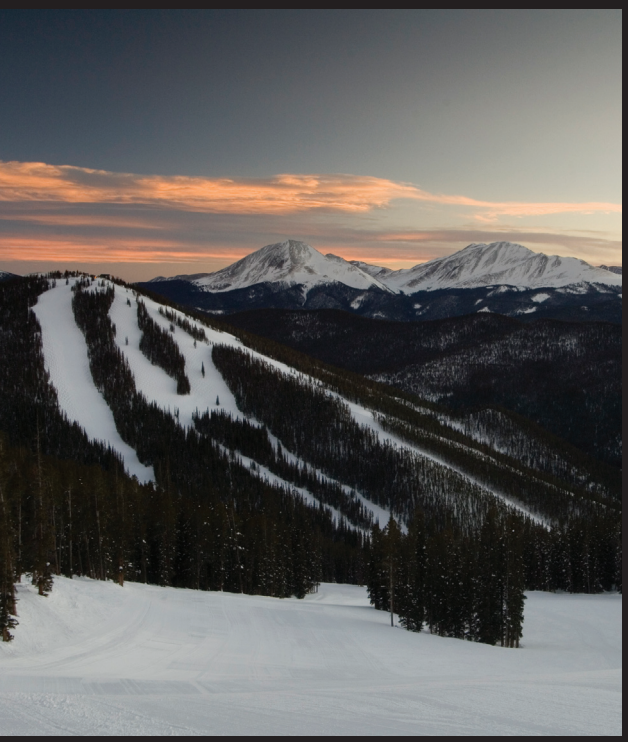
KEYSTONE
COLORADO

2009 MASTER DEVELOPMENT PLAN



2009 MDP

Prepared By:

SE GROUP

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KEYSTONE®
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2009 MASTER DEVELOPMENT PLAN

CHAPTER 1: INTRODUCTION

1. INTRODUCTION

The purpose of this Master Development Plan (MDP) is to provide future direction for the development of Keystone Ski Resort (Keystone) which ensures a balance of facilities and a variety of amenities to afford an exceptional guest experience. This MDP provides a thorough assessment of existing operations and facilities at Keystone and identifies a comprehensive plan for future improvements to the resort. A critical component of this plan is a strategy for Keystone to remain viable in the competitive destination resort and Front Range skier market while accommodating current and future visitation levels.

With the exception of private lands at the River Run and Mountain House base areas, the entirety of Keystone's existing lift, trail and infrastructural network is operated on public lands under a special use permit (SUP) from the White River National Forest. Keystone's SUP area totals 8,536 acres.

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

> *"A Master Development Plan (MDP) is part of each ski area's special use permit. MDPs are prepared by the permit holder and accepted by the Forest Service. They describe the improvements and facilities that are authorized at each resort and are the guiding document used to describe the expected future condition for the resort. These plans encompass all the area authorized for use by the special use permit including areas that are, at present, undeveloped. Areas allocated are managed to avoid deterioration of site conditions that may detract from planned uses."*[1]
>
> *"New technology and changing skier preferences with regard to terrain and on mountain services motivate ski areas to adapt and change in order to remain competitive. Because of this, master development plans are dynamic. The Forest Service participates with ski areas in planning changes to meet public needs. Prior to approval for implementation, the master development plan and its component parts are subject to environmental analysis in accordance with the National Environmental Policy Act and other relevant laws and regulations."*[2]

Forest Service "acceptance" of this document (as used in the connotation above) is consistent with the requirements of Keystone's Forest Service-issued SUP. It is important to reiterate that "acceptance" does not convey "approval" of any projects contained in this MDP. Implementation of any projects on National Forest System (NFS) lands identified in this MDP (excluding those that were previously-approved) is contingent upon site-specific environmental review and approval via the National Environmental Policy Act (NEPA). In reference to the previous excerpt from the 2002 Forest Plan

[1] White River National Forest Land and Resource Management Plan, 2002 Revision, p. 3-81
[2] White River National Forest Land and Resource Management Plan, Final Environmental Impact Statement, p. 3-437

FEIS, this MDP is a dynamic document, which may be amended periodically to accommodate technological innovations and evolved guest expectations over a five- to seven-year planning horizon.

A. Background

Keystone is located on the Dillon Ranger District of the White River National Forest (WRNF), approximately 85 miles west of Denver, the largest metropolitan area in Colorado. The resort is situated approximately 6 miles south from the Silverthorne/Dillon Interstate 70 exit.

The history of Keystone began in 1941 when Max Dercum purchased the Black Ranch along the Snake River and began his vision of creating a ski area. Max and his wife Edna founded the Ski Tip Lodge, which opened to guests in 1949 and was named for the ski tips that were used as the door handles. Over the next twenty years, Max and Bill Bergman actively pursued their dream of developing Keystone Mountain into an international ski area. In 1967 they acquired more than 500 acres of private land.

In November 1970, the Keystone ski area opened with four lifts under the ownership of Keystone International, Inc. The ski trails were named after the local mines in the Snake River Valley. The cost of a lift ticket was $5.00 and the area received over 75,000 visitors.

In 1972, Keystone installed a snowmaking system, making it one of the first Colorado ski areas to offer machine-made snow.

In May of 1974, Ralston Purina acquired Keystone and invested twenty million dollars to develop the Keystone Lodge, tennis center and condominiums. Keystone purchased some ranchland to the west of the ski mountain and began planning an 18-hole golf course development. By November of 1978, skier visits had increased to more than 550,000 and the lift ticket cost $12.00.

In 1980, the 18-hole championship Ranch golf course opened, designed by Robert Trent Jones, Jr. Development improvements continued throughout the 1980s with the installation of Keystone's first gondola and two triple chairlifts, as well as twelve new ski runs. By 1985, Keystone's annual visitation reached the one million mark. The $10 million Conference Center opened in December of 1989, becoming the largest conference facility in the Colorado Rocky Mountains.

In 1996 Vail Resorts purchased Keystone from Ralston Purina.

In June of 2000, the Keystone Conference Center expansion was completed and the second 18-hole golf course opened (River Course). A new cross-country center opened at the River Course with 25 kilometers of snowshoeing trails and 16 kilometers of cross-country trails.

The most recent improvements at Keystone include the addition of approximately 311 acres of snowcat skiing/riding terrain in Bergman, Erickson and Independence bowls (an additional 266 acres of undeveloped forested areas below the alpine bowls became accessible), improvements to the terrain park, and replacement of the River Run Gondola. Keystone now includes three villages with a wide variety of shops, restaurants/bars and accommodations which support skiing, snowboarding, golf, mountain biking, horseback riding and many other activities on a year-round basis.

Keystone stretches 7 miles along the Snake River, over three mountains. It is an all season resort offering shops, stores, bars, restaurants, conference facilities, spas, and accommodations. Beyond skiing and riding, Keystone offers alternative winter and summer activities – two world-class golf courses, renowned mountain biking terrain, and horse stables.

B. Keystone's Niche

Over the past ten seasons, Keystone has consistently ranked among the top three Colorado ski resorts in terms of annual visitation – behind Breckenridge and Vail. Keystone has historically been one of Colorado's primary Front Range destination resorts. Like all Summit and Eagle County resorts, Keystone capitalizes on its easy access via Interstate 70; nearby population centers in Denver, Boulder, Fort Collins, and Colorado Springs; and its proximity to Denver International Airport.

Keystone is well known for offering something for everyone. Defining characteristics include: a prime location, abundant annual snowfall, variety of terrain, range of guest amenities, and a comfortable atmosphere. These factors combine to make Keystone attractive to a range of guests and all ability levels – from families and destination guests seeking a relaxed and fun atmosphere, to locals and Front Range skiers and riders in search of advanced opportunities.

As much as weather and snow conditions affect the quality of the skiing/riding experience, technological innovations constantly redefine the ski industry. Obvious examples include the evolution of snowboarding from a fringe sport in the late 1980s to a considerable component of the market today, or the complete transformation of ski equipment from long/straight skis to those that are shorter/fatter and more versatile in all conditions. Generally speaking, the types of terrain that guests demand evolve along with technology – e.g., unique terrain types, high-elevation bowls, terrain park features, etc. Therefore, as noted in the Introduction, this MDP will be amended periodically over time commensurate with evolving guest expectations and equipment technology.

Keystone's core market is made up of intermediate skiers and riders, with intermediate terrain composing the bulk of the ski area's offerings on Dercum Mountain. However, in the absence of major infrastructural or terrain projects in the past decade, Keystone has made great strides in catering to the needs of more advanced skiers and riders. The *A-51 Terrain Park*, which has evolved over the past decade, was ranked as one of Transworld Snowboarding's Top 10 Parks in both 2007 and 2008. High Alpine snowcat skiing and riding in Bergman and Erickson bowls, as well as in

Independence Bowl, began in 2003 and 2006, respectively. Finally, the 284 acres of illuminated trails at Keystone offer an experience that can be found at only one other Colorado ski area. Because of this, Keystone offers the longest ski day in Colorado – twelve hours. Lighting further compliments the *A-51 Terrain Park* for a unique experience.

C. Abstract of Master Development Plan Projects

The following summary of proposed projects at Keystone has been organized by location throughout the SUP area – Dercum Mountain, North Peak, The Outback, and Erickson/Bergman/Independence Bowls. All projects are described in detail in Chapter 5.

1. Dercum Mountain

a. Lifts

- Install the Ski Tip Lift
- Upgrade the A-51 lift, moving the bottom terminal downhill approximately 1,200 feet
- Upgrade the Argentine Lift to a detachable quad. Construct a mid-load station at the existing top terminal, and extend the lift to the top of *Paymaster*
- Construct a Ski School Learning Center at the River Run Gondola mid-terminal. Install two surface conveyors
- Install a teaching carpet adjacent to the Ranger Lift
- Install a ski school lift at *Schoolmarm.* The bottom terminal will be adjacent to the proposed Argentine top terminal and top terminal will be adjacent to Kokomo Carpet

b. Trails

- Construct a low-intermediate trail to the east of *Spring Dipper* connecting to the upper half of *Sante Fe* (this is a bypass of the steep faces on *Jackface* and *Burro Alley*)
- Construct trail connections from the Ski Tip Lift top terminal and the previously-mentioned low-intermediate trail to the Montezuma Express and River Run Gondola mid-terminal
- Construct a skier/rider bypass on the steep face on *Beger*
- Construct three new trails between *Wild Irishman* and *Paymaster* to help reduce trail densities on Dercum Mountain
- Construct the *Schoolmarm* bypass and tunnel to separate novice skiers/riders from guests who are heading to the advanced intermediate runs (*Frenchman* to *Paymaster*) and to the A-51 terrain park

- Construct a trail connection between *Silver Spoon* and *Paymaster* to better access *Paymaster* from Peru Express
- Construct a new trail segment and perform trail widening to separate A-51 egress traffic from *Schoolmarm* and *Ballhooter* traffic
- Construct a connector trail from the proposed Argentine Lift top terminal, along the western slope of Dercum Mountain, to *Diamond Back* and continuing on to *Mineshaft*
- Construct a groomable gladed trail to skier's right of *Spring Dipper*
- Glade the northern portions of 'The Windows' terrain
- Close and revegetate three areas of trail: between *Schoolmarm* and *Paymaster*, *Schoolmarm* and *Silver Spoon*, *Silver Spoon* and *Paymaster*
- Miscellaneous trail grading and widening

c. Snowmaking

- Upgrade existing snowmaking infrastructure on *Ballhooter*, *Upper Last Hoot*, *Jackstraw*, *Mineshaft*, and *Lower Mozart*
- Install additional snowmaking infrastructure and provide coverage on proposed new trails as well as on *Schoolmaster*, *Go Devil*, *Bobtail*, *Sante Fe*, and *Swandyke*
- Address the need for additional sources of snowmaking water
- Upgrade/install snowmaking infrastructure

d. Facilities

- Construct A-51 User Education Center and viewing deck
- New on mountain restaurant and guest services facility at the summit of Dercum Mountain (remove the existing Summit House facility, construct new building in different location)
- Construct a permanent tubing/summer operations facility
- Relocate the maintenance shop to an on-mountain location
- Upgrade the maintenance shop at CB 2
- Reconfigure River Run guest service facilities in conjunction with the gondola replacement (private lands)
- Mountain House Redevelopment (private lands)

- Ski Tip Portal guest services
- Construct a Ski School Learning Center adjacent to the River Run Gondola mid-terminal (including two carpets, a yurt with a deck and pit toilets)

e. Roads & Utilities

- Improve the summer road from CB 1 to Summit House
- Install sewer and water lines from CB 2 to Summit House and decommission the sewage lagoon
- Increase Summit House water tank storage capacity from 50,000 gallons to approximately 100,000 gallons
- Install underground power lines to service the proposed Ski Tip Lift

2. North Peak

a. Lifts

- Upgrade the Wayback Lift to a high-speed, detachable quad

b. Trails

- Construct a trail connection between *Powder Cap* and *Bullet*
- Construct a trail connection between *Geronimo* and *Cat Dancer*
- Miscellaneous trail widening and grading

c. Snowmaking

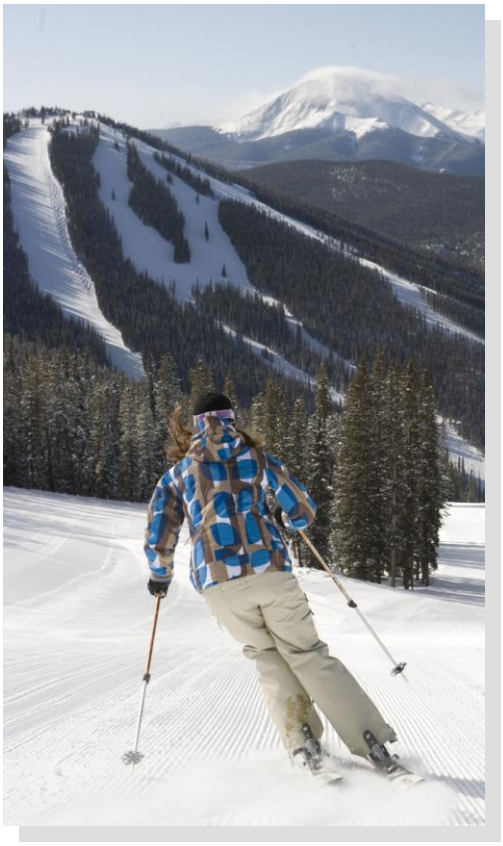
- Upgrade existing snowmaking infrastructure on *Ambush* and *Geronimo*

d. Facilities

- Increase seating capacity at the Outpost by 350 seats, remodel the AlpenGlow, and enclose outdoor seating

e. Roads & Utilities

- Upgrade the existing underground power lines



3. The Outback

a. Lifts

- Construct the Outback Surface Lift to access North and South Bowls
- Upgrade the Outback Express lift to a higher capacity (previously approved)

b. Trails

- Construct two new groomable gladed trails on the north side of the Outback
- Miscellaneous trail widening
- Complete additional glading along the trail entry into *Timberwolf*, *Bushwacker*, and *Badger*
- Glade the slope to the east of *Timberwolf*
- Construct a groomable gladed trail at the *Tele Trees* in South Bowl

c. Snowmaking

- Install additional snowmaking infrastructure on *Oh, Bob!*

d. Facilities

- Construct the "Outback Deck" with public BBQ area and permanent bathrooms – near bottom terminal of the Outback Express

e. Roads & Utilities

- Improve/connect old logging roads from the Outback Express bottom terminal to top terminal
- Upgrade the existing underground power lines that supply power to the Outback Express
- Install underground power lines to service the proposed Outback Surface lift

4. Erickson/Bergman/Independence Bowls

a. Lifts

- Install the Windows Fixed Grip Lift providing access to Windows, Bergman and Independence Bowls
- Install the Bergman Bowl detachable quad
- Install the Independence Bowl fixed grip lift

b. Trails

- In addition to lift-served, open bowl terrain, construct 10 traditional trails in Bergman Bowl

- Conduct trail clearing associated with the Windows and Independence lifts
- Glade the slope to skier's right of *Little Taos* in Independence Bowl

c. Facilities

- Construct a Ski Patrol/Lift Operations building at the top of the Bergman Bowl lift

d. Road and Utility Projects

- Construct a road from the Outpost restaurant to the proposed Bergman lift bottom terminal
- Install underground power lines to service the Windows, Bergman, and Independence lifts

5. Previously Approved Lift Projects

- Install additional chairs on the Outback Express

D. Ski Industry Trends

Table 1-1 provides an overview of total annual skier visits based on national, Colorado, WRNF, Summit County, and Keystone data.

Table 1-1:
Annual Skier Visitation Comparison: National, Colorado, WRNF, Summit County, & Keystone

Season	Annual National Skier Visits (in millions)	Annual Colorado Skier Visits	Annual WRNF Skier Visits	Annual Summit County Skier Visits	Annual Keystone Skier Visits
2007/08	60.1	12,540,603	8,166,932	4,125,481	1,129,608
2006/07	55.7	12,566,299	8,302,503	4,228,237	1,170,710
2005/06	58.9	12,533,108	8,612,690	4,171,169	1,106,634
2004/05	56.9	11,816,193	7,747,289	3,866,523	1,041,395
2003/04	57.7	11,250,761	7,325,803	3,557,043	944,433
2002/03	57.6	11,605,777	7,608,549	3,840,424	1,038,942
2001/02	54.4	11,128,131	7,309,540	3,695,077	1,069,111
2000/01	57.3	11,666,672	7,707,986	3,871,611	1,230,100
1999/00	52.2	10,892,263	7,080,048	3,660,812	1,192,528
1998/99	52.1	11,389,561	7,295,697	3,773,900	1,259,479
1997/98	54.1	11,979,719	7,596,793	3,586,500	1,149,270

Source: National Ski Areas Association, 2008; Colorado Ski Country USA, 2008

1. National/Regional

Nationally, the U.S. ski industry rebounded dramatically from the difficult 2006/07 season to set an all-time record in annual visits in 2007/08, with 60.1 million. This represents a 9.1 percent increase

from 55.1 million visits recorded in 2006/07, and a 2.0 percent rise from the prior record of 58.9 million visits set in 2005/06. Over the last 10 seasons (1998/88 – 2007/08), the average number of visits recorded nationally was 56.2 million. The 2007/08 season, at 60.1 million visits, represents a 7.0 percent increase from this ten-year average.

Exceeding the 60 million visit threshold is a milestone for the 2007/08 season. This extends an era of strong performance which the U.S. ski industry has exhibited since the 2000/01 season, in which visits have reached 57 to 60 million in good years and 54 to 55 million in poor years – both significantly above the levels recorded in previous decades.

The 2007/08 results were clearly aided by snow conditions, which were largely favorable across the country and throughout the season. (Overall, average snowfall was up 40 percent in the 2007/08 season from 2006/07.) However, the industry also showed resilience by growing strongly despite a deteriorating economic climate marked by rising unemployment, sinking consumer confidence, a housing slump, mortgage and credit crises, rising gas prices, and other obstacles.

Within the Rocky Mountain Region, Colorado, Utah and New Mexico each had relatively minor changes from the 2006/07 season, with Colorado essentially flat, Utah up slightly, and New Mexico down slightly. The northern Rockies states (Idaho, Montana, and Wyoming) were all up more strongly – between 11 and 17 percent.

2. Colorado/WRNF

Colorado ski areas averaged approximately 11.8 million annual visits between the 1997/98 and 2007/08 seasons, with a high of 12.6 million in 2006/07. Colorado accounts for roughly 22 percent of the national skier visit total. With a combined average of approximately 7.7 million skier visits recorded annually between the 1997/98 and 2007/08 seasons, the 12 ski areas in operation on the WRNF account for approximately 66 percent of the skiing in Colorado and 14 percent of the national total. In the recent past, skier visits on the WRNF increased most rapidly in Summit and Eagle Counties.

3. Summit County/Keystone

In the 2007/08 season, at just over 1.1 million skier visits, Keystone accounted for approximately 9 percent of the 12.54 million skier visits recorded in Colorado and almost 27 percent of Summit County's total skier visits. In Summit County, skier visits have been fluctuating each year since the mid 1990s. Between the 1997/98 and 2007/087 seasons the Summit County ski areas (Keystone, Arapahoe Basin, Breckenridge, and Copper Mountain) accounted for approximately 34 percent of the total Colorado skier market.[3]

Between the 2004/05 and 2006/07 seasons, Keystone experienced notable growth in the number of skiers recorded on the busiest days. Visits on the top 10 days and top 20 days grew by over 1,000 skiers per day in that time period. The top 10 days in 2004-05 and 2005-06 ranged between 13,000 and 17,000 skiers per day.

[3] Summit County Planning Department, 2005

With annual skier visitation just shy of 1.13 million in 2007/08, Keystone was the third busiest resort in Colorado and the United States (behind Breckenridge and Vail, respectively). Furthermore, the 2002 Forest Plan FEIS anticipates that projected population growth in Colorado (in particular, the Front Range) will translate to an annual growth rate in the ski industry of 0.25 percent.[4]

E. Recently Approved and Implemented Projects

Over the past decade, the Forest Service has approved and Keystone has implemented several projects on NFS lands, snowcat skiing in Bergman (Little), Erickson and Independence bowls; and the upgrade of the River Run Gondola. Snowcat skiing in Bergman/Erickson bowls and Independence Bowl were approved via Decision Notices in December 2003 and July 2006, respectively. Snowcat skiing is discussed in further detail in Chapter 4. The River Run Gondola upgrade was approved via a Categorical Exclusion in 2008.

Subsequent to a NEPA approval involving the Outback in the early 1990s, Keystone implemented many projects and invested much capital during a 3-year period, including:

- trail clearing on the Outback,
- Outback Gondola and cabin storage facility,
- the original yurt at the bottom of the Outback,
- Sewer line up Keystone Gulch road,
- Outback chairlift,
- Outpost restaurant,
- Deck and restroom facility at bottom of Outback, and
- Upgrade of Montezuma lift with detachable technology.

F. Goals and Objectives of the 2009 Master Development Plan

This five- to seven-year MDP presents a strategy for capitalizing on Keystone's current recreational and operational assets and opportunities while addressing constraints. In assembling this Plan, numerous factors were considered, including those that are specific to Keystone, as well as some that are more common to the ski industry as a whole. These factors include, but are not limited to: recreational offerings; variety of experiences; quality of guest services; and changing guest expectations.

Through a variety of projects and improvements, this MDP addresses five main themes at Keystone:

[4] White River National Forest Land and Resource Management Plan, Final Environmental Impact Statement, p. 3-442

1. Skier/Rider Circulation

As noted, Keystone's core market is made up of low-intermediate, intermediate, and advanced-intermediate skiers and riders. The quality of the recreational experience for this core segment of skiers and riders is highly dependent on the current configuration of the lift and trail network on the front side of Dercum Mountain. This Plan aims to address identified skier/rider circulation issues on intermediate terrain on the front side of Dercum Mountain (and throughout the SUP area, as well) through a variety of projects. These include: strategic trail widening/grading projects; constructing new trails on Dercum Mountain and in Bergman Bowl; creating trail bypasses and connectors; lift replacements; snowmaking projects; and reconfiguration of teaching terrain.

Trail widening projects will decrease skier/rider densities while increasing trail capacities. The construction of trail bypasses, connectors, and reroutes will improve circulation on Dercum Mountain by better separating user groups and allowing lower ability level guests to avoid steeper sections of trails that are currently regarded as obstacles. In addition, new lift served high-Alpine terrain in Bergman Bowl will help address circulation issues by distributing skiers / riders across the increased amount of intermediate terrain that they desire.

The addition of the Ski Tip Lift and realignment of the Argentine Express will improve guest access to, and use of, Dercum Mountain. In particular, the construction of mid-terminal load stations on the River Run Gondola and Argentine Express will allow guests to repeatedly use intermediate terrain on the upper three-quarters of Dercum Mountain without needing to descend the steeper sections to the base areas for lift service. Upgrading the Outback Express and Wayback lift will reduce congestion at the bottom terminals.

Teaching terrain will be reconfigured and consolidated to capitalize on existing and proposed infrastructure. Teaching terrain will ultimately be composed of three distinct areas – the Mountain House base area, the River Run gondola mid-terminal, and the summit of Dercum Mountain. This will provide a logical and comfortable learning progression for guests who are new to the sports of skiing and snowboarding.

Finally, the replacement of existing snowmaking infrastructure, as well as installation of new snowmaking lines, will address issues associated with high-use areas and early season snow quality on intermediate terrain on Dercum Mountain and North Peak.

2. Underutilization of High Alpine Terrain

High Alpine (above treeline and/or open bowl), lift-served terrain was historically reserved for advanced skiers and riders. However, recent advances in equipment technology, coupled with industry-wide trends towards providing inbounds, "off-piste" experiences have made lift-served, high Alpine terrain important for intermediate and advanced intermediate skiers and riders, as well.

