. BMPs include, but are not limited to, construction practices, structural and nonstructural controls, operations protocol, and maintenance procedures.

**Bowl Skiing/Snowboarding:** Skiing and snowboarding in open and broad expanses, generally above timberline. Bowl skiing and snowboarding usually features terrain appropriate for advanced intermediate and expert ability levels.

**Cabin:** An enclosed or semi-enclosed compartment used for transporting skiers and snowboarders. The term *cabin* is commonly used in aerial tramway discussions, whereas the term *chair* is used to reference the carrier relied upon by fixed-grip and detachable grip chairlifts.

**Comfortable Carrying Capacity:** Comfortable Carrying Capacity (CCC) is a planning tool used to determine the optimum level of utilization that facilitates a pleasant recreational experience. This is a planning figure only and does not represent a regulatory cap on visitation. SAOT is used to ensure that different aspects of a resort's facilities are designed to work in harmony, that capacities are



equivalent across facilities, and sufficient to meet anticipated demand. SAOT is based on factors such as vertical transport and trail capacities.

**Cubic Foot per Second (cfs):** The unit used to measure stream flow or similar discharge. One cfs is equivalent to 449 gallons per minute, or approximately 2 acre feet per day.

**Day-Use Skier/Snowboarder:** Generally speaking, a skier or snowboarder that lives within the resort's day-use skier/snowboarder market. Given normal road and weather conditions, the day skier/snowboarder market is defined as the geographic area found within a 100-mile radius, or two-hour drive, of the resort. Day-use skiers and snowboarders drive to the resort and park in day-use lots.

**Destination Skier/Snowboarder:** Generally speaking, a skier or snowboarder that resides beyond a 250-mile, or five-hour, drive from the resort. On average, destination skiers and snowboarders stay at a resort for longer periods of time (i.e., ranging from three to seven days) and commonly comprise a majority of a resort's mid-week visitation. Destination skiers/snowboarders typically rely upon air travel and shuttle service for transport to the resort, and obligate overnight lodging and numerous other resort amenities.

**Detachable Grip Chairlift:** An aerial tramway system on which chairs circulate around the system—alternately attaching and detaching from a moving haul rope. Chairlift detachment occurs at the lower and upper terminals for ease of lift loading and unloading.

**Fall-Line:** The path an object would naturally take as it descends a slope under the influence of gravity. Fall-line paths indicate the natural flow of potential trails, from the top of ridges to the elevations below. Fall-line terrain allows skiers and snowboarders to make equally weighted, left and right turns.

**Fixed-Grip Chairlift:** An aerial tramway system on which chairs remain attached to a haul rope.

**Food Service Seat Turnover Rate:** The turnover rate is used to evaluate a resort's aggregate food service seating capacity. The turnover rate is the estimated number of times a food service seat is used during a resort's peak food service operations. Sit-down dining at a resort lodge typically has a turnover rate of 3, while cafeteria-style dining is characterized by a turnover rate in the range of 4 to 5. In addition to the type of food service, a resort's climate also impacts turnover rate (i.e., cold and snowy climates have lower turnover rates).

**Formal Trail Network:** The trails and other named terrain delineated on a resort's trail map. In addition to traditional trail corridors, the network might include named and patrolled bowls, glades, chutes, couloirs, hike-to areas, and tree skiing/snowboarding areas.

**Glading:** The removal of a pre-determined percentage of a slope's trees, which enables the area to be skied or ridden by a larger percentage of a resort's guests.

**Gradient:** The vertical distance divided by the horizontal distance (i.e., commonly known as "rise over run"), which is measured as a percent, or a degree. Slope gradient is used to determine the ability level distribution of a resort's alpine terrain.

**Guest Services Facilities or Guest Services:** Facilities or services that are supplied by a resort to accommodate guests and enhance the quality of the recreational experience. Examples of guest services facilities include: restaurants, warming huts, general information desks, resort lost and found departments, restrooms and lounges, ski school, daycare, public lockers and ski-check facilities, ski patrol, first aid clinics, etc.