Keystone has an abundance of high Alpine terrain within its SUP area that is well suited to providing quality intermediate and advanced-intermediate skiing and riding. This terrain is located in Erickson/Bergman/Independence Bowls off North Peak and in North/South Bowls adjacent to The Outback. This terrain is currently accessible via hiking and through Keystone Adventure Tours

(KAT) snowcats; however, it is not readily accessible for the majority of Keystone's core market due to its undeveloped nature. Therefore, high Alpine terrain off North Peak and The Outback is highly underutilized given the quality of the terrain and the latent demand that currently exists for it.

Terrain in Bergman Bowl is categorized as low-intermediate, and due to its elevation and topography, has a "high Alpine feel." Creating lift-served, low-intermediate skiing and riding in Bergman Bowl will fill the need for a natural learning progression and will allow for access to more advanced terrain available in Erickson and Independence Bowls as well as in North and South Bowls.

3. Circulation on the Summit of Dercum Mountain

The summit of Dercum Mountain is the hub of Keystone's lift and trail network with the convergence of five high capacity lifts (River Run Gondola, Summit Express, Montezuma Express, Ruby Express, and Outpost Gondola), two beginner lifts (Kokomo and Ranger), Adventure Point, and the Summit House restaurant. All guests moving between the base areas (River Run and Mountain House) and North Peak/The Outback must transition through the summit of Dercum Mountain. However, a finite amount of space at the summit of Dercum Mountain, coupled with the concentration of people, six lift terminals, the Summit House facility and Adventure Point, creates congestion and circulation issues.

Due to the ease of lift access, the Summit House could accommodate a substantial amount of the resort's mid-day capacity. However, current limitations in seating capacity and efficient use of space prevent the Summit House from maximizing the service opportunities presented by its central location. The Summit House is an older facility, and has been expanded and retrofitted several times, resulting in a series of disconnected and inefficient spaces.

The Summit House is situated in an illogical location – at the center of skier/rider routes and blocking the entrance to one of the best trails on the upper mountain - *Frenchman*. Because it obstructs the logical entrance to *Frenchman* and makes it more difficult to see other entrances to trails under the Montezuma Express, its presence also directs more people onto *Schoolmarm*, which is one of the busiest trails on the mountain.

Therefore, a reconfiguration of the interface between guest services provided at the Summit House and the lift and trail network is called for in this Plan.

4. Advanced Skiing and Riding Terrain throughout the SUP Area

Although the majority of projects contained in this Plan are aimed at accommodating Keystone's core market of low- through advanced-intermediate skiers and riders, numerous opportunities for addressing the needs of more advanced guests have been identified. Lift-served, high Alpine terrain classified as expert has been identified on the northern aspects of Erickson and Independence bowls, with some opportunities in North and South bowls, as well. In addition, the creation and improvement of glades throughout the SUP area will further capitalize on Keystone's existing supply of advanced terrain.

5. Operations and Infrastructure

Given the age and extent of Keystone's infrastructure and operational activities, numerous projects have been identified as necessary to ensure that the resort is operated efficiently while accommodating guests' needs and expectations. These strategic upgrades, additions and relocations include, but are not limited to: relocating/upgrading maintenance shops; road improvements; upgrading water, wastewater and power systems; reconfiguring guest seating at The Outpost; and constructing restroom and a barbeque deck at the base of the Outback Express.

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Project Area
Figure 1.1

North

0 1400 2800'

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2009 MASTER DEVELOPMENT PLAN

CHAPTER 2: DESIGN CRITERIA

2. DESIGN CRITERIA

A variety of facility design criteria – each of which contributes to the recreational experience – influence four season resort upgrades and improvements. A destination resort must offer a multitude of services, amenities, and experiences designed to accommodate a range of guests and meet their needs/expectations. Design parameters that guide the development of everything from the pedestrian-oriented, social environment, to the Alpine experience, all contribute to the success of a destination resort.

A. REGIONAL/DESTINATION RESORTS

Destination mountain resorts can be broadly defined by the visitation they attract - in most instances regional and/or national and international. Within these categories are resorts that are purpose-built and others that are within, or adjacent to, existing communities. Keystone is an example of a resort constructed within an existing community – Summit County – which is rich in history and provides a destination guest with a sense of the Mountain West and the mining history of Colorado.

1. Regional Destination Resorts

Regional destination resorts largely cater to a "drive" market. While day-use guests play a large role, the regional destination resort also appeals to vacationers. Where the regional destination resort has evolved from within, or adjacent to, an existing community, services are often supplied by proprietors in the existing community.

2. National and International Destination Resorts

National and international destination resorts cater to a significant "fly-in" market, due to a combination of the unique character and level of services offered by either or both the base area and on-mountain facilities. A destination resort's national/international guest expectations are typically higher than for many of its regional destination guests. These guests expect abundant opportunities to participate in a variety of vacation experiences. This guest mind-set stems from the expectation that their destination vacation will likely represent the apex of their skiing/riding season. In addition to a weeklong visit, guests may also hope to engage in the resort and surrounding community on a more regular or permanent basis (through ownership of real estate and part-time residency).

There is a growing demand for mountain destination resorts to provide activities outside of snow sports. At some of the more mature mountain destinations, non-skiing wintertime guests account for a substantial percentage of the overall guest population. Furthermore, many of the guests who ski will not use the mountain facilities every day of their visit. Thus, the ratio of total days skied to total room-nights can be as low as 1:2. Even for the day-use guest at a destination resort, skiers spend less of their day on the mountain. This is due to several factors, including: (1) shifting expectations of what a mountain vacation is about (participation in a variety of experiences - not just skiing and riding); (2) the advent of high-speed lift technology (allowing guests to ski more vertical in a shorter period of time); and (3) an aggregate population of guests that is aging and which has less vertical demand. In the summer, it is typical for the resort and community to have very high utilization due to a variety of recreational opportunities that drive summer mountain vacations and weekend getaways. Hence, all

of these trends add up to a significant demand for attractions and amenities that complement a resort's skiing and riding facilities.

National and international destination resorts offer a wide variety of lodging types, including hostels, motels, hotels, inns, bed and breakfasts, townhomes, condominiums, and single family chalets. Visitor participation in the real estate market has diversified substantially in the last two decades and includes ownership – either whole or fractional – as well as "usage," which comes in forms such as timeshares and club participation. Typically, where the mountain facility is a primary driver for visitation, lodging is clustered at or near the mountain's base area. Amenities usually include a wide variety of restaurants, lounges, shops, conference facilities, and perhaps theatres or concert venues, recreation centers (e.g., swimming, fitness equipment, and indoor courts), etc. Aside from skiing and riding, recreational activities in winter and non-winter seasons may include (but are not limited to) snow tubing, Nordic skiing, snowshoeing, sleigh rides, snowmobiling, mountain and road biking, walking/hiking, golf, tennis, horseback riding, angling, swimming, spa treatments, etc.

B. Base Area Design

1. Overall Layout

Base area facilities/portals play a vital role in the operation of Keystone and in the overall guest experience. Design of the base lands for a destination mountain resort involves establishing appropriate sizes and locations for the various elements that make up the development program. The complexion and interrelationship of these elements varies considerably depending on the type of resort and its intended character.

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

C. Mountain Design

1. Trail Design

a. Slope Gradients and Terrain Breakdown

Terrain ability level designations are based on slope gradients and terrain features associated with the varying ability terrain 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 overall 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 are used by SE GROUP to classify the skier difficulty level of the mountain terrain. Keystone's slope gradients and terrain/skier ability level breakdown is consistent with the mountain guidelines presented in the following tables.

Table 2-1:
Terrain Gradients

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

Source: SE GROUP, Mountain Planning Guidelines

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

Table 2-2:
Central Rocky Mountain Skier Ability Breakdown

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

Source: SE GROUP, Mountain Planning Guidelines

b. Trail Density

The calculation of capacity for a ski area is based in part on the target number of riders that can be accommodated, on average, on a typical acre of terrain at any one given time. The criteria for the range of trail densities for North American ski areas that SE GROUP utilizes are listed in the following table (Table 2-3). Keystone's planned trail densities fall within the ranges depicted in Table 2-3.

Table 2-3:
Skier Density per Acre

Skier Ability	Trail Density
Beginner	25-40 skiers/acre
Novice	12-30 skiers/acre
Low Intermediate	8-25 skiers/acre
Intermediate	6-20 skiers/acre
Advanced Intermediate	4-15 skiers/acre
Expert	2-10 skiers/acre
Alpine Bowls	0.5 skier/acre

Source: SE GROUP, Mountain Planning Guidelines

These density figures account for the riders that are actually populating the 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. SE GROUP'S observations and calculations indicate that on an average day approximately 40 percent of the total number of riders at the resort is on the trails at any given time. Additionally, areas on the mountain, such as merge zones, convergence areas, lift milling areas, major circulation routes, and egress routes, experience higher densities periodically during the day.

As witnessed at many Colorado resorts, there is a segment of the market that has a preference for more natural, unstructured, semi-backcountry types of terrain commonly referred to as off-piste.[5] Demand is increasing for alpine open bowls, glades, and other similar types of terrain. Rider density per acre numbers are not necessarily applicable to these types of terrain, particularly as there often is not a defined edge to these areas as on traditional trails. However, riders are attracted to these areas for the un-crowded feel, and the experience and challenge that they afford. Planning and design should provide these types of areas if possible. Examples range from glading between existing runs, to providing guided out-of-bounds tours.

c. Trail System

A primary goal for Keystone's trail system design is to provide a variety of terrain to accommodate diverse opportunities for a wide spectrum of guests. Each trail should provide an interesting and challenging experience for skiers with the ability level for which the trail is designed. Optimum trail widths vary depending upon topographic conditions and the caliber of the rider being served. The trail network should provide the full range of ability levels consistent with each level's respective market demand.

In terms of a resort's ability to retain guests, both for longer durations of visitation and for repeat business, one of the more important factors has proven to be variation in terrain. Once again, this means providing developed runs for all ability levels, including some that are groomed on a regular

[5] "Piste" is a term commonly borrowed from French vernacular which refers to a groomed, maintained, defined ski trail. "Off-Piste" therefore refers to the ungroomed, less defined natural style of skiing commonly found in high Alpine areas and bowls.

basis and some that are not (bowls, trees, off-piste areas, and alternative terrain [e.g., parks and pipes]).

In summary, a broad range of terrain is likely to satisfy guests from beginner through expert ability levels within the natural topographic characteristics of the resort.

d. Terrain Parks

Terrain parks have become a vital part of most mountain resorts' operations, and are now considered an essential mountain amenity. Popularity of terrain parks continues to increase, and is dependent on the regional location of the resort, demographics of the resort's target guests, and, most significantly, the quality of the parks. Resorts that understand the importance of addressing the needs of the youth market have focused considerable attention on building high quality parks. The presence of terrain parks at mountain resorts has changed various operational and design elements. The demand for grooming can increase, as terrain parks often require specialized or dedicated operators, grooming machines, and equipment (such as half-pipe cutting tools). Terrain parks typically require significant quantities of snow, either natural or machine produced, often increasing snowmaking demands. Terrain parks can affect circulation on the mountain, as the parks are often a guest destination. Many resorts have either installed terrain park specific lifts, or locate their parks in areas that can easily be repeatedly skied using adjacent lifts. Additionally, terrain parks are commonly located in highly visible, accessible locations on the mountain, given the excitement and marketability they create. In order to help create and maintain energy around terrain parks, music and animation are typically associated with them.

Providing a progression of terrain parks, from beginner through expert, is a primary goal. Teaching parks should be provided. Cross traffic should be minimized with good visibility provided in merge zones. Park features should flow easily from one to another and avoid creating bottle necks and traffic jams. Novice parks and features should be separated from the more advanced parks, and should be geared toward a learning environment. A low pressure venue should be provided for beginners, to allow them to feel comfortable as they practice tricks and become accustomed to transitions and jumps. Signage should clearly and simply delineate the difficulty of the various parks and features. This will help ensure that users are directed to the feature size most appropriate to their ability. Maintenance of the park is critical to ensure quality and maintain the reputation of the park with enthusiasts. Quality and diversity of features over quantity should be a goal. As the locations of features, particularly pipes, become fixed, constructing them out of earth can greatly reduce the amount of snow coverage required.

2. Lift Design

A myriad of factors are considered in lift design and placement, including wind conditions, visual impacts, resource constraints (e.g., wetlands), round-trip use, access needs, interconnectability between other lifts and trails, and the need for circulation space at the lower and upper terminal sites. The vertical rise and length of lifts for a particular mountain are important measures of overall attractiveness and marketability of a ski area.

3. Capacity Analysis and Design

Comfortable Carrying Capacity (CCC) is defined as a level of utilization for the resort (the number of visitors that can be 'comfortably' accommodated at any given time) that provides a pleasant recreational experience, without overburdening the resort infrastructure. It is expected that resorts will experience peak day visitation up to 25 percent above their CCC. The accurate estimation of the CCC of a mountain is a complex issue and is the single most important planning criterion for the resort. Related guest service facilities, including base lodge seating, mountain restaurant requirements, sanitary facilities, parking, and other services are planned around with the proper identification of the mountain's true capacity. The CCC figure is based on a combination of the uphill hourly capacity of the lift system, the downhill capacity of the trail system, and the total amount of time spent in the lift waiting line, on the lift itself, and in the downhill descent.

D. Balance of Facilities

The mountain master planning process emphasizes the importance of balancing recreational facility development. The sizes of the various guest service functions are designed to match the CCC of the mountain. The future development of a resort should be designed and coordinated to maintain a balance between accommodating guest needs, resort capacity (lifts and trails), and the supporting equipment and facilities (e.g., grooming machines, day lodge services and facilities, utility infrastructure, access, and parking).

E. Applicable Forest Service Policy

1. National Management Policies and Direction

Across the 191 million acres of National Forest System (NFS) lands, approximately 178,000 acres of public lands are administered for developed ski areas, representing approximately 0.09 percent of lands managed by the Forest Service. While only 24 percent of the nation's ski areas are on NFS lands (121 currently), they produce approximately 56 percent of the nation's annual skier visits.

The enabling authorities for the Forest Service are contained in many laws enacted by Congress and in the regulations and administrative directives that implement these laws.[6] These authorities allow the Forest Service to provide recreational opportunities to facilitate the use, enjoyment, and appreciation of National Forests.

[6] These laws include: the Organic Administrative Act (1897), the Weeks Act (1911), the Multiple-Use Sustained Yield Act (1960), the Forest and Rangeland Renewable Resources Planning Act (1974), the National Forest Management Act (1976), and the National Forest Ski Area Permit Act (1986).

The Forest Service is authorized to approve certain uses of NFS lands under the terms of SUPs.[7] Generally, SUPs for recreational developments are issued and administered for uses that serve the public, promote public health and safety, and provide land stewardship. In accomplishing these objectives, the 40-year term SUP held by Keystone authorizes the following:

> *"Ski lifts and tows, ski trails, day lodge, restaurants, maintenance and snowmaking facilities, roads, utilities, parking, signs, radio base station, explosive cache, and other facilities and improvements needed in the operation and maintenance of a four-season resort."*

Downhill skiing is an important component of the recreation opportunities offered by National Forests. The National Recreation Strategy, a result of the 1987 President's Commission for America's Outdoors, gives the Forest Service a major role in providing recreation opportunities on National Forests through partnerships such as those with the ski industry.

The relationship between the Forest Service and ski industry is defined in a memorandum of understanding (MOU) that was reaffirmed in 2002 (and dating back to 1996).[8] Per the MOU, the Forest Service and National Ski Area Association (NSAA) work in partnership to achieve common goals of managing and promoting active participation in alpine recreation and sports by all people.

As defined in the MOU, the Forest Service and NSAA share mutual interests and a common focus in:

- natural resource conservation education
- multiple use NFS management
- universal access to recreational opportunities and facilities
- promoting the health and physical fitness of Americans
- public awareness and appreciation of nature and the environment
- encouraging young people to benefit from participation in alpine recreation
- enhancing the experience of newcomers to alpine sports

2. 2002 Revised WRNF LRMP

Keystone's operations and activities within its SUP area must comply with the management direction provided in the WRNF's 2002 Forest Plan. The 2002 Forest Plan includes 33 separate Management Areas for different portions of the forest based on ecological conditions, historic development, and anticipated future conditions. Keystone falls within the 8.25 Management Area (Ski Areas – Existing and Potential). The 8.25 Management Area includes existing resorts that have already been permitted

[7] 16 USC 497

[8] Master Service-Wide Memorandum of Understanding between the National Ski Areas Association and the USDA Forest Service. 02-SU-11132001-185

and developed, as well as additional suitable terrain into which development is planned for the future. Per the 2002 Forest Plan:

> *"Ski areas provide winter sports activities and other intensively managed outdoor recreation opportunities for large numbers of national and international visitors in highly developed settings. In some areas, use in the summer may be as intensive as in the winter… Facilities may be intensively used throughout the year to satisfy a variety of seasonal recreational demands. Base areas that serve as entrance portals are designed as gateways to public lands."*[9]

All of Keystone's existing and proposed infrastructure, operations, and activities that occur on NFS lands are included within its existing 8,536-acre SUP area, within the 8.25 Management Area. All of the resort's base area facilities and activities occur on private lands.

The WRNF's 2002 Forest Plan FEIS provides in-depth analysis of the current conditions of the ski areas in Summit County and the ski industry in general. Specifically regarding Independence Mountain, the 2002 Forest Plan FEIS states:

> *"Snow quality and overall skiing potential for portions of this site are excellent when compared to other inventoried sites and existing resorts. Scenic vistas from the summit are outstanding. Access points are established along the existing Keystone ski area boundary to allow access for dispersed skiing on Independence Mountain. Independence Mountain has potential to be connected by lifts with the existing ski area in several locations or directly from the Snake River. Physically, Independence Mountain has excellent skiing potential and is a logical expansion of Keystone ski area.*[10]

Additionally, regarding Independence Mountain and its suitability for incorporation into Keystone's developed lift and trail system, the 2002 Forest Plan FEIS states:

> *"Keystone is allowed to expand onto Independence Mountain. This will help lower existing skier densities and crowding on the existing terrain… Alternative K [the Selected Alternative] allows the existing resorts in Summit County to lower skier densities by allocating a sufficient number of acres to meet future demands for skiing and snowboarding for the year 2010.*[11]

3. Scenery Management and the Built Environment Image Guide

a. Scenery Management System

In addition to providing recreation experiences and the production of numerous resources, public landscapes provide beauty, which is a valuable resource to many Forest Service constituencies. This resource is explicitly recognized in the law. The National Environmental Policy Act requires equal

[9] White River National Forest Land and Resource Management Plan, 2002 Revision, p. 3-80
[10] White River National Forest Land and Resource Management Plan, Final Environmental Impact Statement, p. 3-460
[11] Ibid, p. 3-475

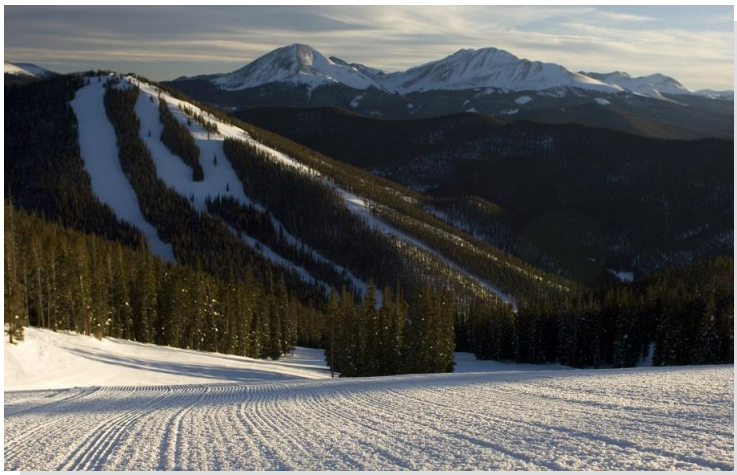
consideration of aesthetics and science. The Forest Service requires application of Scenery Management to all National Forest System lands. In brief, the Scenery Management System (SMS) is a systematic approach for assessing visual resources in a project area and then using the assessment findings to help make management decisions regarding proposed projects. The system is founded on an ecological aesthetic, which recognizes that management which preserves the integrity, stability, and beauty of the biotic community preserves the scenery as well.

The 2002 Forest Plan establishes acceptable limits of change for Scenic Resources.[12] The acceptable limits of change are the documented Scenic Integrity Objectives (SIO), which serve as a management goal for scenic resources.

Scenic Integrity Objectives

A project can cause visual resource change that can be objectively measured. Viewer response to this change, although subjective, usually displays broad patterns of consensus. Thus, visual impacts comprise both the landscape change and viewer response to that change. By assessing the existing visual character of an area in terms of pattern elements (form, line, color and texture) and pattern character (dominance, scale, diversity, and continuity), it is possible to identify the extent to which the visual character of a facility will exhibit visual contrast with the landscape, or its converse, visual compatibility.

People experience the visual environment as an integrated whole, not as a series of separate objects. Scenic Integrity is a measure of the degree to which a landscape is visually perceived to be complete, indicating the degree of intactness and wholeness of the landscape character. The SMS uses SIOs, which range from Very High (unaltered) to Very Low (heavily altered). The SIOs for the Keystone SUP area, as designated in the 2002 Forest Plan, are Low and Very Low. The frame of reference for measuring achievement of SIOs is the valued attributes of the "existing" landscape character "being viewed."



The Low designation applies to the eastern, less developed portion of the SUP area, including Independence Mountain and Independence/ Bergman/Erickson bowls. In an area with a Low SIO, the landscape character appears "moderately altered", and deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles

[12] White River National Forest Land and Resource Management Plan, 2002 Revision

outside the landscape being viewed. Deviations should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.

The Very Low SIO applies to the more developed portions of the SUP area – Dercum Mountain, the Outback, and North Peak. A Very Low SIO refers to landscapes that are "heavily altered," and deviations may strongly dominate the valued landscape character and may not borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed. Deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition. However, the 2002 Forest Plan states that all National Forest System lands shall be managed to attain the highest possible visual quality commensurate with other appropriate public uses, costs, and benefits.[13]

b. Built Environment Image Guide

In concept, the Built Environment Image Guide (BEIG) is designed to ensure thoughtful design and management of the built environment, which includes: administrative and recreation structures, landscape structures, site furnishing, structures on roads and trails, and signs installed or operated by the Forest Service, its cooperators, and its permittees. It focuses on the image, appearance, and structural character of facilities. Three core contexts are stressed throughout the BEIG: (1) environmental; (2) cultural; and (3) economic.

The BEIG provides general guidance regarding the image, aesthetics, and overall quality of recreational and administrative structures on NFS lands, but it does not contain enforceable "standards" pertaining to aesthetic quality as would be found in a typical Forest Plan. As indicated on pages 250 - 252 of the BEIG, specific direction for the design of administrative and recreational facilities is found in the Forest Service Manual (FSM) and Forest Service Handbooks (FSH).

The environmental, cultural, and economic contexts with which the BEIG is based are important considerations in development of structural facilities (not including lift terminals) within the Keystone SUP area. Furthermore, there are some elements of the BEIG within the "Rocky Mountain Province" section (pages 159-178) that should be taken into account when designing and constructing facilities on NFS lands.

4. Accessibility to Public Lands

In June 2005, the Forest Service released the Accessibility Guidebook for Ski Areas Operating on Public Lands. This guidebook provides information for a ski area authorized under a SUP to work with the Forest Service in providing equal opportunities for all people, including those with disabilities. Keystone will work with the Forest Service to ensure consistency with this guidebook for future development projects occurring on public lands.

Ski areas operating under special-use authorization from the Forest Service are required to comply with both the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation

[13] White River National Forest Land and Resource Management Plan, 2002 Revision, p. AA-17

Act of 1973 (Section 504). The ADA applies because Keystone operates as a "public accommodation;" moreover, Keystone is a business open to the public. Section 504 applies because Keystone operates under a SUP authorized by the Forest Service. Through the SUP, the ski area agrees to abide by these and all other laws, regulations, and policies of the federal government.

Significant legislation that preceded the ADA includes the Architectural Barriers Act (ABA) of 1968 and the Rehabilitation Act of 1973, as amended. ABA was the first measure passed by Congress to ensure access to facilities. The ABA requires that all facilities built, bought, or leased by or for a Federal agency be accessible. Section 504 of the Rehabilitation Act states: "No otherwise qualified individual with a disability in the United States shall, solely by reason of his disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance or under any program or activity conducted by any Executive Agency."

Keystone currently complies with this legislation through active involvement in assisting disabled guests with skiing and other recreation activities. Through future site-specific NEPA and design development reviews, Keystone will work closely with the Forest Service to ensure accessibility measures are taken to provide equal recreational opportunities to all users of public lands.

5. Vegetation Management Plan

Keystone and the WRNF staff have jointly prepared a Vegetation Management Plan (VMP). The VMP includes a full assessment of forest stands throughout the SUP area and outlines vegetation management projects that would be of long-term benefit to vegetation resources.

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CHAPTER 3: SITE INVENTORY

3. SITE INVENTORY

In particular, physiographic features which substantially affect mountain planning include: aspect (i.e., solar exposure), slope gradients, fall line patterns and elevation. Keystone is spread over three mountain ridges with Independence Mountain, Bear Mountain, Keystone Peak and Wapiti Peak above and to the east of the ski area, and Keystone Gulch bordering the western edge.

Most of the skiing and riding is located on the north and west facing slopes with connecting routes on some south, southeast and southwest faces. The valleys between the three peaks drain southwest before joining the Keystone Gulch drainage and then moving northwest.

A. PHYSICAL RESOURCES

1. Topography

Keystone is located on the southern side of a valley which extends in a generally east/west direction. The rugged topography of the area affects wind patterns, and wind generally flows along the valley from the west or out of the east. Fluctuations in wind speed are common, with peak gusts common at higher elevations and on exposed ridges.

Avalanche activity within the Keystone SUP area occurs primarily in above treeline alpine zones. Keystone has a comprehensive avalanche inventory and control plan authored in 2007 by Hal Hartman & Associates. It not only addresses areas of potential avalanche activity that currently affect the resort operations but also strategies to manage and minimize risk within the ski area and in those areas affected by the cat skiing operations.

2. Climate

Keystone is located in the Rocky Mountain Physiographic Zone and is influenced both by storm tracks from the Pacific and (less so) by up-slope storms from east. The local climate at Keystone is typical of those in the Colorado Rocky Mountains, with the daytime temperature decreasing approximately 3 to 4°F for each 1,000 feet of elevation gain. During winter months, daytime high temperatures average 30.6°F, and nightly lows average 10.1°F. Average low temperatures are coldest during the month of January, averaging 4.6°F, and warmest during May, at 37°F.

Snowfall averages 235 inches per year. Monthly winter season snowfall between November and April averaged 39 inches. November typically receives the least snowfall while March receives the most – 31.5 and 47.2 inches, respectively. December snowfall is the most unpredictable and includes both the highest and lowest recorded monthly snowfall totals.

3. Slope Gradients

Due to the long history and developed nature of Keystone, an area-wide slope analysis is not necessary within the developed portions of the SUP area. However, a slope analysis has been completed for Bergman, Erickson and Independence Bowls. The majority of slopes within Bergman Bowl are low intermediate and intermediate levels. Slopes within Independence Bowl range from

intermediate to expert. Slopes within Erickson Bowl range for advanced intermediate to expert. The slope analysis is in Figure 5-4.

4. Aspect

Slope aspect plays an important role in snow quality and retention at this latitude. The variety of exposures present opportunities to provide a range of slope aspects that can respond to changes in sun angle. Due to Keystone's unique configuration (composed of three mountains) it offers a variety trails with exposures in all four cardinal directions, with the majority of developed trails oriented toward the north and west.

As with slope gradients, due to the long history and developed nature of Keystone, an area-wide aspect analysis is not necessary within the developed portions of the SUP area. However, an aspect analysis has been completed for Bergman, Erickson and Independence Bowls. The aspect analysis is included in Figure 5-4.

Snowpack retention is a critical concern for any winter resort, and for this reason, it is optimal to concentrate terrain where the natural snowpack remains for the longest period. In general, south slopes are the warmest, eastern and western slopes the next warmest and northern slopes the coolest.

At this latitude, elevation plays a large part in the snow holding capabilities of slopes with southern aspects and therefore, the slopes with southerly aspects that have been developed for skiing are primarily over 10,000 feet elevation and supplied with snowmaking.

Considering the important role in snow quality and retention that aspect plays at this latitude, the variety of exposures at Keystone present opportunities to provide terrain that can respond to changes in sun angle. The various angles of exposure are discussed below:

- **North-facing** - ideal for snow retention, minimal wind scour, minimal sun exposure
- **Northeast-facing** - ideal for snow retention, minimal wind scour, minimal sun exposure
- **East-facing** - good for snow retention, some wind scour, morning sun exposure
- **Southeast-facing** - fair for snow retention, moderate wind scour, morning and early afternoon sun exposure
- **South-facing** - poor for snow retention, moderate wind scour, full sun exposure

- **Southwest-facing** - poor for snow retention, high wind scour, full sun exposure
- **West-facing** - fair for snow retention, high wind scour, late morning and afternoon sun exposure
- **Northwest-facing** - good for snow retention, high wind scour, afternoon sun exposure

5. Elevation

Elevations within the Keystone study area range from the top of Bear Mountain at approximately 12,610 feet, to the western edge of the resort at 9,220 feet. The River Run base area is at the 9,340-foot elevation, while the Mountain House Base area is near the 9,280-foot elevation.

The existing lift-served vertical drop is approximately 2,663 feet (from the top of Outback to Mountain House). However additional vertical can be gained by hiking, which increases to approximately 3,330 feet from the top of Bear Mountain to the Mountain House Base Area.

B. Preliminary Environmental Reconnaissance

In conjunction with mountain planning, fieldwork was completed during 2008 and 2009 to address numerous resources.

1. Botany

Field surveys for MDP projects were conducted at phenologically appropriate (flowering) times (late July and early August 2008) in proposed disturbance areas in those habitats (alpine and subalpine wetlands) where federally listed, proposed, and Forest Service Regionally Sensitive plants may occur.

2. Wildlife

Field surveys were conducted in summer 2008 to identify MDP-related wildlife issues associated with listed, proposed, and candidate species, Forest Service Regionally Sensitive species, WRNF Management Indicator Species (MIS), and migratory birds. All proposed disturbance and project component use areas were surveyed and their habitats characterized.

Field surveys were also conducted to identify lynx winter foraging habitat (WFH) compensatory treatment areas to meet Term and Condition 2 of the 2002 WRNF Forest Plan Record for Decision. Project biologists developed a lynx habitat map overlapping all proposed disturbance and project component use areas. The map was field verified, with respect to lynx WFH, and project-related impacts to WFH quantified so that an appropriate treatment acreage can be identified and silvicultural treatment(s) developed for consideration in future NEPA analyses and Section 7 consultation.

3. Hydrology

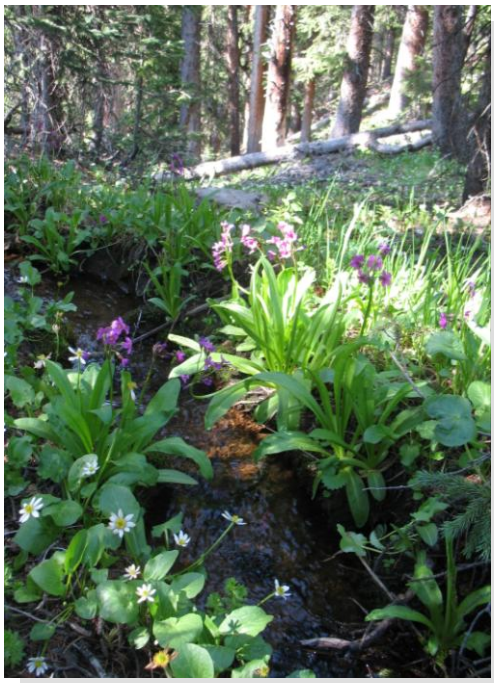
Forest Service hydrologists have made it clear that protecting hydrologic function on National Forest System Lands within ski area SUP boundaries is a high priority. The WRNF relies upon the Forest Service Region 2 Watershed Conservation Practices Handbook (WCPH – Forest Service Handbook

2509.25) for evaluation of watershed health and management direction to meet the agency's mandate as a designated Water Quality Management Agency pursuant to the Clean Water Act.

Thus, an inventory and assessment of watershed conditions was performed at Keystone which included on-mountain connected disturbed area (CDA)/vegetative cover assessment of the entire SUP.

4. Wetlands

Wetland and stream delineations aid in the preparation of a well-designed project. Therefore, project ecologists completed a wetland and stream delineation of all priority project areas, with a considerable buffer included. The wetlands fieldwork included a standard Corps of Engineers (Corps) wetlands delineation for the site to assist in the pre-NEPA planning process and future NEPA analysis, and provides the baseline data for potential project permitting. The delineation was composed of "areas" as opposed to "lines" due to the potential need to relocate/reconfigure trail layouts to minimize and/or avoid resource impacts.



Project areas throughout the SUP boundary that were delineated for the presence/absence of wetlands and streams included:

- Proposed lift line corridors
- Proposed trail pods (traditional trails, gladed and tree-skiing) and associated facilities
- Proposed mountain access roads
- Proposed grading projects
- Proposed snowmaking trails
- Proposed utility line corridors (for lifts, patrol shacks, etc.)

5. Archaeology

In July 2008, a file search was conducted at the Colorado State Historic Preservation Office, Compass Database, to identify past archaeological surveys conducted in the SUP area. A previous cultural resources inventory was conducted in the SUP area in 1983 by Mariah. In August 2008, another Class III cultural resources survey was preformed in the SUP area to cover remaining, unsurveyed areas.

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CHAPTER 4: EXISTING FACILITIES INVENTORY AND ANALYSIS

4. EXISTING FACILITIES INVENTORY AND ANALYSIS

Completion of a thorough resort inventory is the first step in the master planning process. This inventory extends to the lift and trail network, guest services, the snowmaking system, base area structures, day-use parking, and shuttle services. The subsequent analysis of inventoried data involved the application of ski industry norms to Keystone's existing conditions. This process allows for the comparison of Keystone's existing facilities to those commonly found at resorts of similar size and composition that share Keystone's market.

A resort's strengths and deficiencies are identified by examining the overall balance of the existing terrain, infrastructure, and facilities in relation to its Comfortable Carrying Capacity, defined below. The next step is the identification of improvements which would bring the existing facilities into better equilibrium, and will assist the resort in meeting the evolving expectations of its marketplace. Accomplishing these objectives results in a well-balanced resort, that provides an adequate array of services and experiences to satisfy guest expectations.

A. COMFORTABLE CARRYING CAPACITY (CCC)

The daily capacity of a resort is described as the Comfortable Carrying Capacity, referred to as CCC. CCC does not indicate a maximum level of, or cap on, visitation, but is rather a planning tool defined as the number of daily visitors a resort can comfortably or efficiently accommodate at one time without overburdening the resort's infrastructure. The CCC is a function of demand for, and supply of, vertical transport – i.e., the combined uphill hourly capacities of the lifts and the aggregate number of runs demanded multiplied by the vertical rise associated with those runs. CCC is calculated by dividing vertical supply (VTF/day) by vertical demand.

The accurate calculation of a ski area's CCC is an important, complex analysis and is the single most important planning criterion for any resort. All other related skier service facilities can be evaluated and planned based on the proper identification of the mountain's capacity. The detailed calculation of Keystone's current CCC is described in Table 5 of Appendix A and is calculated at 12,110 guests per day.[14] It is important to note that it is typical, and expected, for ski areas to experience peak days during which skier visitation exceeds the CCC by as much as 25 percent. However, from a planning perspective, it is not recommended to consistently exceed the CCC due to the resulting decrease in the quality of the recreational experience, and thus the resort's market appeal. With that being said, Keystone's CCC of 12,110 is exceeded throughout the season, and peak days in excess of 15,000 guests (24 percent over CCC) occur periodically during holiday weekends and during spring break in March. During these high visitation periods it is inevitable that a degradation of quality is experienced – e.g., crowding and longer wait times at lifts and in food service facilities. While the fact that Keystone

[14] The 12,110 CCC does not account for night operations. Unlike most destination resorts, Keystone operates over an extended day, with several lifts operating until 8:30 p.m. on a majority of days over the season (more often during busy periods and weekends). The night ski CCC is 3,130 skiers. Experience shows that guests will ride slower at night; however, they will take fewer breaks resulting in a similar VTF demand per hour during the day versus evening. The other issue at night is that many riders use trails that are rated below their skill level due the inherent difficulty of riding under artificial lighting.

exceeds its CCC on a handful of days each season is not a problem, per se, this occurrence is anticipated to continue until the resort's infrastructure is upgraded commensurately to meet existing and future demand.

B. Mountain Access Portals

Keystone has quite a unique skier arrival pattern for a destination resort due to the extensive amount of terrain that is illuminated at night. Although most skiers and riders start between 9-10 a.m. and finish between 2-3 p.m., Keystone's guests may choose to arrive late because they can ski/ride until 8:30 p.m.

Currently, all day and overnight skiers/riders stage through either the River Run or Mountain House base areas, including those staying in Lakeside or arriving from outside the valley. Approximately 70 percent of Keystone's guests enter the resort through River Run, with the remaining 30 percent entering though Mountain House. The reader is referred to Figure 4.2 for additional information on portal staging.

Out-of-base lift capacity is critically important, especially during the early morning hours when the majority of a resort's skiers and snowboarders arrive at the base area portals. Mountain planners prefer that a resort's CCC be able to flow through mountain access portals in roughly 90 minutes. Accordingly, the 90 minute cycle time is relied upon to size the hourly capacities of a resort's out-of-base lifts (i.e., lifts located at base area portals that "feed" guests to other lift systems). With an existing CCC of 12,110 guests, the River Run and Mountain House portals' uphill lift capacity should move guests onto the mountain in an efficient manner over the ingress period.

Total out-of-base lift capacity between the two portals is 8,290 guests per hour (4,400 associated with River Run, 3,890 associated with Mountain House). A recent portal capacity analysis (factoring in circulation, capacity, and visitor movement patterns at Keystone Resort) indicates that these portals are over-utilized, resulting in heavy crowding, particularly during peak morning and afternoon periods. The arrival rate of guests frequently exceeds the hourly capacity of the River Run and Mountain House portals. Long lines are particularly common at River Run, and can be in excess of 30 minutes.

1. River Run

Two lifts – the River Run Gondola and the Summit Express – provide direct access between River Run and the top of Dercum Mountain.

During the summer of 2008, the River Run Gondola was replaced, with the bottom terminal relocated on the north side of the Snake River. A mid-station was located between the River Run and Missouri

trails, approximately 2,600 feet up the lift line from the bottom terminal. The River Run Gondola's hourly capacity increased from 1,400 pph to 2,400 pph. This increase is intended to better serve the mountain staging requirement at River Run.

The total hourly capacity (2,400 pph) of the River Run Gondola is a product of separate loading capacities for both the bottom and mid-load terminals. Keystone staff will have the ability to adjust the hourly capacity at each terminal as needs change throughout the day. For example, during the busy morning ingress period, every fourth cabin moving through the bottom terminal will remain empty. Therefore, the bottom terminal capacity will be 1,800 pph, reserving an hourly capacity of 600 pph for the mid-load station during the morning access period. As the day progresses, more hourly capacity will be needed at the mid-terminal and less at the bottom terminal and staff will adjust the capacities accordingly. 1,800 pph was used for the modeling of the Portal Staging Capacity Analysis.

The Summit Express (a detachable quad chairlift) parallels the River Run Gondola, and tops out at the summit of Dercum Mountain. It experiences most of its use during the morning staging period. On slow days, the Summit Express is sometimes not operated, or only operated for the critical morning staging period.

Based on Keystone's CCC of 12,110, and the assumption that 70 percent of Keystone's guests access the mountain through River Run, approximately 8,477 people would be expected to use the River Run Gondola and Summit Express during the morning ingress period. These two lifts have a combined out-of-base capacity of 4,400 people-per-hour (2,600 associated with the Summit Express and 1,800 with the Gondola bottom terminal), indicating that the River Run portal can stage 70 percent of Keystone's CCC in approximately 115 minutes, which is longer than what is preferable. Keystone staff has the ability to increase the bottom terminal capacity, while reducing the mid-station capacity, in response to the demand during the morning ingress period on peak days. Increasing the capacity at the bottom terminal will reduce the staging time for the 8,477 guests.

Four parking lots are located at the River Run base area. Two are free – Montezuma and Brown's Cabin, and two are pay – Hunki Dori and Gold Bug, for a total of 2,660 parking spaces.

2. Mountain House

Two chairlifts – the Peru Express (a detachable quad) and Argentine (a fixed-grip double) – provide up-mountain access from the Mountain House base area, accommodating approximately 30 percent of Keystone's CCC (approximately 3,633 people). These two lifts combine for an hourly out-of-base capacity of approximately 3,890 pph, and can stage guests in the morning in under an hour.

Three parking lots are located at the Mountain House base area. The Porcupine, Marmot and Pika lots are all pay, and total 1,250 parking spaces. There are limited accommodations located at the Mountain House base are, but there are quite a few within walking distance. The base area facilities are a collection of older one- and two-story buildings providing guest services for staging, food services and operations. The parking lots, combined with a bus loop at each end of the base area, supply guests to this staging base area.

C. LIFT NETWORK

Keystone operates 20 lifts, including 13 chairlifts (one eight-passenger gondola, one six-passenger gondola, one high-speed detachable "six-pack" chairlift; five high-speed detachable quad chairlifts; one fixed-grip quad chairlift, one fixed-grip triple chairlift, and three fixed-grip double chairlifts) and six conveyor (carpet) lifts for beginners, plus one tubing lift. See Appendix A, Table 1 for individual lift specifications. These lifts include:

Table 4-1:
Keystone's Lift Network

Lift Number	Lift Name	Lift Type
Lift 1	River Run Gondola	eight-passenger gondola
Lift 2	Summit Express	detachable quad
Lift 3	Montezuma Express	detachable quad
Lift 4	Argentine	fixed-grip double
Lift 5	Peru Express	detachable quad
Lift 6	Discovery teaching lift	fixed-grip double
Lift 7	A-51 terrain park lift	fixed-grip double
Lift 8	Outpost Gondola	six-passenger gondola
Lift 9	Ruby Express	detachable six-pack
Lift 10	Ranger teaching lift	fixed-grip triple
Lift 11	Santiago Express	detachable quad
Lift 12	Wayback	fixed-grip quad
Lift 13	Outback Express	detachable quad
C-1, C-2a, C-2b, C-3	Mountain House teaching conveyors	
C-4	Kokomo teaching conveyor	
C-5	Sunkid teaching conveyor	
Adventure Point Tubing Lift		Elevated surface conveyor

Of the 20 lifts, only five (the Sunkid teaching conveyor and the four Mountain House teaching conveyors) are located entirely on private land; the rest are located entirely or partially on Forest Service lands within Keystone's SUP area. The bottom terminals of the Summit Express, River Run Gondola, Argentine, and Peru Express are located on private lands. The existing lift network serves Keystone's Alpine terrain in a logical and relatively efficient manner; however, when Keystone's CCC is exceeded, long lift lines are a fairly common occurrence at the River Run and Mountain House portals.

1. Dercum Mountain

Dercum Mountain is the hub of Keystone's skiing and riding with the convergence of five high capacity lifts (River Run Gondola, Summit Express, Montezuma Express, Ruby Express, and Outpost Gondola), two beginner lifts (Kokomo and Ranger) and the Summit House restaurant (with 564 indoor seats). Dercum Mountain's lift and trail network is depicted on Figure 4.1.

As mentioned previously, the River Run Gondola was recently replaced, with the bottom terminal relocated on the north side of the Snake River and a mid-station has been located between the River Run and Missouri trails, approximately 2,600 feet up the lift line from the bottom terminal. By installing the mid-terminal skiers and riders will have the option to roundtrip ski the upper trails and avoid the steeper and congested River Run trail. They will also have the ability to download from the mid-terminal at the end of their day.

The River Run Gondola's hourly capacity increased from 1,400 pph to 2,400 pph. Historically the River Run gondola experienced long lines, even when the Summit Express is running well below capacity. The increased capacity will help alleviate the long lines during the morning ingress periods on peak days.

The Summit Express (a detachable quad chairlift) parallels the River Run gondola, and tops out at the summit of Dercum Mountain. It experiences most of its use during the morning staging period. On slow days, the Summit Express is sometimes not operated, or is only operated for the critical morning staging period. Some guests opt to ride the Summit Express instead of the gondola, as it access the same terrain, but typically has fewer lines and is a shorter ride time.

The Montezuma Express detachable quad provides round-trip skiing on the upper, north facing aspect of Dercum Mountain. Skiers and riders opt to use this lift because it does not necessitate descending all the way to the base of Dercum Mountain, where long lines can be encountered at the River Run and Mountain House base areas.

The Peru Express detachable quad accesses intermediate terrain on the western portion of Dercum Mountain. Because the bottom terminal is located in the Mountain House base area, long lines can be encountered on this lift throughout the day.

The Argentine fixed-grip double chairlift is primarily an access lift, which is only operated on busy weekends, roughly ten days throughout the year. Thus, it is grossly underutilized. This lift provides round-trip skiing on a limited number of primarily intermediate trails on the lower, north side of Dercum Mountain. To get to the summit of Dercum Mountain, guests staging out of the Mountain House base area must take either the Argentine or Peru lift, then use the Montezuma Lift.

The A-51 fixed-grip double provides exclusive access to the A-51 terrain park. Unfortunately, this lift is antiquated and is too short to efficiently serve the terrain park.

The Ruby Express six-pack was installed in 2000, replacing an existing lift. In conjunction with the Outpost Gondola, it provides egress capacity for skiers and riders moving back to Dercum Mountain from North Peak and the Outback.

The Outpost Gondola was installed in 1991 and is generally underutilized. This gondola provides direct access for skiers/riders and pedestrians between the top of Dercum Mountain and the Outpost restaurant on North Peak, but provides no return skiing. Pedestrians use this lift for sightseeing, but mostly for nighttime dining as views from the Outpost are quite limited.

Finally, there are two beginner lifts at the top of Dercum Mountain – the Kokomo surface lift and the Ranger fixed-grip triple. Beginner lifts are further discussed under "Teaching Terrain" below.

2. North Peak

North Peak is not directly accessible from the River Run or Mountain House base area, and guests must descend the south side of Dercum Mountain to access both this area and The Outback (unless they take the Outpost Gondola from Dercum Mountain). The reader is referred to Figure 4.3. The Santiago Express (a detachable quad) provides the exclusive means of round-trip skiing and riding for terrain on North Peak. Terrain serviced by the Santiago Express faces primarily north and northwest, consisting of trails and gladed areas with skill classes ranging from low intermediate to advanced.

The Wayback fixed-grip quad chairlift provides access back to North Peak from the bottom of The Outback. Although there is return skiing on *Fox Trot*, *Anticipation* and *Spillway*, many of the users of these trails use them only for access to The Outback. Due to terrain closures in The Outback toward the end of the day, lift line wait times tend to increase at the Wayback lift since this lift provides the only egress from The Outback to North Peak and Dercum Mountain. This situation, along with an increase in future visitation, will continue to become a problem unless there is an increase in capacity of the Wayback lift.

3. The Outback

Installed in the late 1980s, the Outback Express (a detachable quad) is the only lift servicing terrain in The Outback. From the top of the Outback Express, guests can choose to hike approximately 350 vertical feet and access above treeline terrain in North Bowl and South Bowl. The reader is referred to Figure 4.3.

The Outback Express was designed for an hourly capacity of 2,400 pph, but does not achieve this due to chair spacing (i.e., the number of chairs hung on the rope line). Adding more chairs on the Outback Express would allow this lift to achieve its design capacity.

D. Terrain Network

Keystone offers approximately 3,000 acres of skiing/riding terrain across three mountains and five bowls, making it the largest resort in Summit County.[15] In addition to the 891 acres in the developed terrain network, Keystone offers gladed skiing and in-bounds, hike-to terrain. Boundary management is designed to reduce the instances of skiers and riders leaving the ski area boundary from undesignated locations and into sensitive or closed areas.

Keystone's distribution of terrain is provided in Table 4-2 and Chart 4-1. The "Trail Area" column presents acreages by ability level of developed, lift-served terrain. The far right column in Table 4-2 represents the estimated skill level distribution of Keystone's targeted markets.