**Halfpipe:** A channel constructed in the snow, up to 500 feet long, with consistent 6- to 22-foot walls on both sides. The walls of the channel are contoured from horizontal to vertical and the bottom of the channel is generally flat.

**Maze:** A waiting area used to line up skiers and snowboarders just prior to lift loading (i.e., the corral area immediately adjacent to the loading point of the lift).

**Mitigation:** Actions taken to avoid, minimize, or compensate for adverse environmental impacts.

**Mountain Work Roads:** On-mountain primary and secondary roads that provide summertime access (for rubber tire vehicles) to all mountain buildings and lift terminal locations.

**National Environmental Policy Act of 1970 (NEPA):** The federal act which requires federal agencies to prepare detailed reports on the potential effects to the human and biological environmental as a result of proposed actions on public lands.

**Off Fall-Line:** The path an object takes as it crosses the fall-line slope. Off fall-line terrain compels skiers and snowboarders to make alternating long and short turns (turns that are not equally weighted) in order to accommodate the off fall-line condition. In some instances, and if properly designed, off fall-line terrain can be enjoyable to snowboarders.

**Ollie Roll:** A mound of snow, either naturally occurring or manmade, in the middle of a snowboard park that provides a jump or a hit. An ollie ranges from 3 to 6 feet in height and typically 10 feet in diameter.

**Off-Piste:** Alpine terrain not associated with a named and maintained ski trail.

**Pod:** A delineated parcel of land that, due to its favorable terrain characteristics, is suitable for lift and trail development. Pods are areas of relatively consistent terrain (both slope gradient and fall-line) that may be serviced by one or more lifts and may be easily integrated into the existing skier and snowboarder circulation patterns.

**Prominent Ridge:** The line of separation (i.e., a divide) between drainage basins.

**Quad:** A common abbreviation for a four-passenger chairlift.

**Quarterpipe:** A channel constructed in the snow the same as a half-pipe, but consisting of one wall instead of two. It may be shorter in length than a half-pipe and may face downhill or across the fall-line.

**Rider:** A commonly used term for a snowboarding guest.

**Round-Trip Interval (RTI):** The round-trip interval represents the aggregate time spent waiting in the lift line, riding the lift, and skiing or riding a particular trail of the lift. The RTI is used to calculate the number of runs an average skier/snowboarder is expected to take on a particular lift over the course of a day. Ultimately, the RTI is used to calculate the daily vertical demand of an average skier/snowboarder.

**Shoulder Seasons:** Generally speaking, the spring and fall seasons.

**Six-Pack:** A common abbreviation for a six-passenger chairlift.

**Ski-In/Ski-Out Lodging:** Overnight accommodations that are so close to the slopes that guests can conveniently ski, ride, or walk to the resort. Also referred to as slope-side lodging, the prevalence of this type of lodging is considered when a resort's parking and guest drop-off areas are sized.

**Skier/Snowboarder Circulation Analysis:** An on-slope survey in which skier and snowboarder circulation characteristics are recorded for the full spectrum of ability levels. The on-slope survey is performed for each lift, yielding an accurate determination of the lift's average RTI and Alpine SAOT.

**Skiway:** A trail that allows skiers and snowboarders to traverse the mountain and avoid additional chairlift rides. Skiways, or traverses, are also used in pods of intermediate, advanced intermediate, and expert terrain to provide an appropriate descent for guests of beginner and novice ability levels. A skiway is typically designed to maintain an average slope gradient of 10 percent.

#### **Space Use Definitions:**

- **Administration:** All resort operations office space not already incorporated in the square footage totals for the service functions listed below.
- **Bar/Lounge:** All serving and seating areas designated as restricted use for the serving and consumption of alcoholic beverages. If bar/lounge space is used for restaurant seating, these restricted seats should be included in the overall restaurant seat count.
- **Circulation/Waste:** All circulation space and associated spaces, including hallways, stairwells, lobbies, elevators, etc.
- **Daycare/Nursery:** Includes all daycare/nursery facilities, registration area, and lunch rooms associated with this function. Storage, employee lockers, restrooms, and administrative space directly associated with daycare/nursery should be included in this total. Areas associated with rental equipment should be included in the Rentals/Repair square footage total.
- **Employee Lockers/Lounge:** All employee space not previously allocated to the other service functions listed under the space use definition section.
- **Guest Services:** including general resort information desks and lost and found departments. The milling area beyond the information desks should be included in the guest services square footage total.