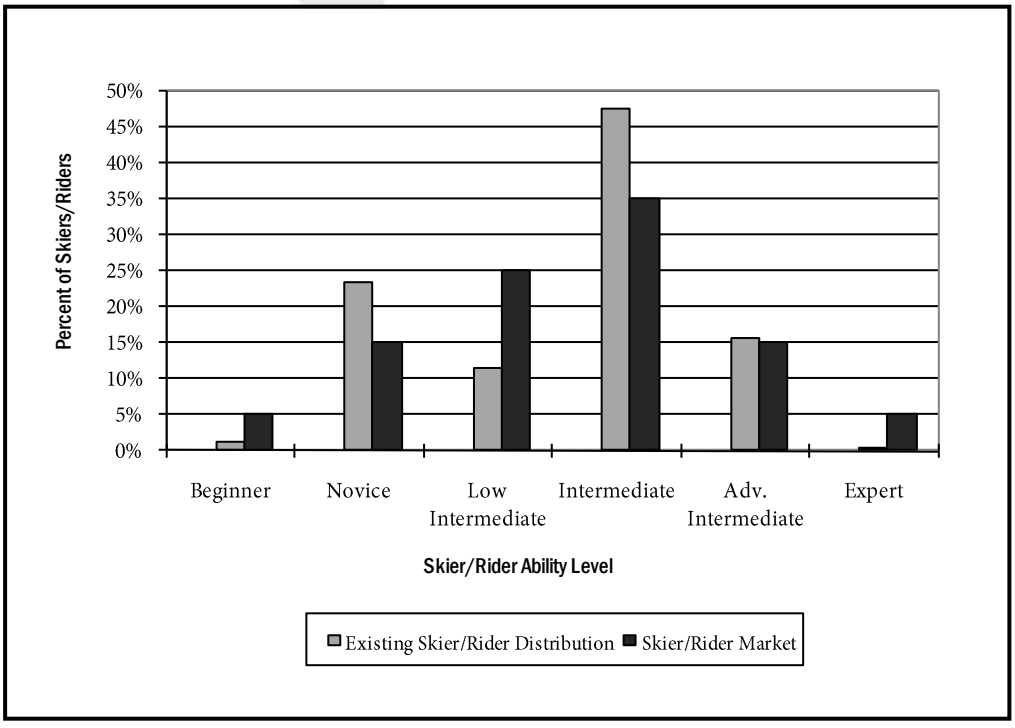
[15] This terrain total includes the managed ski area boundary, including areas accessed via snowcat and hiking.

Table 4-2:
Terrain Distribution by Ability Level – Existing Conditions

Skier/Rider Ability Level	Trail Area	Keystone Skier/Rider Distribution[a]	Skier/Rider Market
	(acres)	(%)	(%)
Beginner	3.7	1.1	5
Novice	124.9	23.5	15
Low Intermediate	79.5	11.6	25
Intermediate	455.2	47.5	35
Adv. Intermediate	216.2	15.8	15
Expert	12.3	0.4	5
TOTAL	**891.1**	**100**	**100**

[a] Keystone's Skier/Rider Distribution is based on terrain capacity.
Source: SE GROUP

Chart 4-1:
Terrain Distribution by Ability Level – Existing Conditions



The terrain distribution figures indicate that there is a surplus of intermediate and advanced intermediate terrain, while a deficit is shown at the beginner, low intermediate and expert ability levels. It should be noted that the shortage of high-end terrain is compensated for by the naturally gladed terrain and open bowl skiing which is not included in the developed trail terrain distribution.

The developed terrain network accommodates the entire range of ability levels, from beginner to expert. The terrain specification table in Appendix A (Table 3) provides specific information by individual ski trail.

Keystone's 891 acres of developed lift-served terrain are located on, or accessible from, three mountains:

1. Dercum Mountain

The summit of Dercum Mountain is at 11,640 feet and offers a variety trails with long groomers, the A-51 Terrain Park, night skiing/riding terrain, and tubing at Adventure Point. The reader is referred to Figure 4.1.

All guests moving to and from North Peak and the Outback must transition through this area. A limited amount of space at the summit of Dercum Mountain, coupled with six lift terminals, the Summit House facility and Adventure Point create congestion issues. People moving from River Run to North Peak and Outback must go over the mountain top after riding the River Run gondola or the Summit Express. Guests coming from the Mountain House base take either the Peru Express or Argentine Lift, and then ride Montezuma, before they can go over the top of Dercum Mountain.

The front side (north face) of Dercum Mountain generally has gentle slopes on the upper three quarters and steeper slopes on the bottom quarter. Most of the skiers/riders in the low intermediate skill class (a large part of Keystone's clientele) choose to use the central trails (i.e., *Paymaster* to *Schoolmarm*) but must negotiate more difficult parts of the mountain to ski these desired trails. Allowing skiers and riders to bypass of this steep section of trail would alleviate this situation. When riding the Montezuma Express, guests can avoid the lower steep pitch but must use *Upper Schoolmarm* to access the top of these trails. If they use the Peru Express, they must take the *Lower Schoolmarm* or *Dercum's Dash* skiways to access the bottom of the mountain. Most guests will choose to use the Montezuma Express (Keystone's second most popular lift), and are likely to stay in the sun and on the more favorable snow conditions of the higher elevations.

Upper Schoolmarm, between the Summit House and the top of the Peru Express, is one of the most popular trails on the mountain (if not the most popular trail). It is the best novice/low intermediate route off the top of the mountain, and it provides access across the front face of the mountain for all skiers/riders, but particularly for the A-51 Terrain Park on the western portion of Dercum Mountain. The trail itself has three short sections which are extremely flat, causing the less skilled skiers to slow down or stop and then walk to the next pitch that has an adequate slope for sliding. The difficulties with the mixing of skill classes on *Schoolmarm*, particularly between the top of the mountain and the A-51 Terrain Park, is only magnified by novices walking and more skilled skiers gaining speed to get past the flat sections.

Most guests use the *River Run* trail when descending to the River Run base area. The last pitch of *River Run* is considered too steep for the number of users in the low intermediate and intermediate skill classes. This pitch gets quite congested and, in turn, the surface can become quite worn and bumpy. This deters return cycle skiing and riding, especially with lower skilled guests.

Congestion on *Spring Dipper* and *Burro Alley* is the result of lower level skiers and rider working their way through steep pitches. Allowing skiers and riders to bypass this steep section of trail would alleviate this situation.

The installation of the mid-station on the River Run Gondola is intended to allow the low intermediate and intermediate guest to comfortably round trip the upper two-thirds of Dercum Mountain, especially the underutilized trails to the east of the Gondola alignment. These guests then can avoid the steep final pitches of the *River Run* trail by downloading to the village from the gondola mid-station.

Most of the terrain on the backside of Dercum Mountain has fairly steep slopes and has aspects in the south to southwest directions. *Mozart* has characteristics which classify it as intermediate. The southern aspect and narrowing in the steepest section towards the bottom cause difficulties for lower ability level skiers and accelerated snow wear. To compound the problem, *Mozart* is the only "blue" route from Dercum Mountain to North Peak and the Outback; therefore, it is the most used access route to the southern part of the ski area.

The Windows area consists of a number of routes in the trees varying from wide meadows to narrow chutes. This area is accessed via a short hike from Dercum Mountain and due to this, is used sporadically, but somewhat heavily when fresh snow falls. Although the center of The Windows is quite steep, terrain bounding this area to the north and south has moderate slopes.

Teaching Terrain

Beginner areas are a vital component of a ski area in attracting new participants to the sport. The 2002 Forest Plan FEIS recognizes the importance of this experience, and states:

> *"The basis of the industry's initiative is the fact that 85 percent of the people who try skiing drop out of the sport, or in other words, 15 percent of people who try the sport are eventually converted from beginners to core skiers. The proposal involves two actions, increasing number of people who try skiing, and increasing the percentage of the people who try skiing and become part of their core market."*[16]

All of Keystone's beginner areas are located on Dercum Mountain.

Beginner skiers and riders coming through the River Run base either use the Sunkid teaching conveyor beside the bottom gondola station or ride the gondola to the mountain top to access the Kokomo conveyor or Ranger lift. Generally, the children's ski school participants stay in the base area and then move onto Kokomo and the Ranger chairlift at the summit of Dercum Mountain, where as the adult ski school participants start at the summit.

Although there are two beginner lifts at the top of Dercum Mountain, there are no specific beginners/children's facilities in the Summit House and the lifts and trails are subject to wind. Both beginner lifts are located in and amongst the other ski trails, and although the Kokomo trail is roped

[16] White River National Forest Land and Resource Management Plan, Final Environmental Impact Statement, p. 3-441

off to provide segregation from the higher skilled skiers on *Schoolmarm* and *Endeavor*, both trails on Ranger are frequented by skiers/riders in much higher skill classes (going to *Diamond Back* and North Peak).

Finally, a sizeable (roughly 3.5 acres) beginner area is located at the Mountain House base. The Discovery double chairlift and four teaching conveyors service this teaching terrain.

2. North Peak

The summit of North Peak is 11,645 feet. This mountain offers skiers and riders long runs (some with moguls) with a variety of intermediate, advanced intermediate, and expert trails. North Peak is not directly accessible from the base areas and skiers and riders must descend the south side of Dercum Mountain to access both this area and The Outback (unless they take the Outpost Gondola from Dercum Mountain). The reader is referred to Figure 4.3.

Skiing and riding in this area is currently served by the Santiago Express and Wayback lifts. The Santiago Express terrain faces primarily north and northwest and consists of trails and gladed areas with skill classes ranging from intermediate to expert. The Wayback lift's primary purpose is to provide egress from the Outback. Although there is return skiing/riding on *Fox Trot*, *Anticipation* and *Spillway*, many of the users of these trails use them only for access to the Outback.

3. The Outback

The Outback Express top terminal is at 11,940 feet and offers skiers and riders intermediate through expert terrain. The Outback is home to excellent tree skiing and riding, as well as the North and South Bowls, which are accessible via hiking or the Outback Cat Shuttle (described in more detail below). The reader is referred to Figure 4.3.

The Outback lift services four traditional trails (including two with snowmaking), and gladed areas (on north, west and south aspects) which are used on a regular basis when snow conditions are suitable. Trail offerings fall into the intermediate to expert skill classes, with the developed trails in the intermediate to advanced intermediate skill classes.

Skiers and riders in the Outback are mostly concentrated on *Elk Run* due to its visibility and accessibility. Guests unload directly onto this trail and it is positioned under the lift line. The entrances to the other trails are less obvious due to topography and remaining tree islands at the beginning of the trails. These trails do not attract significant numbers of skiers/riders from the

intermediate and advanced intermediate skill classes because their entrances are hidden the skiers/riders assume that the trails are more difficult. This impression is exacerbated as these trails get bumped out.

4. Glades, Hike-To and Snowcat Served Terrain

In addition to the 891 acres of lift served, developed terrain on Dercum Mountain, North Peak, and the Outback, Keystone offers approximately 1,700 acres of hike-to and snowcat served terrain in the eastern portion of the SUP area. In addition, approximately 440 acres of glades are offered through The Windows, The Outback, and in forested areas between the developed trail network.

Hike-to and snowcat-served terrain is located in Bergman, Erickson, and Independence Bowls. Historically, Bergman, Erickson, and Independence Bowls were used by backcountry skiers, who accessed terrain by hiking from developed portions of the ski area. The terrain offers a unique, in-bounds "backcountry-light" skiing and riding experience.

Keystone has provided snowcat access to these areas via Keystone Adventure Tours (KAT) since gaining Forest Service approval in 2003.[17] Existing KAT terrain is depicted on Figures 4.1 and 4.3. Powder skis are provided to KAT guests and are included in the cost. Poles and boots are not provided. A lift ticket to get up to the top of Dercum Mountain is included in the tour package. KAT's highly skilled guides are members of Keystone's ski patrol, and are not ski instructors. These tours are for intermediate to expert skiers and riders who are accustomed to, and adept in, powder and trees. The KAT program is highly successful (i.e., the two snowcats are typically full), however, the terrain is highly underutilized compared to lift-served trails throughout the SUP area.

All of these areas are maintained by Keystone and patrolled and swept at the end of the day by the Ski Patrol. A summary of each of these bowls follows.

a. Bergman and Erickson Bowls

Bergman Bowl, located directly east of The Outpost on North Peak, has gentle slopes compared to Erickson Bowl, with primarily west-facing aspects. The upper bowl has extremely gentle slopes suitable for low intermediates, while the lower slopes are somewhat steeper and suitable for intermediate/advanced intermediate skiers. Only the lower half of the bowl is treed and just a small portion of it is skied. KAT primarily uses the upper half of Bergman Bowl to assess and initiate the snowcat program for guests prior to engaging them in more difficult terrain in Erickson and Independence bowls. The KAT pickup point is located along treeline near the center of the bowl.

Compared to Bergman Bowl, Erickson Bowl has quite steep slopes with primarily south and southwest facing aspects which have a noticeable effect on snow quality and quantity. Once at the bottom of the bowl, skiers and riders that hiked into Erickson Bowl take *Coyote Caper* back to the Outback or Wayback lifts. Wind and slope aspect have a significant effect on snow in this zone, stripping some areas of all snow and depositing snow in other areas (with the exposures encouraging burn-off of areas with shallow snowpack).

[17] Cat skiing in Bergman and Erickson bowls was approved in 2003, with Independence Bowl approved in 2006.

b. Independence Bowl

Independence Bowl provides roughly 470 acres of expert-only hiking and snowcat-served terrain located on the north side of Keystone Peak, east of the Dercum Mountain summit. A Decision Notice signed in 2006 by WRNF Supervisor Maribeth Gustafson authorized Keystone to offer guided snowcat and hike-to skiing/riding in the Upper Independence area. It has widely varied slopes suitable for intermediate to expert skiers and riders, with the best terrain found on the north facing aspects. This area is very popular for higher skill levels due to the unique terrain and exceptional snow quality. Based on conditions, KAT runs two guided tours daily through Independence Bowl, picking skiers and riders up at the valley bottom and then transporting them up the center of the bowl towards Keystone Peak. In 2007, Keystone installed a yurt near the snowcat pick-up point. Lunch at the Independence Bowl yurt is catered by the *Alpenglow Stube*.

Boundary management is addressed in the project design criteria included in the 2006 Proposed Upper Independence Cat Skiing Environmental Assessment (2006 EA). The project design criteria restrict access into the mid- to lower- areas of Jones Gulch, thus protecting the Forest Landscape Linkage (for Canada lynx) of Jones Gulch designated in the 2002 WRNF Forest Plan. Additionally, the project design criteria function to prohibit unwanted trespass onto adjacent private properties. Project design criteria and boundary management polices related to the Independence Mountain portion of the SUP area include:

- Inform ski patrol and snowcat operators that the public and all Keystone employees are prohibited from crossing the ski area boundary rope to enter Jones Gulch (except for emergencies).
- Develop appropriate penalties for violations.
- Post signs along the ski area operational boundary paralleling Jones Gulch (e.g., “Closed. Wildlife Habitat Beyond. No Skiing/Riding in Jones Gulch”) to educate skiers and discourage backcountry use in this area.
- Establish physical barriers (a double rope along the ski area operational boundary paralleling Jones Gulch) to further identify and discourage potential backcountry users from entering Jones Gulch.
- Develop other access control measures (e.g., barriers, signage, enforcement, monitoring).
- Identify the closure, its purpose, and penalties for non-compliance on tail maps.
- Encourage Keystone and the Summit County Sheriff’s Department to develop a memorandum of understanding to enforce wildlife closures.
- Provide signs at the information portals accessing the Upper Independence area and at strategic locations along the top of the terrain that will be visible to all hike-to skiers/riders entering the area.

- Provide signs at hike-to collection points at the bottom of the bowl that will direct them to the compacted hike-back track.
- Monitor unauthorized backcountry use in Jones Gulch
- Implement adaptive management, as needed, to further discourage backcountry use in Jones Gulch.

c. North Bowl and South Bowl

From the top of the Outback Express, guests may hike up approximately 350 vertical feet to access terrain in North Bowl or South Bowl. For a small fee, a snowcat will transport guests who do not wish to hike.[18] The snow in North Bowl is typically very good quality due to its northerly aspect and elevation. *Coyote Caper* serves as an egress route in the bottom of North Bowl.

South Bowl is less used than North Bowl, partly due to the fact that it is less developed and because it has southwestern aspects. South Bowl has some of the steepest skiable terrain at Keystone and has long, consistently steep slopes off the west face of Wapiti Peak.

5. Out-of-Bounds Terrain

One backcountry access point, located above Bergman and Erickson Bowls, enables access to out-of-bounds terrain east of Keystone's SUP area.[19] Although used on an infrequent basis, this point enables access to backcountry terrain immediately adjacent to the developed and undeveloped portions of the ski area.

6. Terrain Parks

Current trends in park and pipe design are focused on quality and creating progression, so that less experienced riders have the means and ability to learn how to use the more difficult features. Parks are typically made up of pipes and constructed features. Pipes include superpipes, regular half pipes, mini or beginner half pipes, and quarter pipes. Features include both snow features, like rollers, step up hits, tabletops, and hips; as well as constructed features like rails, fun boxes, C boxes, spines, rainbows rails, and trapezoid rails, to name just a few. Beginner parks typically have features that are lower in height, softer, and rounder; typically with rollers and wide rails. The next step usually has small tabletops and more difficult rails. From there, parks will progress rapidly in technical ability, showcasing significantly larger jumps and technical features. Another way resorts are increasingly

[18] The Outback snowcat is typically full.

[19] Note: Pursuant to the Colorado Ski Safety Act, the ski area assumes no responsibility for skiers going beyond the ski area boundary. To access the backcountry, guests are informed to use designated gates only. Areas beyond the ski area boundary are not patrolled or maintained. Avalanches, unmarked obstacles, and other natural hazards exist. Rescue in the backcountry, if available, is the responsibility of the Summit County Sheriff.

catering to these ability levels is by offering lessons on how to use parks, from beginner up to expert. Quality in-park construction and design is achieved by positioning various features in such a way that riders can link them together, by making individual features have multiple uses to provide variety between runs, by providing multiple take off points on features, and basically by keeping all the features of the park well built, interesting, and dynamic.

Keystone maintains three terrain parks– each catering to different guests' ability levels – located on approximately 52 acres on the western portion of Dercum Mountain (Figure 4.1). The *Smart Park* is a progression park with one small jump, two boxes and two rails. *Freda's* is a beginner park, and is a step above the *Smart Park*. It consists of four jumps, a small hip, and approximately fifteen rails features. The *A-51 Terrain Park* is Keystone's premier park, offering medium and large features. It has six jumps, two quarter pipes, one Super pipe, one mini-pipe and over sixty jibs. As of 2008, the *A-51 Terrain Park* was ranked as one of Transworld Snowboarding's Top 10 Parks for the second year running.

7. Race Areas

There are two developed race centers at Keystone. The NASTAR Race Center is located next to the upper portion of the Summit Express/River Run gondola lift corridor on *Flying Dutchman*. The race center uses approximately half of the width of *Flying Dutchman* for roughly 2,000 feet of length. The Go Devil Race Area is located on *Go Devil*, stretching from the A-51 Terrain Park to the bottom of the Peru Express, extending roughly 5,000 horizontal feet and dropping approximately 1,350 vertical feet.

Lower River Run on Dercum Mountain and *Starfire* on North Peak have been used for training by the US Ski Team.

E. Circulation and Density Analysis

An important aspect of ski area design is balancing uphill lift capacity with downhill trail capacity. Trail densities are derived by contrasting the uphill, at-one-time capacity of each lift system (CCC) with the trail acreage associated with each lift pod. At any one time, guests are dispersed throughout the resort, while using guest facilities and milling areas, waiting in lift mazes, riding lifts, or enjoying descents. For the trail density analysis, 25 percent of each lift's capacity is presumed to be inactive – using guest service facilities or milling areas.

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

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

It is noteworthy that the trail density analysis that has been performed for this MDP does not effectively demonstrate the unique, site specific skier density conditions that exist at Keystone. By design, a trail density analysis assumes that a resort's CCC is distributed evenly across the developed trail network. However, due to the Keystone's particular skier/rider demographic (composed primarily of low intermediates and intermediates), certain lift/terrain pods are more popular than others, resulting in a disproportionate concentration of use across the mountain.

Due to the abundance of low intermediate terrain located on the front side of Dercum Mountain, this portion of the ski area experiences the highest skier/rider densities, which are particularly evident on busy weekends and holidays. Because North Peak and the Outback lack low intermediate terrain, the skier/rider densities at these portions of the ski area are considerably lower than on the front side of Dercum Mountain. Therefore, dispersing low-intermediate skiers more evenly across a larger portion of the ski area would reduce front-side trail congestion and lift line wait times.

Keystone staff and guest survey data confirms that high trail densities are becoming more common throughout the year, especially during peak periods. However, this also occurs on average days during key egress periods and on new snow days in areas of off-piste lift-served terrain. In addition, some areas experience higher densities due to the merging of trails, or the closure of trails for races, grooming, etc. Consequently, the actual densities of pods are expected to be uneven at most times, resulting in high densities in some areas of the resort.

Upper and *Lower Schoolmarm*, *Spring Dipper* along "Burro Alley," *Lower River Run*, *Paymaster/Silverspoon* junction, and *Mozart* are trails that have been identified by guest surveys and Keystone staff as trails with issues related to density. Trail widening in strategic locations and bypasses of steep sections of trails will reduce densities and improve skier circulation throughout the resort, but especially on the aforementioned trails and along the entire front side of Dercum Mountain.

In addition to being able to round trip the upper two-thirds of Dercum Mountain, the installation of the mid-station on the River Run Gondola is intended to allow skiers and riders to efficiently use the underutilized trails to the east of the Gondola alignment. Increased utilization of these trails will help reduce the density related issues on *Upper* and *Lower Schoolmarm*, *Lower River Run*, and the *Paymaster/Silverspoon* junction.

F. Night Skiing and Riding

Keystone offers night skiing and riding several days a week and during the busiest periods. Several lifts and most of the trails on the front-side of Dercum Mountain operate until 8:30 p.m., including the River Run Gondola, A-51, Kokomo conveyor lift and sometimes the Summit Express. Approximately 284 acres of terrain are illuminated. During the evening hours, a portion of the Summit House is made available to night skiers and riders, as well as tubing guests.

The nighttime lift CCC at Keystone has been calculated at approximately 3,130 skiers. The trails have a combined capacity of approximately 8,420 skiers at one time at the ideal densities. This trail capacity is substantially higher than the nighttime CCC, and actual skier densities are lower than the desired densities associated with each ability level.

The balance of the trails available for night skiing and riding is skewed towards the lower ability levels, which is quite typical of night skiing operations, and also reflects that guests tend to use trails with skill levels lower than their actual ability at night.

Currently, there is not a need to reconfigure the trails that are lit. The trail acreage that is available is adequate for existing demand. Keystone does not foresee an increase in demand for the night skiing product. Minor upgrades to the lights and associated infrastructure will be needed as the system ages.

G. Additional Winter Activities

1. Adventure Point

Keystone offers snowtubing on top of Dercum Mountain at Adventure Point, immediately east of the Summit House (Figure 4.1). For the 2007/08 season, new tubing lanes and a state-of-the-art tubing specific lift were added. This elevated, enclosed conveyer lift has benefits from both operational/logistical and recreational perspectives – it is easy to use for guests of all ages and is easy to maintain. On the snowtubing hill, guests can choose from five lanes, each offering different speeds and experiences. Check-in for Adventure Point is at the Mountain Services Center at the south end of the River Run Village. A small yurt, serving as a warming hut, provides drinks and snacks for guests at Adventure Point. Ticket sales and locker space for the adjacent Adventure Point tubing operation are provided.

Snowbiking at Keystone is an additional activity available at Adventure Point. Guests can rent snowbikes and take lessons from Keystone's coaches and become qualified to use snowbikes or slopecycles.

2. Keystone Nordic Center

The Keystone Nordic Center is located on private lands at the River Course (Elk Run neighborhood/East Keystone). The Nordic Center offers over 9 miles (16 kilometers) of groomed trails and provides access to more than 35 miles (57 kilometers) of nearby trails through the White River National Forest (access to trails on the WRNF requires a 3- to 5-mile drive to reach the trailheads).

Daily programs include classic skiing, ski-skating, and telemark skiing lessons, snowshoeing, and family tubing (not lift-served). Rentals include: touring/skate/telemark skis and snowshoes.

3. Ice Skating

At 5 full acres, Keystone is home to the largest Zamboni-maintained outdoor skating rink (on Keystone Lake) in North America. The ice skating rink is open daily from 10 a.m. to 10 p.m., early December through February (weather permitting).

H. SNOWMAKING

1. Snowmaking System and Coverage

Keystone's existing snowmaking system is capable of providing coverage across approximately 560 acres of terrain (Figure 4.4). On Dercum Mountain, snowmaking infrastructure on six existing trails (totaling approximately 63 acres, not included in the existing 560 acres of coverage) needs to be replaced or supplemented to efficiently provide coverage. These trails include: *Jack Straw*; *Last Hoot*; *Ballhooter*; *Wild Irishman, Mineshaft,* and *Lower Mozart.*

- *Jack Straw* below "Zuma Highway" has no snowmaking (pipes or hydrants). The location of the nearest air/water hydrant makes for a long push for snowcats. Therefore, natural snow is relied upon for the most part. This accounts for approximately 1.6 of the previously-referenced acreage that does not have snowmaking infrastructure.

- The lower face of *Last Hoot* has new snowmaking, but the upper half (above that pipeline) is abandoned. Keystone relies on natural snow in this area. This accounts for approximately 8.5 of the previously-referenced acreage that does not have snowmaking infrastructure.

- The snowmaking line on *Ballhooter* is abandoned and was capped off. This line was tied in with *Last Hoot.* Keystone makes snow at the top of this trail with a fan gun from Schoolmaster trail hydrants. Snowcats are also used to push snow onto this trail, which requires a great deal of time and energy. This accounts for approximately 5.8 of the previously-referenced acreage that does not have snowmaking infrastructure.

- Keystone historically makes snow on *Wild Irishman* by using air/water hydrants from Frenchman, dragging numerous lengths of hose through the trees to this trail. This accounts for approximately 21.9 of the previously-referenced acreage that does not have snowmaking infrastructure.

- Currently, *Mineshaft* has shelters/vaults, air/water pipelines that were installed in 1991, but the hydrants were removed due to poor gun locations. This accounts for approximately 12.4 of the previously-referenced acreage that does not have snowmaking infrastructure that is operational.

- The piplines along *Lower Mozart Flats* are in need of replacement due to high concentration of electrolysis. This accounts for approximately 13.3 of the previously-referenced acreage that does not have snowmaking infrastructure.

Both *Ambush* and *Geronimo* trails on North Peak are in need of upgrades to their existing snowmaking infrastructure in order to provide consistent coverage. Snowmaking has not been blown on their combined 29 acres in many years due to the age of the air/water pipelines. These pipelines need to be replaced before Keystone can continue their snowmaking operations on these trails.

Snowmaking operations typically begin during the middle of October and finish in early January, with the goal of making all the snow required for the season in the period between October 16 and

January 16. Keystone produces machine-made snow at an average depth of 18 inches of snowmaking coverage over approximately 92 days during the season.

The existing capacity of the snowmaking system is 4,200 gallons per minute (gpm) of water and 24,728 cubic feet per minute (scfm) of compressed air. The snowmaking system is a mixture of automatic and manual air/water and water only fan gun systems. The distribution system consists of 734 Rogers hydrants, installed starting in 1984, and 393 York hydrants, installed starting in 1989. The York system is fully automated and covers approximately 115 acres.

Four buildings house pumps, compressors and valves. The primary pump station is located just north of the Pika parking lot near the Mountain House base area. Control Building (CB) 1 is located approximately 350 feet west of the top Argentine chair and contains a compressor and pumps. CB 2 is located near the bottom of the Ruby Express and is primarily a valve station. CB 3 is located approximately 700 feet east of the bottom of the Outback Express and contains both compressors and pumps.

Keystone's existing snowmaking system diverts water directly from the Snake River. Per state and federal regulations, Keystone must maintain minimum in-stream water flows (as decreed by the Colorado Water Conservation Board's 6 cubic feet per second [cfs] winter instream flow water right) consistently throughout its diversion period (approximately mid-November through late December). In conjunction with the construction of the Roberts Tunnel in the late 1950s, a "vent shaft" was installed approximately 3.8 miles east of Keystone Resort just south of Montezuma Road. Under agreement with Denver Water, since 1999, Keystone has pumped water from the Roberts Tunnel via the "Montezuma Vent Shaft" into the Snake River during periods of the snowmaking season (late fall and early winter). Keystone's current operational practice is to pump water from the Montezuma Shaft into the Snake River, where it is conveyed in-stream to Keystone's existing snowmaking intake structure located on the south side of the Snake River near Mountain House, where the water is re-diverted.

However, during optimal snowmaking periods, minimum stream flow considerations can sometimes cause Keystone to curtail its peak snowmaking diversion rate in order to satisfy the 6 cubic foot per second minimum stream flow requirement.

Furthermore, constraints imposed by Denver Water's operation of the Roberts Tunnel in recent years have limited Keystone's ability to utilize water pumped from the Tunnel via the Montezuma Shaft. Denver Water's historic operation (since construction in the 1960s, extending through the 1990s) of the Roberts Tunnel up through roughly 2003 included fewer than 3-4 instances when the tunnel was de-watered or otherwise unavailable for maintenance during times that Keystone's snowmaking diversion was active. However, recent operational practice (since approximately 2003) has included several occasions during which Denver Water's maintenance activities precluded water availability for Keystone during snowmaking season.

The combination of these two factors can limit Keystone's abilities to maximize snowmaking production during periods of early-season cold temperatures, causing difficulty in opening sufficient

snowmaking terrain coverage of suitable quality to provide an adequate guest experience for the critical Thanksgiving and Christmas holiday visitation peaks.

Keystone's snowmaking operations are detailed in Table 4-3. Improving the reliability of Keystone's snowmaking water supply via leveraging storage, seeking additional supplies, or some combination of these measures, would enable Keystone to more efficiently utilize water and power during optimal temperature conditions. Further, such improvements would enhance Keystone's ability to provide adequate early season skiing terrain to meet visitation demands during critical holiday time periods.

Table 4-3:
Snowmaking Operational Statistics

Season	Operation (hours)	Water Consumption (gallons)	Acre-Feet Produced
2002/03		185,432,028	569.07
2003/04	1,680	204,976,000	629.05
2004/05	1,695	221,000,000	680.2
2005/06		175,799,873	539.51
2006/07	1,518	150,579,005	462.11
2007/08	1,928	194,458,100	596.77

Source: Keystone Resort

2. Section 7 Consultation for Water Depletions

In 1985 and 1987, Keystone completed formal Section 7 consultation with the USFWS for a total of 1,485.2 AF of water diversions and 342.8 acre-feet of water use (depletions). Keystone's maximum annual diversions for snowmaking on record, during the 2004/05 (Table 4-3) ski season totaled approximately 680.2 acre-feet of water. Assuming the biologically conservative snowmaking depletion rate of 25 percent, the diversion total results in approximately 170.05 acre-feet of depletions. Thus, at peak total current annual depletions of approximately 170.05 acre-feet, Keystone remains within the total volume of 342.8 acre-feet of depletions that have been consulted-upon with USFWS.

I. Guest Services Space and Food Service Seating

1. Guest Services

Base area staging locations, or portals, are 'gateway' facilities that have three main functions:

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

Staging-related guest services (e.g., tickets, rentals, retail, and lockers) are currently offered in two base area staging locations (on private lands) at Keystone: River Run and Mountain House. The River

Run and Mountain House base areas also offer commercial skier services that are utilized throughout the day including food services, restrooms, and retail:

- River Run – Jackpine Lodge, Black Bear Lodge, Arapahoe Lodge, Buffalo Lodge, Silver Mill, Dakota Lodge, Expedition St., The Springs, Red Hawk

- The Mountain House – Mountain House

Additional services are provided on-mountain in three locations: Summit House, La Bonte's Cabin and the Outpost Lodge. A complete inventory of existing guest services can be found in tables 7-9 and 14 of Appendix A. Facility conditions are addressed below in the "On-Mountain Facilities" discussion.

Sufficient guest service space should be provided to accommodate the existing resort CCC of 12,110 guests per day. The distribution of the CCC is utilized to determine guest service capacities and space requirements for skier services at base area portals and on-mountain facilities. The CCC should be distributed between each guest service facility location according to the number of guests that would be utilizing the lifts and terrain associated with each facility. Table 16 in Appendix A illustrates the distribution of Keystone's existing CCC amongst the base area and on-mountain facilities. Following the table is an explanation of the distribution categories.

In addition to distributing the CCC amongst the base area and on-mountain facilities, guest service capacity needs and the resulting spatial recommendations are determined through a process of reviewing and analyzing the current operations to determine specific guest service requirements that are unique to the resort. The complexity of Keystone, in terms of its physical layout, operations and programming, requires additional staffing which in turn results in the need for additional administration and employee locker/lounge space.

Based upon a CCC of 12,110 skiers, the distribution described in Table 16 in Appendix A, and the unique operational factors described above, Table 4-4 below compares the current space use allocations of the visitor service functions to industry norms for a resort of similar market orientation and regional context at Keystone. Square foot figures contained in this table are calculated to illustrate how the ski area compares to industry averages, and should not be considered absolute requirements.

Service functions include:

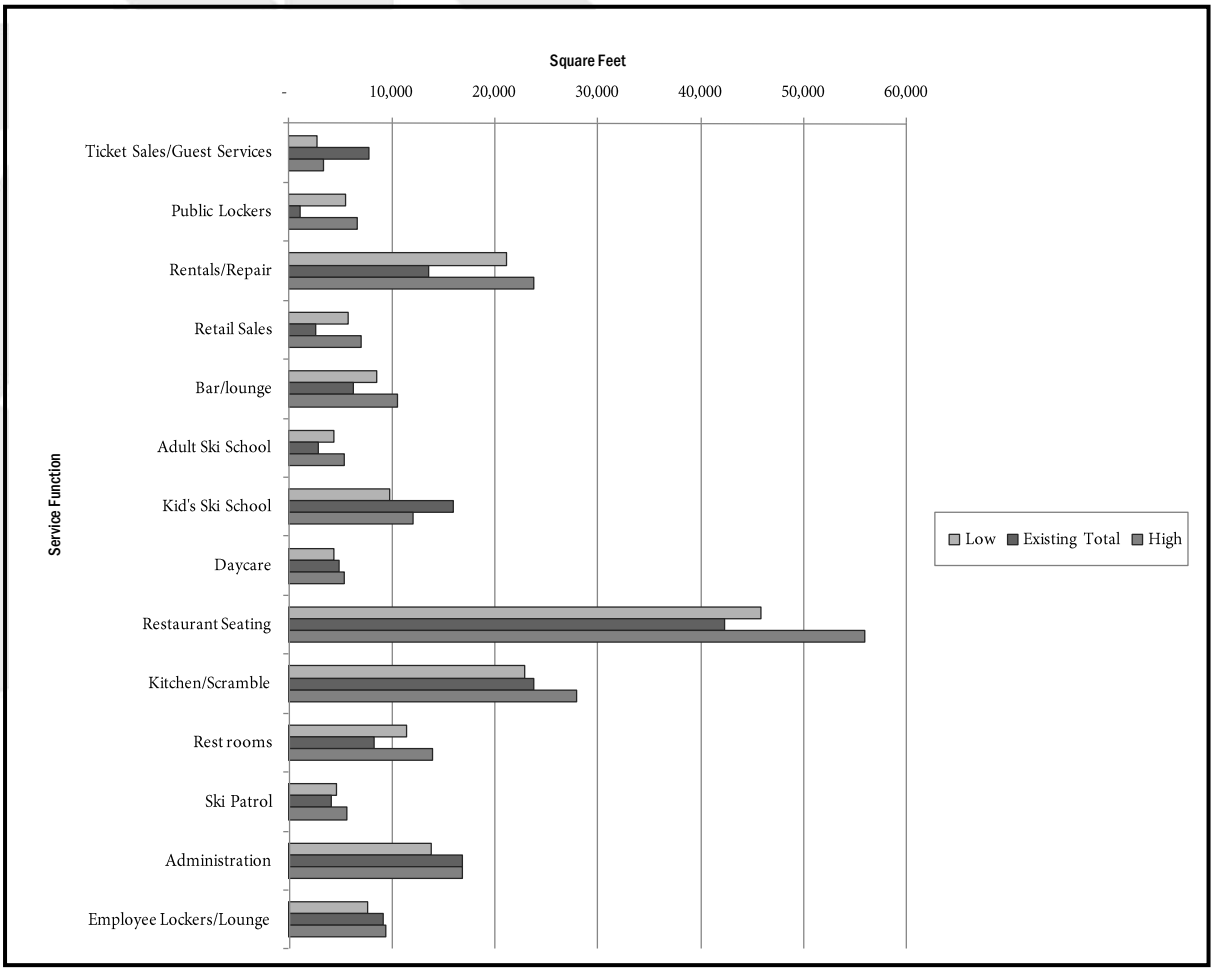
- Restaurant Seating: All areas designated for food service seating, including: restaurants, cafeterias, and brown bag areas. Major circulation aisles through seating areas are not designated as circulation/waste, not seating space.
- Kitchen/Scramble: Includes all food preparation, food service, and food storage.
- Bar/Lounge: All serving and seating areas designated as restricted use for the serving and consumption of alcoholic beverages. If used for food service, seats are included in seat counts.
- Restrooms: All space associated with restroom facilities (separate women, men, and employees).
- Guest Services: Services including resort information desks, kiosks, and lost and found.
- Adult Ski School: Includes ski school booking area and any indoor staging areas. Storage and employee lockers directly associated with ski school are included in this total.
- Kid's Ski School: Includes all daycare/nursery facilities, including booking areas and lunch rooms associated with ski school functions. Storage and employee lockers directly associated with ski school are included.
- Rentals/Repair: All rental shop, repair services, and associated storage areas.
- Retail Sales: All retail shops and associated storage areas.
- Ticket Sales: All ticketing and season pass sales areas and associated office space.
- Public Lockers: All public locker rooms. Any public lockers located along the walls of circulation space are included, as well as the 2 feet directly in front of the locker doors.
- Ski Patrol/First Aid: All first aid facilities, including clinic space. Storage and employee lockers directly associated with ski patrol are included in this total.
- Administration/Employee Lockers & Lounge/Storage: All administration/ employee/storage space not included in any of the above functions.

Table 4-4:
Industry Average Space Use – Existing Conditions: Resort Total

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	7,740	2,730	3,330
Public Lockers	1,073	5,440	6,660
Rentals/Repair	13,560	21,120	23,760
Retail Sales	2,608	5,730	7,000
Bar/lounge	6,275	8,570	10,490
Adult Ski School	2,878	4,360	5,330
Kid's Ski School	15,900	9,810	11,990
Daycare	4,800	4,360	5,330
Restaurant Seating	42,320	45,780	55,950
Kitchen/Scramble	23,794	22,880	27,980
Rest rooms	8,235	11,450	13,980
Ski Patrol	4,082	4,580	5,600
Administration	16,867	13,740	16,790
Employee Lockers/Lounge	9,119	7,660	9,370
TOTAL SQUARE FEET	**159,251**	**168,210**	**203,560**

Source: SE GROUP

Chart 4-2:
Total Space Use And Recommendations – Existing Conditions



As shown in the above table and chart, from a resort wide perspective Keystone does not have adequate space overall to accommodate the needs of the resort's capacity with significant deficits in space for lockers, rental, restaurant seating, and restrooms.

The tables do not indicate whether the overall deficiency is typical at each base area and on-mountain facility location, nor do they speak to the location or quality of the guest services. Further analysis of the individual guest service locations is required to determine specific locations and amount of surplus or deficit space throughout the resort. This level of analysis is necessary in order to determine opportunities for future expansion or improvements to the guest experience.

The following tables and text address the existing space use at each guest service facility. The space recommendations in the following tables are directly related to the distribution of the resort's capacity to the various guest service facilities located in the base areas and on-mountain, as illustrated in Table 16 found in Appendix A. This distribution responds to the ideal movement of guests onto and around the mountain throughout the day. As such, it is important to provide adequately sized facilities at each location to respond to this guest circulation.

a. Base Area Portals

As stated in Chapter 2 (Design Criteria), base area facilities/portals play a vital role in the operation of Keystone and in the overall guest experience.

River Run

Skier service facilities at the River Run base area are provided in a collection of small, stand-alone buildings in the commercial level of some of the buildings throughout the River Run village, including: Ski School, Rental Sprung, Mountain Services Center, Tickets, Ski Check, Jackpine Lodge, Black Bear Lodge, Arapahoe Lodge, Buffalo Lodge, Silver Mill, and Dakota Lodge. Each of these facilities is well maintained. A complete inventory of existing guest services can be found in Tables 7, 8, 9 and 14 in Appendix A. The River Run portal accommodates approximately 70 percent (or 8,477 guests) of Keystone's total CCC.

The River Run base area is located on the eastern end of Keystone's base area lands, and provides staging services for day skiers and riders who park in the adjacent day skier lots or arrive via the local shuttle/bus service. River Run also provides services for overnight guests staying in adjacent accommodations that either walk to the facilities from their units or arrive at the base area via the local shuttle/bus service. Total space currently used for guest services (not including walls, waste, storage and mechanical) provided at the River Run base is approximately 55,000 square feet, including the space offered by third parties in the village.

Table 4-5:
Industry Average Space Use – Existing Conditions: River Run

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	2,660	1,910	2,330
Public Lockers	365	3,810	4,660
Rentals/Repair	5,650	9,490	10,680
Retail Sales	808	4,010	4,900
Bar/lounge	-	1,040	1,280
Adult Ski School	1,025	2,400	2,930
Kid's Ski School	4,400	5,400	6,590
Daycare	4,800	2,400	2,930
Restaurant Seating	15,166	5,570	6,800
Kitchen/Scramble	6,944	2,780	3,400
Rest rooms	2,384	1,390	1,700
Ski Patrol	-	560	680
Administration	6,960	2,750	3,360
Employee Lockers/Lounge	2,454	1,530	1,870
TOTAL SQUARE FEET	**53,616**	**45,040**	**54,110**

Source: SE GROUP

As shown in Table 4-5, the River Run base area facilities fall just above the recommended range, largely due to the amount of administrative space in this location. Despite the overall surplus, there are significant deficits of space in rentals and retail. While the retail deficit is likely not an issue due to the existence of third party vendors within the River Run base area, the rental deficit directly impacts the guest experience, primarily for entry-level guests who are attempting to learn a new sport. There is a significant surplus of restaurant seating space in this location, offsetting the deficit of on-mountain restaurant space (see Summit House discussion).

Mountain House

The Mountain House base area is located on the western end of Keystone's base area lands, and provides staging services for skiers and riders who park in the adjacent day lots or who arrive via the local shuttle/bus service. Mountain House also provides services for overnight guests staying in adjacent accommodations, which either walk to the facilities from their units or arrive at the base area via the local shuttle/bus service.

Mountain House accommodates 30 percent (or approximately 3,633 guests) of Keystone's guests. The base area facilities provide staging services in nine stand-alone buildings: Mountain House, Children's Center, Ski Rental Building, Administration, former Snowboard Rental, Guest Services, Ticket Office, Mountain Operations, and Winterset.[20]

Table 4-6:
Industry Average Space Use – Existing Conditions: Mountain House

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	5,080	820	1,000
Public Lockers	208	1,630	2,000
Rentals/Repair	7,910	11,630	13,080
Retail Sales	1,700	1,720	2,100
Bar/lounge	3,600	1,610	1,970
Adult Ski School	1,853	1,960	2,400
Kid's Ski School	10,000	4,410	5,400
Daycare	-	1,960	2,400
Restaurant Seating	13,434	8,580	10,490
Kitchen/Scramble	5,890	4,290	5,240
Rest rooms	1,906	2,150	2,620
Ski Patrol	1,382	860	1,050
Administration	9,307	10,990	13,430
Employee Lockers/Lounge	5,965	6,130	7,500
TOTAL SQUARE FEET	**68,235**	**58,740**	**70,680**

Source: SE GROUP

[20] All of these buildings will be removed if the proposed Mountain House base area redevelopment occurs.

As shown in Table 4-6, the Mountain House base area facilities do have adequate space overall to accommodate the current capacity needs, although there are significant deficits in space for lockers, rentals, and restrooms. Aggravations associated with long lines for rentals can set the tone for a guest's enjoyment for the day.

There is a significant surplus of restaurant seating space in this location, offsetting the deficit of on-mountain restaurant space (see Summit House discussion below).

b. On-Mountain Facilities

In addition to the skier service space provided in the two base areas, there are a number of skier service buildings located on the mountain. An inventory of these is provided in Table 14. Currently, there are over 37,000 square feet of skier service space provided in three different on-mountain buildings. The on-mountain buildings contain food service facilities, restrooms, accessory retail, ski patrol and space dedicated to mountain operations.

Summit House

The Summit House, located at the top of Dercum Mountain, was one of Keystone's original buildings. It was there when Keystone opened on November 21, 1970, and was originally known as "Key Top." At the time, the Mountain House was the only base area building and was known as "Key Base."

Summit House is located adjacent to the top terminals of the Montezuma Express, River Run Gondola and Summit Express front side lifts, as well as the backside Outpost Gondola, Ruby Express and Ranger lifts (Figure 4.1). Due to the ease of lift access, the general location of Summit House could facilitate a substantial amount of the resort's mid-day capacity. However, current limitations in seating capacity and efficient use of space prevent the Summit House from maximizing the service opportunities presented by its central location

The Summit House provides food service including bar/lounge, retail and restrooms, as well as ski patrol facilities. Two small yurts, serving as a warming hut, provide drinks and snacks for guests using the tubing facility.

The Summit House is an older facility, and has been expanded and retrofitted several times, resulting in a series of disconnected and inefficient spaces. In addition, it is situated in an illogical location – at the center of skier/rider routes and blocking the entrance to one of the most popular trails on the upper mountain – *Frenchman.* Because it obstructs the logical entrance to *Frenchman* and makes it more difficult to see other entrances to trails under the Montezuma Express, its presence also directs more people onto *Schoolmarm*, which is one of the busiest trails on the mountain.

Finally, the existing on-site wastewater treatment system for the Summit House is antiquated and requires the maintenance of a septic system, leach fields, and sewage lagoon on public lands.

Table 4-7:
Industry Average Space Use – Existing Conditions: On-Mountain – Summit House

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	-	-	-
Public Lockers	500	-	-
Rentals/Repair	-	-	-
Retail Sales	50	-	-
Bar/lounge	1,675	4,120	5,040
Adult Ski School	-	-	-
Kid's Ski School	1,500	-	-
Daycare	-	-	-
Restaurant Seating	5,500	21,990	26,880
Kitchen/Scramble	4,000	10,990	13,440
Rest rooms	1,745	5,500	6,720
Ski Patrol	1,500	2,200	2,690
Administration	100	-	-
Employee Lockers/Lounge	200	-	-
TOTAL SQUARE FEET	**16,770**	**44,800**	**54,770**

Source: SE GROUP

As illustrated in the table above, there is a significant deficit of space at the Summit House, given the ideal distribution of skiers and riders. With restaurant seating almost a quarter of the recommended range, guests can become frustrated with long wait times for available seating and be forced to descend to the base area facilities for lunch. On-mountain facilities are popular lunchtime destinations, as guests typically prefer to take advantage of convenience and enjoy the panoramic views.

La Bonte's Cabin

La Bonte's Cabin is a small food service facility located at the bottom terminals of the Ruby Express and Santiago Express lifts (Figure 4.3). La Bonte's is undersized even though it serves a limited amount of terrain. A limited amount of indoor seating is available, but the majority of the seating is outdoors. The restrooms are connected to the Keystone Gulch Road sewer line.

Table 4-8:
Industry Average Space Use – Existing Conditions: On-Mountain – La Bonte's Cabin

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	-	-	-
Public Lockers	-	-	-
Rentals/Repair	-	-	-
Retail Sales	-	-	-
Bar/lounge	-	410	500
Adult Ski School	-	-	-
Kid's Ski School	-	-	-
Daycare	-	-	-
Restaurant Seating	720	2,200	2,690
Kitchen/Scramble	960	1,100	1,350
Rest rooms	600	550	670
Ski Patrol	-	220	270
Administration	-	-	-
Employee Lockers/Lounge	-	-	-
TOTAL SQUARE FEET	**2,280**	**4,480**	**5,480**

Source: SE GROUP

The Outpost Lodge

The Outpost Lodge (elevation 11,444 feet) is located near the summit of North Peak, adjacent to the terminal of the Outpost Gondola, slightly downhill from the top terminals of the Santiago Express and Wayback lift (Figure 4.3). Two gondola rides lasting a total of 45 minutes transport guests to and from this facility, which is in excellent condition and consistently meets guests' expectations from a quality standpoint.

There are two food service venues within the lodge – the Alpenglow Stube, which offers sit-down dining, and Timber Ridge, which serves as the main cafeteria during the day. At night it is transformed into a fondue restaurant, Der Fondue Chessel. The River Run Gondola and the Outpost Gondola are operated at night to provide access to The Outpost Lodge.

Timber Ridge is a spacious mountain lodge atmosphere with cathedral ceilings and a two-story stone fireplace. Alpenglow Stube is the highest gourmet restaurant in North America (ranked by ZagatSurvey and AAA Four Diamond rated). This is an elegant dining and reception location with a unique show kitchen and award winning service. This facility accommodates 85 people during the winter and summer seasons.

Although the Outpost facility is quite stunning architecturally, some inefficiencies are recognized in its layout from an operational perspective. This facility currently has 449 indoor seats and 350 outdoor seats, but has potential to be reconfigured and expanded to contain a total of over 700 indoor seats with little impact on the amount of kitchen floor space. Management has indicated that the existing kitchen space could likely include many more seats than are currently in place if new seating space were attached to the existing building and existing space was reorganized to ensure a more efficient layout.