- **Kitchen/Scramble:** The area where food preparation, food service, and food storage occurs. Employee lockers, employee restrooms, and administrative space directly associated with food services should be included in the kitchen/scramble square footage total.
- **Mechanical:** All space designated to mechanical functions, including telephone rooms, furnace rooms, and space occupied by water heaters.
- **Outdoor Deck Seats:** Included in restaurant seat count in some clement areas (e.g., resorts with a significant number of sunny, warm days), but not in areas of inclement weather.
- **Public Lockers:** All public locker and changing rooms. Any public lockers located along the walls of circulation space should be included (add an additional 2 square feet of space per locker to account for space associated with locker use).
- **Rentals/Repair:** All rental shops, repair services, and associated storage areas.
- **Restaurant:** Seating All areas designated for food service seating, including restaurants, cafeterias, brown bag areas, and bar/lounge space dedicated to food service. Major circulation aisles through food service seating areas should be categorized as circulation space.
- **Retail:** All retail shops and associated storage areas. Base area retail operations, as well as on-mountain outlets (selling sunscreen, sunglasses, goggles, hats, gloves, etc.), should be included in the retail square footage total.
- **Ski Patrol:** Space associated with all first aid facilities and clinics. Storage, ski patrol lockers and restrooms, and administrative space directly associated with ski patrol should be included in the square footage total.
- **Ski School:** Includes ski school registration area and any indoor staging areas. Storage, employee lockers, restrooms, and administrative space directly associated with ski school should be included in the ski school square footage total.
- **Storage:** All storage space not previously allocated to the other service functions listed under the space use definition section.
- **Ticket Sales:** The space associated with ticketing and season pass sales and associated administrative space. Exterior milling areas associated with ticket sales should not be included in this total. Interior milling areas should be categorized as circulation space.
- **Staging:** An area, or zone, where guests assemble and are prepared for a particular recreational pursuit. Examples of staging areas include milling and maze areas, check-in and guest drop-off areas, plazas, etc.
- **Surface Lift:** A lift on which passengers are propelled by means of a circulating overhead wire rope while remaining in contact with the snow surface. Connection between the overhead wire and the passenger is by means of a towing device (e.g., T-bar, J-bar, platter, etc.) attached and circulating with the lift's haul rope. (Note: For definitional purposes, conveyor and belt lifts are considered surface lifts.)
- **Table Top:** A mound of snow on the slope that is cut flat on the top providing a place for snowboarders to land on top or jump over.



- **Terrain Park:** An area dedicated to the development and maintenance of a collection of alternative terrain features, which may include, but is not limited to, elements like half-pipes, quarter-pipes, big air hits, ollies, spines, jibbing elements, barrel bonks, table tops, etc.
- **Trail Density Per Acre:** The number of skiers and snowboarders that occupy an acre of trail at any one given time. Trail density is reported in a persons-per-acre ratio.
- **Uphill Hourly Capacity:** A calculation of the number of skiers and snowboarders transported—per hour—from the lower to the upper terminal of the lift. A resort's combined uphill hourly capacity is the aggregation of the resort's individual lift capacities.
- **Vertical Demand:** The vertical demand of a lift is the by-product of the lift's vertical rise, the average round-trip interval (i.e., number of runs per hour), and the number of hours the lift is used by an average skier or snowboarder. In short, vertical demand is the product of the lift's vertical rise and the number of runs skied/rode in a day of typical operation.
- **Vertical Transport Feet per Hour (VTF/hr.) (000):** The number of persons a lift is able to transport 1,000 vertical feet in one hour. VTF/hour is derived by multiplying a lift's uphill capacity (measured in persons per hour) by the lift's vertical rise (measured in feet) and dividing by 1,000.

## 7. BEAVER CREEK MASTER DEVELOPMENT PLAN UPDATE REVISIONS LOG

Pages

[illegible]