Table 4-9:
Industry Average Space Use – Existing Conditions: On-Mountain – The Outpost Lodge

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	-	-	-
Public Lockers	-	-	-
Rentals/Repair	-	-	-
Retail Sales	50	-	-
Bar/lounge	1,000	1,390	1,700
Adult Ski School	-	-	-
Kid's Ski School	-	-	-
Daycare	-	-	-
Restaurant Seating	7,500	7,440	9,090
Kitchen/Scramble	6,000	3,720	4,550
Rest rooms	1,600	1,860	2,270
Ski Patrol	1,200	740	910
Administration	500	-	-
Employee Lockers/Lounge	500	-	-
TOTAL SQUARE FEET	**18,350**	**15,150**	**18,520**

Source: SE GROUP

As shown in the space use table, the food service facilities and restrooms available at the Outpost Lodge are currently sized adequately given the existing capacity needs. Any future increases in capacity will require subsequent increases in space within the lodge.

2. Food Service Seating

Food service seating at Keystone is provided at the following locations:

- River Run Base Area – Jackpine Lodge, Black Bear Lodge, Arapahoe Lodge, and Silver Mill
- Mountain House Base Area – Mountain House
- On-mountain – Summit House, La Bonte's, Outpost

A key factor in evaluating restaurant capacity is the turnover rate of the seats. A turnover rate of two to five times is the standard range utilized in determining restaurant capacity. Sit-down dining at ski areas typically results in a turnover rate of between two and three, while "fast food" cafeteria style dining is characterized by a higher turnover rate. Furthermore, weather has an influence on turnover rates at ski areas, as on snowy days guests will spend more time indoors than on sunny days. Due to the mix of restaurant types and the typically good weather, a variety of turnover rates were used for Keystone – ranging from 2 to 4.

The following table summarizes the seating requirements at Keystone, based on a logical distribution of the CCC to each service building/location.

Table 4-10:
Recommended Restaurant Seating

	BASE AREA		ON-MOUNTAIN			Total Resort
	River Run	Mountain House	Summit House	La Bonte's Cabin	Outpost Lodge	
Lunchtime Capacity (CCC)	1,546	2,384	6,108	612	2,066	12,716
Average Seat Turnover (Indoor)	2.9	2.8	3.5	4	3.5	-
Existing Seats (Indoor)	438	802	529	50	449	2,268
Average Seat Turnover (Outdoor)	2	1	1	4	1	-
Existing Seats (Outdoor)	335	304	162	150	350	1,301
Required Seats	533	866	1,731	153	590	3,873
Difference (indoor seats - required)	-95	-64	-1,202	-103	-141	-1,605
Existing seating capacity (indoor only)	1,270	2,207	1,867	200	1,572	7,116
Existing seating capacity (indoor and outdoor)	1,940	2,511	2,029	800	1,922	9,202

Notes:
River Run = Kickapoo Tavern-133, Spoon-30, Inxpot-40, Paisanos-110, Starbucks-20, Pizza on the Run-25, Parrot's Eyes-80, and Jay's Patio Café-20
Turnover rates taken from 11/07 Ecosign Master Plan
River Run turnover based on weighted average of seven restaurants (based on turnover rates from 11/07 Ecosign Master Plan)
Outpost: there are 96 fine dining seats in the Alpenglow Stube
Mountain House = Last Lift-106, Silverthorne Room-116, Dillon Room-136, Frisco Room-136, Ernie's Day Room-88, Loft-72, Bite Me-148, Outdoor-304
Summit House = Killian's Pub-104, Lower Hoedown-164, Fire Place-30, 4th fl-123, 5th fl-60, 6th fl-24, 7th fl-24, Outdoor-162, includes seating for Ski School
La Bonte's outdoor seating includes 100 seats that are "on snow"

As shown in the above table, there is a deficit of indoor seating capacity at all locations with the exception of La Bonte's. However, except for the Summit House facility, outdoor seating makes up for the deficit of indoor seats. This is particularly relevant, given the fact that most busy days occur when the weather is clear and guests may utilize the outdoor seating.

Seating and restaurant space recommendations are directly related to the lunchtime capacity. The lunchtime capacity is determined by the distribution of each lift's CCC. It is assumed that guests will prefer to dine at the facility closest to the area where they are skiing or riding. To allow for this

convenience, it is important to provide restaurant seating to accommodate the lunchtime capacity requirement of the area.

J. Inventory of Accommodations

For properties managed by Keystone, the ratio of public beds (those rented out by the resort's central booking agency) to private beds (those not available for nightly rental) was analyzed. A number of other rental management companies and private individuals offer nightly rentals within the Keystone valley. For the purpose of this analysis, it was assumed that 40 percent of the units in the other condominium properties are available for short term rentals. Table 4-11 summarizes the Keystone valley accommodation inventory.

Table 4-11:
Accommodation Inventory

	Public		Private		Employee		Total	
	Units	Beds	Units	Beds	Units	Beds	Units	Beds
East Keystone/Ski Tip	41	225	162	1,317	-	-	203	1,542
River Run/North Fork	454	1,899	384	1,918	-	-	838	3,817
Mountain House[a]	510	2,041	511	2,703	144	288	1,165	5,032
Lakeside Village/N. Keystone	455	1,677	172	810	339	848	966	3,335
West Keystone/Wintergreen	214	1,020	388	2,718	-	-	602	3,738
TOTAL	**1,674**	**6,862**	**1,617**	**9,466**	**483**	**1, 136**	**3,774**	**17,464**

[a] Includes Mountain House, Base II and Aspen Ridge.
Note: Based on 2 beds/studio, 3 beds/1 bedroom, 5 beds/2 bedroom, 7 beds/3 bedroom, 8 beds/4 bedroom, and 10 beds for large single family.
Source: Ecosign and updated 11/08 by Keystone

The theoretical Skier Walking Distance (SWD) is an analysis tool to evaluate the layout of ski resort base areas. SWD is defined as the distance someone walking in boots and carrying equipment can comfortably walk in ten minutes. A walking speed of 1.7 miles per hour is assumed, which translates to a skier walking distance of 1,500 feet over level ground. For the River Run Gondola, the skier walking distance has been measured from the approved new bottom terminal location on the north side of the river. As summarized in Table 4-12, there is currently a total of 3,768 beds within SWD of the River Run base and 2,874 beds within SWD of the Mountain House base. Therefore 10,480 of the 17,122 beds within Keystone valley (61 percent) are beyond SWD of a staging lift and guests staying in this area must either drive or use transit to get to and from the mountain.

Table 4-12:
Location of Beds in respect to Out-of-Base Lifts

	Beds
Within Skier Walking Distance (SWD)	
River Run Base	3,768
Mountain House Base	2,874
Sub-total within SWD	*6,642*
Beyond SWD	10,822
TOTAL Keystone Valley Beds	**17,464**

Source: Ecosign and updated 11/08 by Keystone

1. Skiers from Beds

By making assumptions of bed occupancy and skier participation rates, the number of skiers generated by the accommodations in Keystone on a typical busy day can be obtained.

Even though a hotel room or chalet is rented, not every bed in it may be occupied. For example, a house capable of sleeping ten may be rented by a group of seven, or one couple may occupy a hotel room with four pillows. Further, not all of the guests staying at the resort may elect to ski or snowboard on any given day. Some of the guests may be non-skiers along with the family, some may be pursuing another of the many alternative winter activities around the resort and some may not ski because it is the day they are arriving at, or leaving, the resort.

Data pertaining to the number of rooms rented, and the number of guests staying at each of the properties in Keystone's rental management system, for the 20 busiest days during the 2004/05 season was analyzed. Thus, it was possible to calculate that the bed yield (unit occupancy x bed occupancy) for the average of the ten busiest days was 88 percent. This yield was applied to the entire public bed base to estimate the number of guests generated from public beds within the valley. For private beds, a unit occupancy rate of 70 percent, and a bed occupancy rate of 75 percent, was assumed for a bed yield of 53 percent. A bed yield of 90 percent was assumed for employee housing. The bed yields were multiplied by an estimated skier participation rate to determine the skier yield from each type of accommodation, as shown in Table 4-13.

Table 4-13:
Peak Period Occupancy and Skier Participation Assumptions

Type of Unit	Unit Occupancy Rate	Bed Occupancy Rate	Bed Yield	Skier Participation Rate	Skier Yield
Hotels & Public Beds	100%	88%	88%	80%	70%
Private Condos & Homes	70%	75%	53%	80%	42%
Employee	100%	90%	90%	25%	23%

Source: Ecosign

Based on the skier yield rates determined in Table 4-14 the existing accommodations within the study area in Keystone Valley are capable of generating just under 9,000 guests on a typical peak winter day. Since Keystone experienced a peak day in excess of 18,000 guests during the 2006/07 season, it can safely be assumed that there are approximately 9,000 guests arriving from areas outside the Keystone study area during peak periods.

Table 4-14:
Skiers Generated from Resort Area Accommodations During Peak Occupancies

	Public		Private		Employee		Total	
	Beds	Skiers	Beds	Skiers	Beds	Skiers	Beds	Skiers
East Keystone/Ski Tip	225	158	1,317	553	-	-	1,542	711
River Run/North Fork	1,899	1,337	1,918	806	-	-	3,817	2,143
Mountain House[a]	2,041	1,437	2,703	1,135	288	66	5,032	2,638
Lakeside Village/N. Keystone	1,677	1,181	810	340	848	195	3,335	1,716
West Keystone/Wintergreen	1,020	718	2,718	1,142	-	-	3,738	1,860
TOTAL	**6,862**	**4,831**	**9,466**	**3,976**	**1,136**	**261**	**17,464**	**9,068**

[a] Includes Mountain House, Base II and Aspen Ridge
Note: Based on 2 beds/studio, 3 beds/1 bedroom, 5 beds/2 bedroom, 7 beds/3 bedroom, 8 beds/4 bedroom, and 10 beds for large single family.
Source: Ecosign and updated 11/08 by Keystone

Of the 9,068 guests generated from accommodations within the study area, 2,514 are within SWD of the River Run base and 1,747 are within SWD of the Mountain House base. Therefore, 4,800 guests need to drive or use the shuttle bus system to get to and from the lifts. If they choose to drive, this reduces the amount of parking available for day skiers from outside the valley area.

Table 4-15:
Guests From Beds

Guests from Beds	
Within Skier Walking Distance (SWD)	
River Run Portal	2,514
Mountain House Portal	1,747
Sub-Total Within SWD	*4,261*
Beyond Skier Walking Distance	4,807
Total Keystone Valley Accommodations	**9,068**

Source: Ecosign and updated 11/08 by Keystone

K. Parking Capacity

There are currently eight parking lots available for use by Keystone's guests; these lots can be used by either day skiers from outside the resort, or guests from within the resort staying in accommodations beyond walking distance of an out-of-base lift. The lots can also be used by resort employees and day visitors who are not skiing and riding.

Table 4-16:
Parking Inventory

Lot #	Name	Parking Spaces	Average Vehicle Occupancy	Parking Capacity (People)
River Run				
P1 - Pay	Hunki Dori	270	2.8	756
P2 - Free	Montezuma	2,000	2.4	4,800
P3 - Pay	Gold Bug	140	2.8	392
P4 - Free	Brown's Cabin	250	2.4	600
Total River Run		*2,660*		*6,548*
Mountain House				
P5 - Pay	East (Porcupine)	850	2.8	2,380
P6 - Pay	East (Pika)			
P7 - Pay	West (Marmot)	400	2.8	1,120
Total Mountain House		*1,250*		*3,500*
P8 - Free	Tenderfoot	970	2.4	2,328
Total Resort		**4,880**		**12,376**

Note: AVO based on car occupancy counts carried out on Presidents Day weekend in 2006
Source: VRDC and Ecosign

Vehicle occupancy counts carried out in the skier parking lots over the 2006 President's Day weekend indicated that the average number of vehicle occupants was 2.8 for the pay lots and 2.4 for the free lots. Based on these vehicle occupancy rates the existing parking lots can provide parking for approximately 12,375 skiers. The 2,325 skiers that can be parked in the Tenderfoot lot need bus transportation to get to one of the out-of-base lifts.

Parking lot capacities were calculated by Keystone staff; there is a total of 4,880 parking spaces available. This parking density can be achieved when parking lots are staffed and actively managed to achieve efficient parking configurations. Counts carried out over eight days in 2006 showed somewhat lower numbers of cars in each of the lots. Keystone management has indicated that the pay parking lots are not currently managed by attendants, therefore the theoretical parking densities are not being achieved. The eight lots have a theoretical capacity of 4,880 cars, while the highest of the eight days of counts in 2006 had just over 3,500 cars parked in all the lots. The 2006 counts were not carried out during the busiest period between Christmas and New Year's Day.

1. Skiers from Mass Transit

There are three bus systems that can be utilized by skiers and riders to get from their accommodations to the River Run and Mountain House bases. The first is a free shuttle bus service provided by Keystone. The second is a free county-wide system that transports people throughout the various communities within Summit County. The third is a contracted shuttle service. Keystone management provided estimates of the number of skiers and riders that arrived by mass transit at each of the two mountain bases during the busiest 15 days of the 2006/07 season. These estimates are presented in Table 4-17. On the peak day in 2007, it is estimated that over 5,200 guests arrived by mass transit.

Table 4-17:
Skiers and Riders by Mass Transit 2006/07

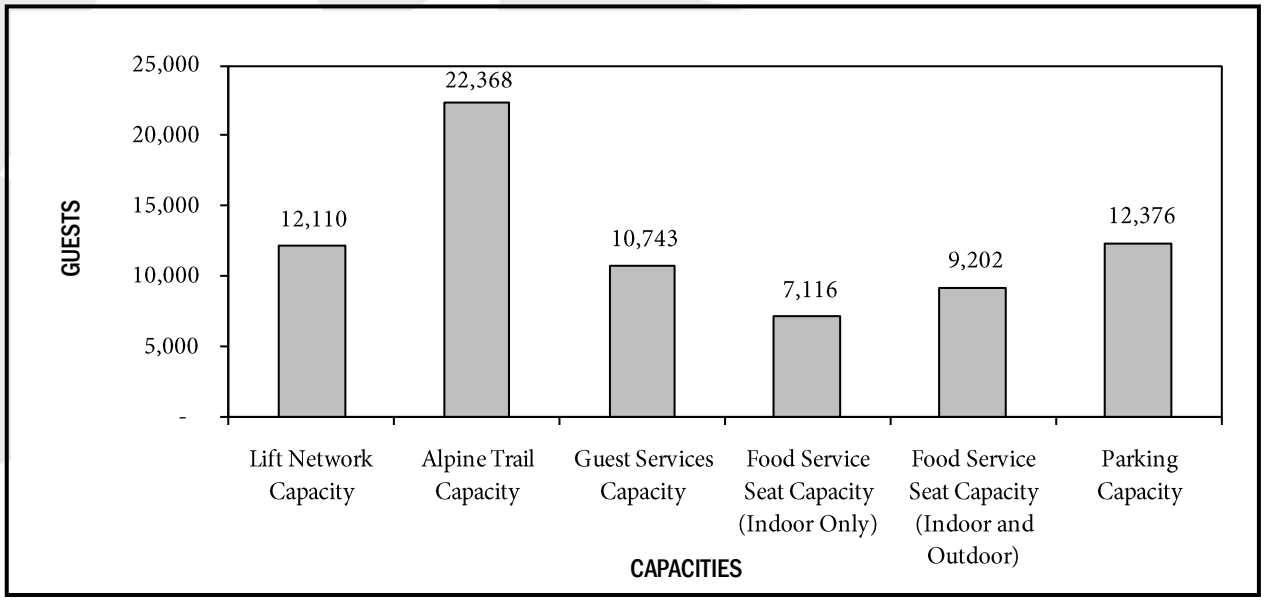
Date	Day of the Week	Visitation	Skiers by Mass Transit		
			River Run Base	Mountain House Base	Total
02/18/2007	Sunday	18,213	1,695	3,536	5,230
12/27/2006	Wednesday	15,359	1,231	2,737	3,967
02/17/2007	Saturday	15,333	1,227	2,729	3,956
01/06/2007	Saturday	14,666	1,118	2,542	3,661
12/02/2007	Saturday	13,935	999	2,388	3,337
01/27/2007	Saturday	13,881	991	2,323	3,313
12/28/2006	Thursday	13,826	982	2,307	3,289
12/31/2006	Sunday	13,361	906	2,177	3,083
01/20/2007	Saturday	13,024	851	2,083	2,934
02/10/2007	Saturday	12,982	845	2,071	2,916
12/29/2006	Friday	12,856	824	2,036	2,860
02/24/2007	Saturday	12,283	731	1,875	2,606
01/05/2007	Friday	11,723	640	1,718	2,358
02/03/2007	Saturday	11,495	603	1,655	2,258
Average of Top 10 Days			*1,115*	*2,538*	*3,653*
Average of Top 15 Days			*986*	*2,315*	*3,301*

Source: Ecosign

L. Balance of Facilities

The overall balance of the existing ski area is evaluated by calculating the capacities of the resort's various facilities and comparing those facilities to the resort's CCC. The above discussed capacities are shown in the following chart.

Chart 4-3:
Resort Balance – Existing Conditions



As the above chart indicates, the existing resort needs to achieve an improved balance of support facilities, i.e., guest services, restaurant seating and parking. Guest service space is recognized as a specific constraint at Keystone, with existing facilities falling short of accommodating the existing resort capacity.

The restaurant seating capacity for only the indoor seating is significantly lower than the existing CCC of 12,110; even with the inclusion of all of the outdoor seating, the seating capacity is only 9,202 guests per day, a number still lower than existing CCC of 12,110.

M. Operations & Infrastructure

Existing infrastructure is depicted on Figure 4.5.

1. Ski Patrol/First Aid

Ski patrol headquarters (PHQ) is currently located at the Summit House and contains lockers, dispatch and offices. The Keystone Medical Center at Mountain House is used to treat and transfer injured people coming to the bottom of the mountain. Two additional small buildings are located at the top of North Peak and The Outback where patrollers can get quick access to any injured guests. Ideally, patrollers would be located so that they can quickly and easily access any injured guest by simply skiing to them.

2. Maintenance Facilities

The existing maintenance shop is located at the Mountain House base area. Its current location provides convenient access for workers; however, it is an extremely long snowmobile or snowcat drive from the Mountain House base area to North Peak and the Outback. Relocating the maintenance shop closer to the center of the resort, while remaining out of the public's view, is desirable from an operational, environmental and financial perspective:

- It would save time as well as fuel when groomers are moving between the maintenance shop and their assigned grooming areas.
- It would minimize the instances of groomer "dead-heading" – i.e., driving back to the maintenance shop after a shift on terrain that has already been groomed or that does not need to be groomed.
- It would avoid driving through the night skiing area altogether, thus avoiding interaction with night skiers/riders.

3. Utilities

The existing utilities that supply water, sewer, gas, power, fuel storage, and communications to on-mountain facilities, including restaurants, lifts, duty stations, and snowmaking (discussed above) are adequately sized and include sufficient supply loads. Further, existing capacities sufficiently cover peak days. Xcel Energy provides electric power and gas, and the Snake River Water and Sanitation District provides sewer service. Water and fuel storage are discussed below in greater detail.

a. Fuel Storage

Keystone maintains 27 fuel storage tanks across public and private lands – 10 are underground and 17 are above-ground. Twenty-one of these tanks store diesel fuel, four store unleaded gasoline, and two store used oil. Tanks range is size from 56 gallons (e.g., the Argentine and A-51 lift backup generators) to 10,000 gallons (e.g., Keystone Gulch Refueling Area and Keystone Vehicle Maintenance Shop). Total fuel storage is 56,082 gallons.

Within Keystone's SUP area, tanks exist at the general following locations:

- Control Building 2 (CB2) at the base of the Ruby Express
- Upper and lower terminals of lifts throughout the SUP area
- The Outpost Restaurant
- The top of Dercum Mountain

Outside of the SUP area, tanks exist at the following areas:

- The Vehicle Maintenance Shop
- Keystone Lodge
- River Run Gondola Base
- River Course Maintenance Shop
- Ranch Golf Maintenance

Keystone's Spill Prevention Control and Countermeasure Plan (SPCCP) was updated in 2007. The SPCCP was done by Braun Environmental, Inc and certified by Charles A. Braun, Professional Engineer.

b. Power

Electrical power for all mountain operations at Keystone originates from a single meter located near the Sagebrush Employee Housing complex at the base of Dercum Mountain.

The entire distribution network of cables (40,000 feet) is buried and forms a loop system for reliability. All the equipment is pad-mounted on the surface. The majority of the system was installed in 2003 and is operating at 65 percent of capacity. A web-based monitoring system tracks the resort's electricity demand and consumption.

The typical maximum load of 13 megawatts occurs during the months of November through January. Snowmaking operations are a major source of the energy consumption during this time. The remainder of the winter months' energy consumption average roughly 4.5 megawatts. The off-season months average 1.2 megawatts of energy consumption.

The existing equipment consist of two primary metering cabinets, 52 transformers and 13 switches that supply electricity to: two gondolas; eleven chairlifts; three restaurants; three snowmaking plants; one snowmaking pumping station; and a variety of small facilities and surface lifts located across the mountain.

The highest priority for improving the distribution system would be to install 10,000 feet of 25kv cable and required pad-mount equipment from Control Building (CB) III to the summit of the Outback. The existing radial 480-volt cable, originating from the same location, is a very poor installation and cannot supply any additional load. In the event of a failure during winter season, facilities located on the summit would be without power indefinitely.

c. Sewer & Water

Summit House

The Summit House water system was built in 1970 and has been upgraded and modified over the years to meet increasing demands. The system consists of two wells – approximately 290 feet deep – with submersible pumps, two 25,000-gallon buried steel water tanks, a 13-foot by 26-foot concrete pump house, two 10 hp centrifugal pumps, a 2,100-gallon pressure tank with accessories and controls, hypochlorination, and post disinfection. In addition, a fire pump with both an electric motor and diesel drive is contained in the pump house. The operating season is from November through April for the winter season and June through September for the summer season

The wastewater system includes four 5,000 gallon septic tanks, a leach field (installed in 1983), and a sewage lagoon with a system flow of 0.21 MGD. The system was upgraded in 2001 with the installation of ten new drain fields.

The Outpost

The Outpost water system was built in 1991 and consists of two wells – approximately 275 feet deep – with submersible pumps, a 100,000 gallon buried steel water tank, a 12-foot by 15-foot concrete water treatment room with accessories and controls, hypochlorination, and post disinfection. The operating season is from November through April for the winter season and June through September for the summer season. The average annual diversion is 13 acre-feet.

A 10,000-gallon capacity underground grease trap is located on the west side of the building.

A 6-mile wastewater service line extends down Keystone Gulch to the Snake River Wastewater collection system at Soda Ridge Rd.

La Bonte's Cabin

The La Bonte's Cabin water system was built in 1998. The system consists of two wells – approximately 60 feet deep – with submersible pumps, a 5,000 gallon above ground water tank, and a 24 foot by 18-foot wood framed water treatment building with accessories and controls. The operating season is from November through April for the winter season and closed for remaining months except for minimal restroom use.

A 500-gallon underground tank serves as a grease trap.

The La Bonte's Cabin wastewater system is tied into the Keystone Gulch 8-inch PVC sewer line to Snake River Sewer.

N. Summer Recreational Activities

Summer activities are extremely important to the success of the resort's year round recreational operations. In addition to adding diversity to a resort's recreation offerings and potential, summer activities can make use of a resort's infrastructure and facilities that are already in place for winter recreation. Given its abundant recreational opportunities, pleasant climate, and proximity to Denver, Summit County is an enormously popular day and destination area in the summer. Keystone both benefits from, and contributes to, Summit County's summer-based recreational opportunities and associated tourism.

Keystone Resort and Summit County currently have good summer utilization, with activities including golf, mountain biking, fishing, horseback and wagon rides, tennis, boating, festivals and shows and conferences and retreats. In the future, the demand for, and diversity of, summer use in Summit County is anticipated to increase.

1. Scenic Chairlift Rides

Throughout North America, scenic chairlift ride programs are offered to provide lift access to scenic vistas. Scenic chairlift rides cater to all walks of life – from casual sightseers and families to the elderly and physically challenged. Generally speaking, mountain resorts with a restaurant, or other recreational amenities at the top of the scenic ride lift, typically experience higher summer and shoulder season utilization than resorts without specific activities. Further, the quality of the scenery also plays a large role in determining the overall success of the program.

The Summit Express and River Run gondola are operated throughout the summer season (weather permitting), taking guests to the top of Dercum Mountain. The Outback Gondola takes guests to North Peak and the Outpost – home to the Alpenglow Stube and Der Fondue Chessel.

2. Mountain Biking

Keystone operates one of the most progressive and extensive systems of cross country and downhill bike trails in North America, making for a world-class riding experience. Keystone's trails can be loosely divided into four categories:

1. traditional cross country
2. lift-served downhill
3. lift served cross country
4. free-ride parks and features

The Keystone Bike Park encompasses 55 miles of trails and, combined with the trails branching from the nearby Colorado Trail on the White River National Forest, this system provides abundant downhill and cross country riding opportunities. On adjacent White River National Forest, riders can venture onto the Keystone Ranch Loop, West Ridge Loop and the Aquaduct Trail.

Lift-served mountain bike operations typically begin in mid- to late June (dependent on snow and mud conditions on the higher elevation trails), and run through early September. Hours of operation are from 9 a.m. to 5 p.m. throughout the summer. Keystone's mountain bike headquarters is Keystone Sports, located in River Run. This is Keystone's only full-service bike shop specializing in full-suspension demo and rental bikes.

The Keystone Bike Park consists of some of the country's best downhill trails with progressive terrain for riders of all abilities. Riders can take the Summit Express to the top of Dercum Mountain and gain access to Colorado's most extensive array of lift-served terrain – from double-black diamond expert terrain including rock gardens, rock drops and high-speed features; to gentler green and blue runs that are perfect for novices and more traditional cross-country riders.

Existing mountain bike trails are depicted on Figure 5.11.

a. Beginner and Intermediate Trails (Green and Blue)

Keystone's beginner and intermediate trails provide great opportunities to enjoy the downhill experience without being an expert biker. Runs like *Let it Ride* and *Mosquito Coast* offer roller coaster rides over bridges and berms without the steepness or rock gardens that are associated with other areas of the park.

Single track dirt trails range from 18" to 36" wide, with relatively gentle grades (averaging 6 percent). Trails pass through open and forested areas, and riders may encounter smaller embedded rocks, loose rocks, and tree roots, requiring basic mountain bike handling skills.

b. Intermediate Trails (Blue)

Keystone's blue trails are more difficult versions of green trails, with steeper grades that average 10 percent. Riders may encounter larger rocks and roots, as well as moderate free-ride features such as bridges, bermed turns, and small table top type jumps. These trails require riders to possess good mountain bike handling skills.

c. Most Difficult Trails (Black)

Keystone's black trails are very difficult, steep, single track trails. Riders can expect to encounter stair-type drops that can be rolled down or dropped, with large rock gardens and roots. Larger free-ride features are to be expected. These trails require expert mountain bike handling skills.

d. Expert Trails (Double-Black)

On double-black diamond trails, riders should expect to encounter extremely rocky, steep terrain including challenging free-ride features such as skinny bridges, step-ups, drops, and gap jumps. These trails are designed for professional downhill mountain bikers.

e. Drop Zone (Double Black)

The Keystone Bike Park crew has transformed a ridge line of drops into a free fall area – the Drop Zone. Riders may choose from four alleys of multiple features all located off Paid-in-Full.

3. Road Biking/Touring

Summit County, combined with the nearby Vail Valley, offer road cyclists nearly 200 miles of paved bike paths and 400 miles of back-country roads and trails. The main attraction to bikers is the vast network of paved bike paths that connect the towns and resorts in Summit and Eagle counties. These paved trails feature trailhead parking, directional signage, and rest stops. The variety of options and terrain ensure that every level of rider can be satisfied or challenged – from a brief afternoon cruise between Breckenridge and Frisco, to full-day explorations connecting numerous towns. Riders may chose to forgo the challenge of riding up Vail Pass and instead arrange to be dropped off at the top of the Pass for a more relaxing descent east or west to Frisco or Vail, respectively.

Breckenridge, Frisco, Dillon, Copper Mountain, Vail, Avon, Silverthorne, Keystone are all ideal starting points for bike rides. Each town contains several top-notch bike shops featuring services and rentals for any level of rider, including families.

4. Weddings

Keystone's picturesque alpine setting combined with its abundance of lodging and facilities make it a popular location for weddings. Five venues are available for weddings – three of these are on-mountain, and two are on private lands near the River Run base area.

Two of the on-mountain venues are located at The Outpost Restaurant (elevation, 11,444 feet) on North Peak. As previously noted, the Alpenglow Stube is the highest gourmet restaurant in North America. This is an elegant dining and reception location that accommodates 85 guests. Timber Ridge offers a spacious mountain lodge atmosphere with cathedral ceilings and a two-story stone fireplace. Timber Ridge accommodates 250 guests in the summer.

Located at the top of Dercum Mountain, the Summit House offers a timber lined venue in a casual, rustic setting. This facility accommodates 200 guests in the summer. The adjacent deck, Mozart Deck, has a magnificent backdrop of the Gore and Ten Mile Ranges.

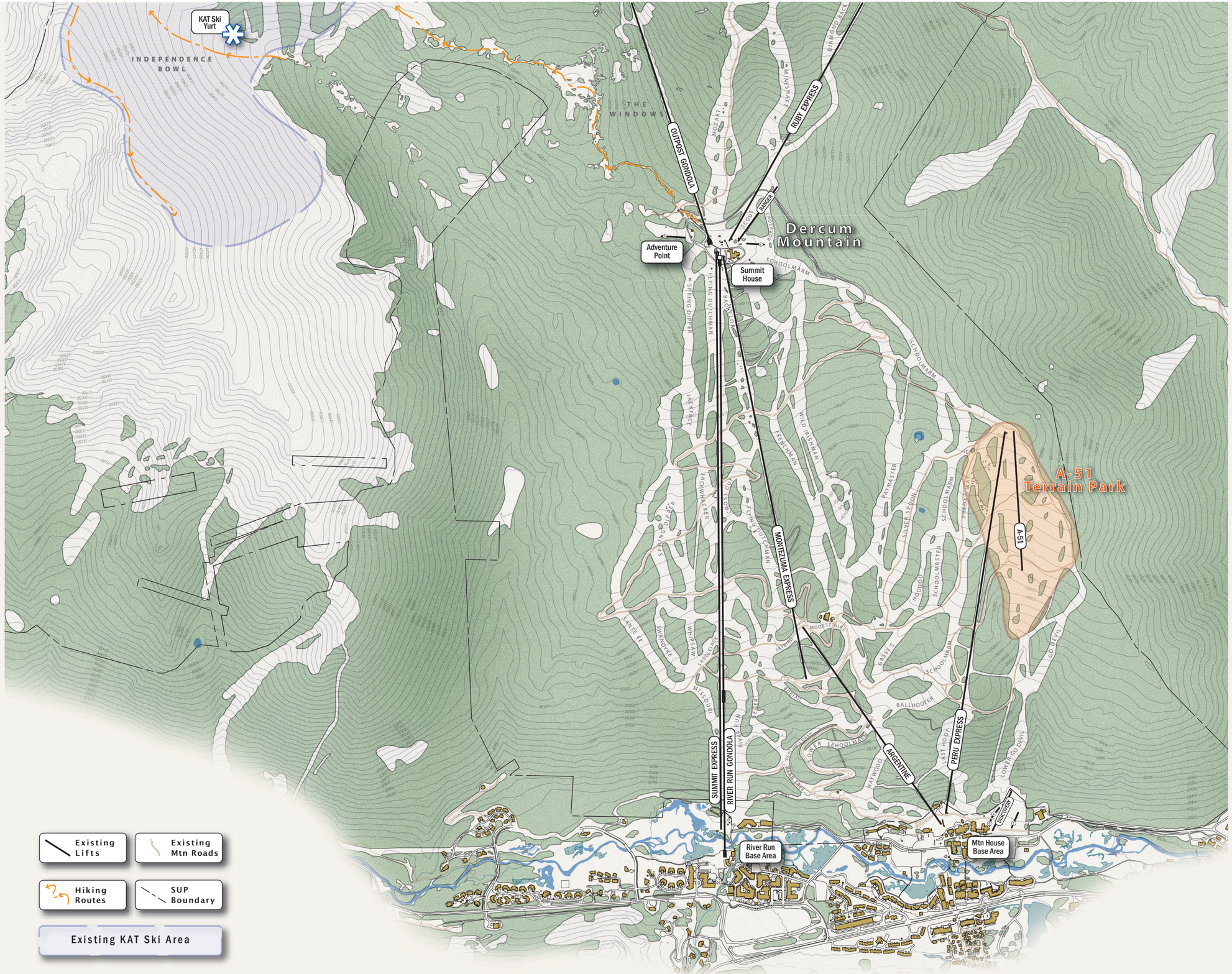
Private facilities that cater to weddings include the Keystone Ranch and Ski Tip Lodge – both of which offer more intimate settings. The Keystone Ranch (a former ranch house) includes a formal dining room, a great room, and a patio overlooking Keystone Ranch Golf Course with spectacular views of Swan Mountain and Ten Mile Range. The Ski Tip Lodge is reminiscent of a classic Swiss hotel.

KEYSTONE
COLORADO

2009
MDP

Dercum Mountain Existing Conditions

Figure 4.1



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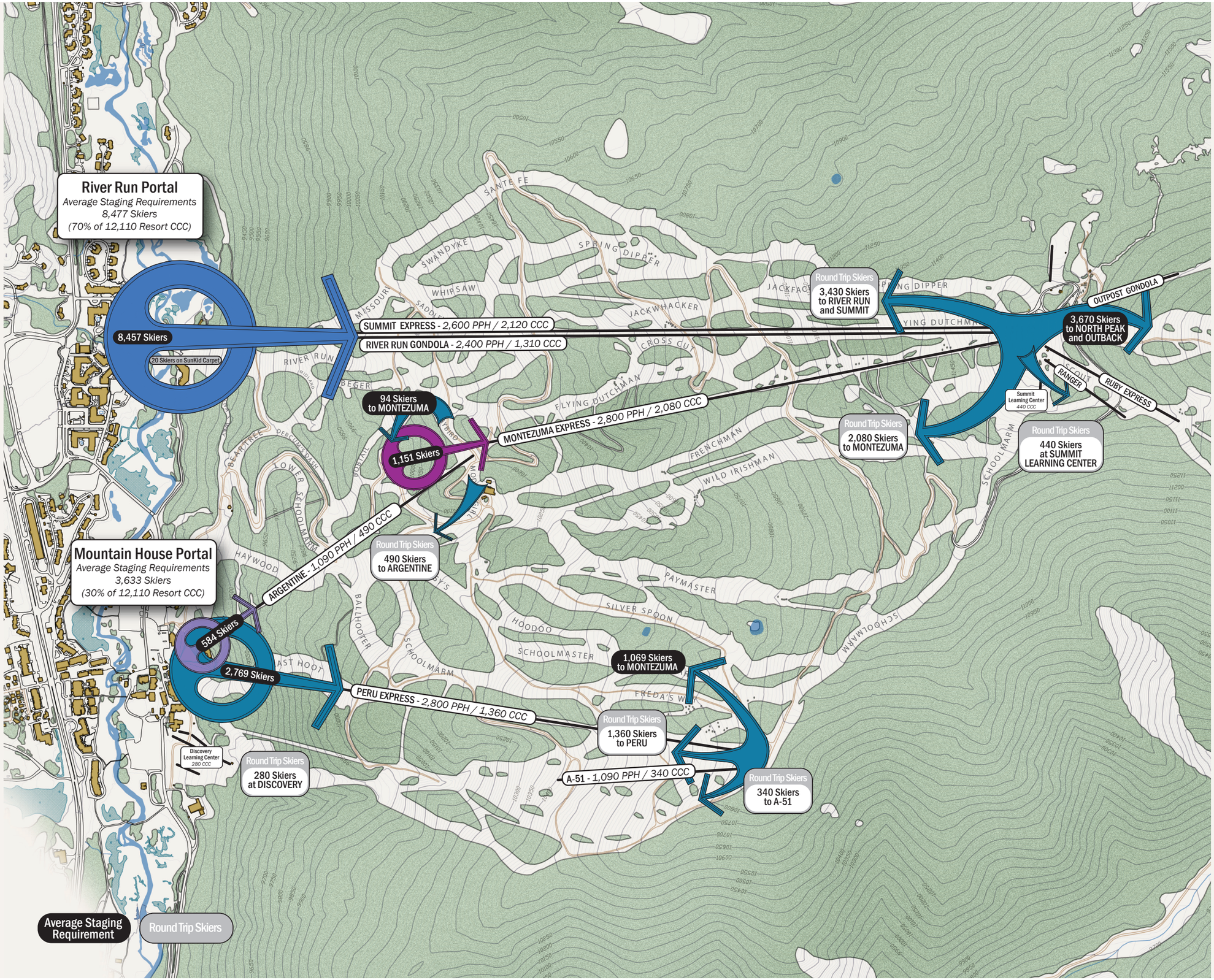
SE GROUP



KEYSTONE
COLORADO

2009
MDP

Portal Staging Capacity Existing Conditions

Figure 4.2

North

0 500 1000'

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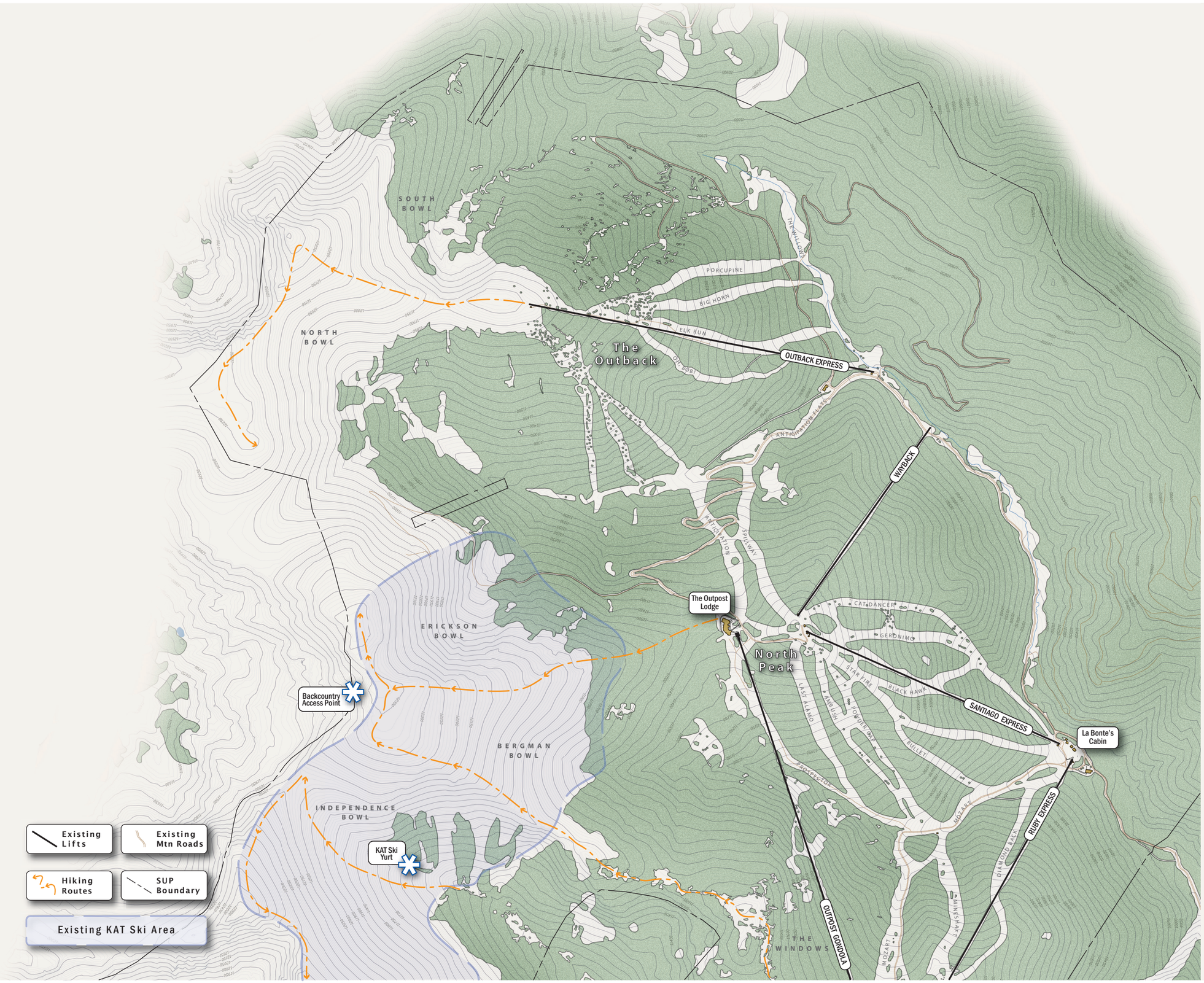
SE GROUP

KEYSTONE
COLORADO

2009
MDP

North Peak and The Outback
Existing Conditions
Figure 4.3



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Existing Snowmaking Coverage

Figure 4.4

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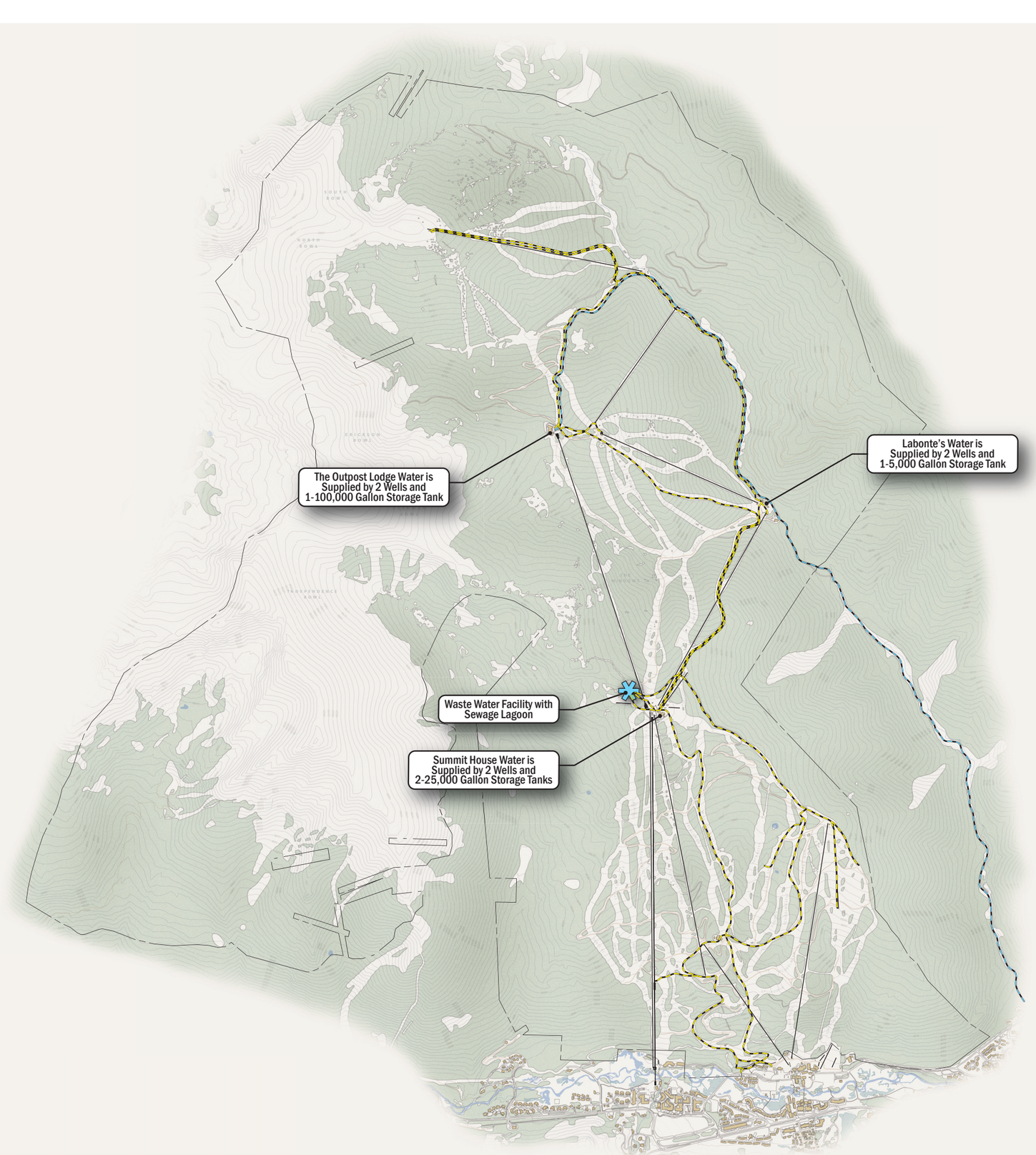
EXISTING INFRASTRUCTURE
Figure 4.5



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2009 MASTER DEVELOPMENT PLAN

CHAPTER 5: PROPOSED UPGRADING PLAN

5. PROPOSED UPGRADING PLAN

Projects contained in the Proposed Upgrading Plan – individually and as a whole – were designed to address the Goals and Objectives of the 2009 MDP (refer to Chapter 1, Section F for more information). Proposed project elements located on National Forest System lands within Keystone's SUP area will be required to undergo analysis and approval via the National Environmental Policy Act (NEPA) process prior to implementation.

The proposed upgrading plan for Keystone is illustrated on Figures 5.1 through 5.11. As shown, four lifts (Argentine, A-51, Outback, and Wayback) are planned to be replaced, upgraded, and/or realigned.[21] Several new lifts will service terrain on Dercum Mountain, North Peak, The Outback, and Bergman/Erickson/Independence bowls. Existing trails will be improved by realigning, widening, and/or regrading to improve circulation, and several new trails will be established. Finally, replacement and installation of snowmaking infrastructure on Dercum Mountain, improvements to guest service facilities, and various infrastructural enhancements, are designed to allow Keystone to better, and more efficiently, serve its clientele.

A. COMFORTABLE CARRYING CAPACITY (CCC)

Inherently, any proposal to augment a resort's lift and trail network with additional lift served terrain will affect CCC. Therefore, full build-out of the MDP will increase Keystone's CCC by 34 percent, to 16,120 guests per day - an increase of 4,060 guests over the existing condition. As stated in Chapter 4, Keystone's existing CCC of 12,060 is exceeded throughout the season (primarily during holiday weekends and during spring break in March) due to the popularity of the resort and the broad range of guests it serves. It is expected that a resort will continue to experience peak day visitation that is over and above its design CCC.

B. MOUNTAIN ACCESS PORTALS

The out-of-base lift capacity between the River Run and Mountain House base areas will increase from 8,290 people per hour (pph) to 9,000 pph.[22] With the addition of the Ski Tip portal and its' out-of-base capacity of 2,000 pph, the total out-of-base capacity for Keystone will be 11,000 pph. This represents a 33 percent increase over existing conditions (refer to Figure 5.2). The proposed CCC of 16,120 skiers/riders will be accommodated over a 1 hour and 25 minute morning ingress period.

The average staging requirements between the Mountain House, River Run, and Ski Tip portals are 30 percent, 57 percent, and 13 percent, respectively.

Mountain access portals are discussed in a broad context here, with specifics on individual lifts addressed in Section C.

[21] The capacity of the Outback chairlift is proposed to increase by adding new chairs.

[22] This is assuming that the River Run Gondola and proposed Argentine lift bottom terminal capacities are at 1,800 pph and the mid-stations are at 600 pph.

1. River Run

The River Run Gondola and Summit Express are the out-of-base lifts that transport skiers during the morning access period. The existing out-of-base capacity is 4,400 pph. Improvements to the out-of-base capacity are not proposed at the River Run portal.

The total hourly capacity (2,400 pph) of the River Run Gondola is a product of separate loading capacities for both the bottom and mid-load terminals. Keystone staff will have the ability to adjust the hourly capacity at each terminal as needs change throughout the day. For example, during the busy morning ingress period, every fourth cabin moving through the bottom terminal will remain empty. Therefore, the bottom terminal capacity will be 1,800 pph, reserving an hourly capacity of 600 pph for the mid-load station during the morning access period. As the day progresses, more hourly capacity will be needed at the mid-terminal and less at the bottom terminal and staff will adjust the capacities accordingly. For the Portal Staging Capacity Analysis, 1,800 pph was used in the modeling.

2. Mountain House

The Peru Express and the Argentine lift are the out-of-base lifts that transport skiers during the morning access period. The existing out-of-base capacity is 3,890 pph and it is proposed to increase to 4,600 pph, a 19 percent increase. The existing Argentine fixed-grip lift will be removed and a detachable quad chairlift with an hourly capacity of 2,400 pph will be installed in a new alignment with a mid-terminal that will function similar to the mid-terminal on the River Run Gondola.

3. Ski Tip

Ski Tip will become an additional base area portal under the upgrading plan. The Ski Tip Lift will have an hourly capacity of 2,000 pph and is expected to transport approximately 13 percent of the proposed CCC (2,096 guests) during the morning access period. Use of the Ski Tip Lift will be attributed to a mix of overnight guests staying at accommodations at the new Ski Tip portal, and day skiers and riders who park at the Powerline parking lot on Montezuma Road. It is assumed that 40 percent of the guests that park at the Powerline lot will use the Ski Tip lift. The remaining 60 percent would be using the Keystone free shuttle to the River Run portal.

C. LIFT NETWORK

Keystone currently operates 20 chairlifts, surface lifts and beginner carpets. This will increase to a total of 29 under this plan. With the upgrading plan:

- Five new aerial chairlifts will be installed
- Two new beginner carpets and one relocated carpet will be installed
- One new surface lift will be installed to access North and South Bowls
- Four existing aerial chairlifts will be upgraded and/or realigned

Specifics of lifts and the desired goals of lift upgrades are detailed by location throughout the SUP area in the discussion below. Trails associated with new and upgraded lifts are discussed separately.

1. Dercum Mountain

a. Ski Tip Lift

A 2,000 pph lift is proposed to be constructed between private, base area lands in the Ski Tip neighborhood (east of River Run) and a mid-mountain location along *Santa Fe*. The total length of the Ski Tip Lift will be approximately 3,400 feet, over approximately 1,154 vertical feet.

It is anticipated that approximately 13 percent of Keystone's guests will access the mountain through the Ski Tip Portal. Therefore, pressure will be taken off the River Run portal, and access through that portal is expected to decrease to approximately 57 percent of the daily CCC.

As opposed to previous concepts for the Ski Tip portal, this project does not include any associated ski trails or snowmaking. Therefore, this portal can be considered to provide "lift-to/lift-from" access for Keystone's day and destination guests. In order for the lift to be fully downloadable, a gondola or cabriolet (open carrier) configuration is proposed. Cabriolet cabins are easier to maintain, less costly to purchase, and have a higher capacity than a chairlift (eight passengers) therefore requiring less total carriers.

Because the lift will not extend to the summit of Dercum Mountain, after unloading, guests will traverse west to the to the River Run Gondola mid-terminal or the Montezuma Express for transportation to the summit of Dercum Mountain.

b. A-51 Lift and User Education Centers

Lift A-51 (serving the A-51 Terrain Park) is antiquated and does not efficiently service the terrain park due to its short length. It is proposed to be replaced with another fixed-grip chairlift in a similar alignment. The top terminal will be in a similar spot, but the bottom terminal will be moved downhill near the bottom of the A-51 Terrain Park slope. The hourly capacity of the A-51 Lift will increase from 1,090 to 1,800 pph.

Two User Education Centers are proposed to be constructed on decks at the A-51 Terrain Park. One deck (approximately 35'x40' in area) will be located at the entry to the terrain park.

Informational/safety signage will accompany this viewing deck. The other deck will be located at the midway point of the park (connecting to an existing building) and will include space for a BBQ grill.

c. Argentine Lift

The fixed-grip Argentine double chairlift is proposed to be removed and a detachable quad chairlift will be installed with a mid-load terminal. The bottom portion of the upgraded lift alignment will follow a similar alignment as the existing Argentine Lift until it reaches a flat section on *Ballhooter*, where the mid-terminal will be located. At that point, the alignment will bend, extending to the top of Dercum Mountain, topping out at *Schoolmarm*. A new skiway (the "*Jimmy Connector*") will be created from the top terminal towards the south, providing direct skiing access to *Diamond Back*, *Mozart* and the Santiago Lift (see "Terrain" discussion, below). This will expedite skier and rider migration from Mountain House to the southern portion of the ski area, and will also reduce congestion on the three trails that provide access from Dercum Mountain to the Santiago Express (*Mozart, Mine Shaft, Diamond Back*).

Similar to the River Run Gondola replacement, the bottom terminal will have an hourly capacity of 1,800 pph during the morning access period and the overall lift will have an hourly capacity of 2,400 pph.

The upper section of this lift will enable round-trip skiing and riding on some of the most popular terrain on the front side of Dercum Mountain, while enabling guests to avoid the congested *Lower Schoolmarm* skiway or steep slopes of *Haywood*, *Last Hoot*, and *Lower Go Devil*. Furthermore, this will improve skier circulation across the front-side of Dercum Mountain.

d. Ski School Learning Center at the River Run Gondola Mid-Terminal

Two surface conveyors are proposed at the mid-terminal station of the River Run gondola. A complete description of this Learning Center is contained in "Teaching Terrain" discussion under Section D – Terrain Network.

e. Ranger Teaching Carpet

A new teaching conveyor is proposed adjacent to the Ranger teaching lift. The new conveyor will improve Keystone's on-mountain ski school offerings and better meet existing and anticipated teaching/learning demands.

f. Schoolmarm Ski School Lift

A new fixed-grip triple chairlift is proposed at the top of *Schoolmarm*. The top terminal will be located adjacent to the Summit House facility, and the lift will extend approximately 1,650 feet down *Schoolmarm*. The lift will run at a slower speed that is more comfortable for beginner skiers and will have an hourly capacity of 1,000 pph. The proximity of this chairlift to the Ranger conveyors will provide the ideal learning progression for never-ever and beginner skiers in a well-managed setting.

2. North Peak

a. Wayback Lift

Currently, long lift lines are typical at the Wayback lift during the afternoon egress period, especially on peak visitation days. The existing Wayback lift (a fixed-grip quad) is proposed to be upgraded to a detachable quad in the same alignment. The lift will have a capacity of 2,400 pph. The increase in capacity will reduce the wait times at this important lift, which provides the sole means of egress from the Outback and will also help with transporting the additional traffic from Erickson Bowl once the Bergman Bowl lift is installed.

3. The Outback

a. Outback Express

The Outback Express (a detachable quad chairlift) was originally approved with a capacity of 2,400 pph. However, due to the number of chairs that were originally hung on the lift line, the lift is currently operating at a capacity of 1,800 pph. Adding additional chairs is anticipated 2010, and will increase the capacity to 2,400 pph. This action is anticipated to reduce lift wait times in this popular skiing pod.

b. Outback Surface Lift

As proposed, the new Outback surface lift will be approximately 3,425 feet long and have a capacity of 1,200 pph. It will provide access to the North and South Bowls which are currently accessed by hiking or the Outback Cat Shuttle. The popularity of the Outback Cat Shuttle indicates a growing desire for guests to access this off-piste terrain. Therefore, a surface lift was determined to be the appropriate transport to provide improved access for guests, while maintaining a low capacity within North and South Bowls (see "Terrain Network" below, for a description of North and South Bowls). The bottom terminal will be located on the north side of the ridge that separates North and South bowls, approximately 60 feet vertical down from the high point of that ridge. The bottom terminal will be accessed from the top terminal of the Outback Express.

4. Erickson/Bergman/Independence Bowls

a. Windows Lift

The proposed Windows lift (a fixed-grip triple) will provide access to terrain in *The Windows* as well as new lifts in Bergman and Independence Bowls. Access to this new lift from the top of Dercum Mountain will be gained by a new trail (Map Ref. 15-1), which is currently part of the KAT access route to Bergman and Independence Bowls. The lift will have a capacity of 1,800 pph.

From the top of this lift, skiers and riders will have three options:

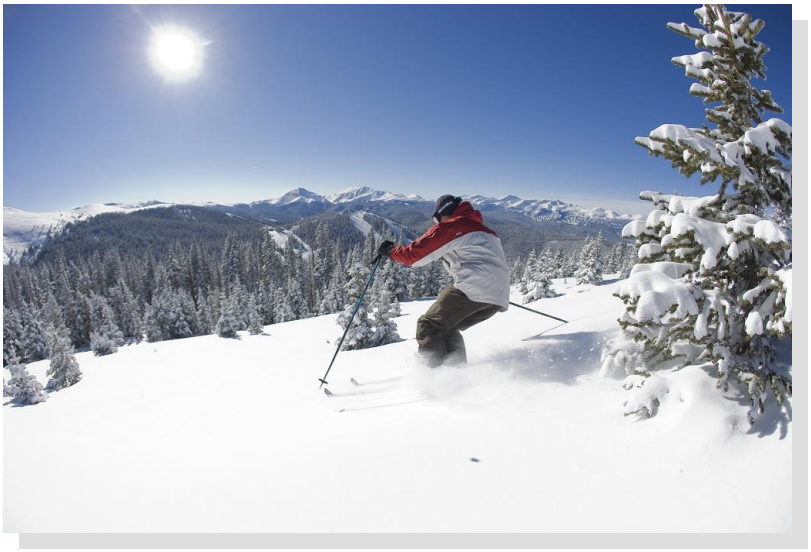
- Descend southwest through *The Windows* terrain to either the Santiago Express or Ruby Express
- Descend southeast on a new trail (Map Ref. 16-1) to the new Bergman Lift

- Hike east across the ridge that separates Bergman and Independence Bowls, and descend terrain on the north facing terrain of Independence Bowl, then ride the new Independence Lift

b. Bergman Bowl Express

A new chairlift is proposed to access terrain in Bergman and Erickson Bowls. This detachable quad chairlift will be located in the center of Bergman Bowl with its top terminal located above tree line at an elevation of approximately 12,200 feet. The bottom terminal will be located approximately 1,000 vertical feet lower (below tree line). This lift will provide round-trip access to an abundance of primarily low intermediate and intermediate, open-bowl terrain, but also terrain below tree line.

From the Bergman Bowl lift, skiers and riders can access the Outback Express, the Outpost Restaurant and terrain on North Peak, or return to Dercum Mountain via the Ruby Express. Skiers and riders could also access Dercum Mountain by hiking along the ridge on the northern boundary of Bergman Bowl to the high point above *The Windows*, ski that terrain and continue to the Ruby Express. If skiers and riders choose to descend Erickson Bowl, they will need to ride the Wayback Express if they plan on returning to the Bergman Bowl lift.



c. Independence Bowl Lift

The Independence Bowl Lift is proposed to top-out above tree line at approximately 12,250 feet and extend 300 vertical feet down (below tree line) providing access to open bowl terrain (primarily expert) on the northern aspects of Bergman Bowl. This will be a fixed-grip triple with a capacity of approximately 1,200 pph. The bottom terminal has been strategically located on an upland "island" near the headwaters of Jones Gulch. With this location, impacts to Jones Gulch stream health can be minimized and/or avoided.

D. TERRAIN NETWORK

The developed ski trail network accommodates the entire range of skier ability levels from beginner to expert. Keystone currently controls, patrols, and maintains approximately 891 acres of developed, lift-served terrain and approximately 2,149 acres of gladed and managed hike-to terrain. The proposed trail network additions at Keystone will account for an approximate total of 1,732 acres of developed skiable terrain. In total, there will be approximately 3,188 acres that Keystone will patrol, control and maintain for skiing/riding.

With the proposed upgrading plan, approximately 42 new trails will be created, increasing the formally named trail network to approximately 130 trails, totaling approximately 1,732 acres. The proposed terrain additions (accessing high alpine, hike-to areas) are designed to better accommodate the ski area's niche within the ski industry, as described in Chapter 2. Furthermore, Keystone's diverse clientele expects terrain of varying degrees of difficulty with a low-density experience. The proposed upgrades aim to meet that desire.

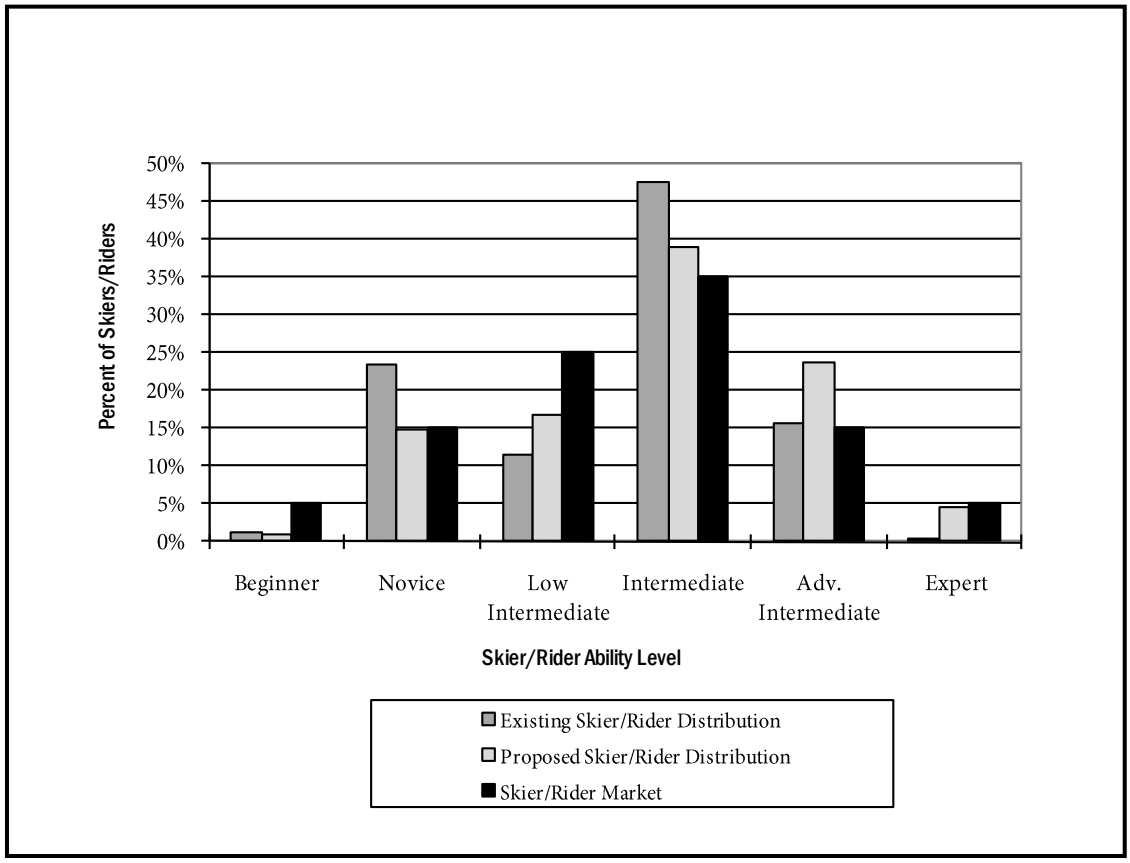
The following tables compare the existing distribution of terrain capacity by skier ability level with the distribution after upgrading. These exhibits show that the upgraded trail network at Keystone will continue to accommodate a range of skier ability levels from beginner to expert.

Table 5-1:
Terrain Distribution by Ability Level – Upgrading Plan

Skier/Rider Ability Level	Trail Area	Keystone Skier/Rider Distribution[a]	Skier/Rider Market
	(acres)	(%)	(%)
Beginner	4.8	1%	5%
Novice	131.8	15%	15%
Low Intermediate	191.1	17%	25%
Intermediate	620.6	39%	35%
Adv. Intermediate	538.8	24%	15%
Expert	244.6	5%	5%
TOTAL	**1,731.8**	**100%**	**100%**

[a] Keystone's Skier/Rider Distribution is based on terrain capacity.
Source: SE GROUP

Chart 5-1:
Terrain Distribution by Ability Level – Upgrading Plan



With the proposed upgrades, the Beginner percentage of terrain remains the same, while the Novice and Intermediate terrain fall closer to the levels expected by the market. The highly desired Low Intermediate terrain increases from 12 percent to 18 percent, closer to the market expectation of 25 percent. The addition of lifts in Independence Bowl and above The Outback increases the lift served Expert terrain from 0.4 to 5 percent, which is exactly what the skier/rider market distribution is looking for. As a result of these additional lifts, the Advanced Intermediate terrain increases from 16 percent to 24 percent, this exceeds the skier/rider market distribution of 15 percent.

It should be noted that the national skier/rider market distribution for Advanced Intermediate and Expert terrain is 15 percent and 5 percent, respectively. With the improvements of ski equipment technology and the advent of shaped skis, a greater percentage of intermediate skiers are pushing themselves into advanced terrain. This situation occurs when the appropriate conditions are present, and is becoming a more common occurrence in open bowls where fewer obstacles exist (e.g., trees).

Proposed trails are depicted on Figures 5.3, 5.5, and 5.6 and correspond to map reference numbers (e.g., "Map Ref. 1-18") included in the following descriptions.

1. Dercum Mountain

a. New Trail Bypasses on Dercum Mountain

Four trail bypasses are proposed on Dercum Mountain. These bypasses are designed to improve circulation on existing trails by allowing less skilled skiers and riders to avoid steep trail sections.

Jackface/Burro Alley Bypass (Map Ref. 1-18)

A roughly 4,000-foot long intermediate trail is proposed to the east of *Spring Dipper* connecting to the upper half of *Sante Fe*. This will enable low intermediate skiers/riders to bypass of the steep sections on *Jackface* and *Burro Alley*.

Beger Bypass (Map Ref. 1-24)

A short (approximately 600-foot) intermediate trail is proposed to the west of *Beger* to enable intermediate skiers/riders to bypass this steep section of trail.

Schoolmarm Bypass (Map Ref. 3-11 and 3-12)

The proposed *Schoolmarm Bypass* will be constructed immediately north of the existing *Schoolmarm* trail. This trail is designed to separate novice skiers/riders from more advanced guests and will allow *Upper Schoolmarm* to be converted to teaching terrain. Thus, novice skiers and riders can utilize teaching terrain on *Upper Schoolmarm* and then descend *Schoolmarm*, while intermediate and advanced skiers and riders will be diverted on the bypass to access trails such as *Frenchman*, *Wild Irishman*, and *Paymaster*, as well as the A-51 Terrain Park. The two sections of the *Schoolmarm Bypass* will be approximately 1,800 and 1,050 feet long, respectively. A tunnel under *Schoolmarm* is proposed at the western end of the second section of this bypass. This tunnel will allow the A-51 Terrain Park traffic, which will be rerouted on the *Schoolmarm Bypass*, to cross underneath *Schoolmarm* without interfacing with the novice skiers and riders on *Schoolmarm*.

b. New Connector Trails on Dercum Mountain

Four connector trails are proposed on Dercum Mountain. Each trail is intended to expedite access between specific points on the mountain, as defined below.

Ski Tip Connector Trail (Map Ref. 1-21)

A short (~600-foot) intermediate trail connection is proposed to enable skiers/riders who download from the top of the proposed Ski Tip Lift to access the River Run Gondola mid-terminal and the Montezuma Express.

Silver Spoon/Paymaster Connector (Map Ref. 3-7)

The *Silver Spoon/Paymaster* connection is proposed to improve access to *Paymaster* from the Peru Express. In conjunction with this new connection, an existing segment of trail between *Silver Spoon* and *Paymaster* will be closed and revegetated.

"Jimmy Connector" (Map Ref. 4-9)

The new advanced-intermediate "*Jimmy Connector*" trail is proposed to tie the upgraded/relocated Argentine top terminal to *Diamond Back*, on the western slope of Dercum Mountain. This trail will provide expedited access to North Peak and will dramatically improve circulation and decrease skier

densities on *Mozart*. It will no longer be necessary for guests from the Mountain House Portal to ride two lifts (Peru/Argentine to Montezuma Express/River Run Gondola/Summit Express) in order to access the south side of Dercum Mountain.

Diamond Back to Mineshaft Connector (Map Ref. 9-4)

Once the proposed "*Jimmy Connector*" ties in with *Diamond Back*, the *Diamond Back* to *Mineshaft Connector* will continue on to *Mineshaft*.

c. New Trails on Dercum Mountain

Five new trails are proposed on Dercum Mountain, as defined below. These trails total approximately 68 acres.

Wild Irishman/Paymaster Area (Map Ref. 3-14, 3-15, and 3-16)

Three new intermediate trails are proposed between *Wild Irishman* and *Paymaster* to help reduce trail densities on Dercum Mountain. This is one of the last areas for potential trail infill on the north side of Dercum Mountain. These trails will be readily accessible from the proposed *Schoolmarm* bypass trail.

Schoolmarm/Ballhooter (Map Ref. 5-17 and 5-18)

Two new trail segments, and trail widening, are proposed to separate A-51 Terrain Park egress traffic from *Schoolmarm* and *Ballhooter* traffic. The more advanced skiers and riders egress from the terrain park and continue on along *Schoolmarm* and *Ballhooter*, interfacing with novice and intermediate guests. The new trail segments will allow for separation of the two user groups and therefore reduce skier densities and skier circulation conflicts.

d. New Glades on Dercum Mountain

Two new gladed areas are proposed on Dercum Mountain. As described below, one of these areas will be groomable, while the other will not.

Spring Dipper Glades (Map Ref. G-11)

A new groomable, gladed trail is proposed immediately to the skier's right side of *Spring Dipper* down to the proposed *Jackface/Burro Alley Bypass* (Trail 1-18). This new advanced-intermediate gladed area will total approximately 18.3 acres, while the skiable/groomable terrain will total approximately 7.5 acres.

The Windows Glades

The northern portion of the terrain in The Windows is proposed to be thinned to allow for more of this area to be used by advanced skiers and riders. Currently this area has timber that is too thick to ski and ride along a consistent fall line. This area will not be groomable. The total acreage of this area to be thinned is approximately 62 acres.

e. Trail Revegetation on Dercum Mountain

Three small portions of existing trails are proposed to be closed and revegetated due to their obsolescence. These trails are identified on Figure 5.3, and include:

- between *Schoolmarm* and *Paymaster*
- between *Schoolmarm* and *Silver Spoon*
- between *Silver Spoon* and *Paymaster*

The total area of trail revegetation is approximately 1.3 acres.

f. Miscellaneous Trail Connections on Dercum Mountain

The following trail connections are intended to improve overall skier circulation on Dercum Mountain:

- *Flying Dutchman/Spring Dipper* (Map Ref. 1-19)
- *Santa Fe/Swandyke* (Map Ref. 1-20)
- *Sante Fe* to River Run Gondola mid-terminal (Map Ref. 1-22 and 1-23)
- *Frenchman Bypass* (Map Ref. 3-13)

g. Trail Improvements on Dercum Mountain

As described earlier, skier flow is a major issue on *Schoolmarm* due to all skill classes mixing and moving at differing speeds. This is compounded by the fact that there are three flat areas which cause lower skilled skiers to slow down so much that they often resort to walking or skating.

Grading is proposed on select trails on the north and south sides of Dercum Mountain. This is designed to improve skier/rider circulation; eliminate steep, abrupt pitches; improve access to trails; and to aid in early season snowmaking operations. Grading on Dercum Mountain will total approximately 55 acres. Grading on existing and proposed trails includes:

- *Schoolmarm Bypass* (this will achieve a consistent gradient of 19 percent and a maximum grade of 23 percent)
- *Upper* and *Lower Schoolmarm*
- *Hoodoo*
- *Ballhooter*
- *Bobtail*
- *River Run* (near the mid-terminal of the upgraded River Run gondola)
- *Whipsaw*
- *Ina's Way*

- Bottom of *River Run*
- *Mineshaft*
- *Mozart*
- New "*Jimmy Connector*"
- Mid- and lower portions of *Jackface/Burro Alley Bypass*

In addition to grading, miscellaneous trail widening is proposed on select trails across Dercum Mountain, totaling approximately 44 acres. These trail widening projects are proposed to improve safety by opening up trail intersections, widening narrow trails and improving visibility by eliminating blind corners. All grading and trail widening is depicted on Figure 5.3.

h. New Teaching Terrain on Dercum Mountain

Under the 2009 MDP, Keystone's teaching terrain will be reconfigured to better service guests' needs. Keystone's teaching terrain will be composed of three distinct areas – the Mountain House base area, the River Run gondola mid-terminal, and the summit of Dercum Mountain. In all, these teaching areas will be served by three aerial lifts and seven surface conveyors.

Mountain House

At the Mountain House base area, the Discovery double chairlift, and four adjacent surface conveyors, will remain in their current configurations. This area provides approximately 8.9 acres of first-time teaching/learning terrain.

Ski School Learning Center at the River Run Gondola Mid-Station

A small (0.5 acre), self contained ski school center is proposed at the mid-station of the River Run gondola. This area, adjacent to the River Run trail, is currently unused by skiers and riders. This facility will be located immediately west of the mid-terminal, and will be serviced by two surface lifts, a yurt, and restrooms. When compared to the River Run base area, the mid-terminal is a superior location for a ski school center for many reasons:

- Separation from heavy skier and rider flows
- Space constraints at River Run

- The existence of overly steep terrain immediately out of the River Run base area
- The distance from the skier service buildings at the base area to the existing Sunkid beginner lift
- The ease of direct access to this facility via the new River Run gondola

The Sunkid surface conveyor, currently located at the River Run base area, will be relocated to the Learning Center at the new River Run gondola mid-terminal. (This relocated lift will be complemented by an additional surface conveyor.)

Dercum Mountain Summit

The existing Ranger fixed-grip triple chairlift, and the existing Kokomo surface conveyor, will remain in their current configurations at the summit of Dercum Mountain. These two lifts will be complimented by the installation of an additional surface conveyor and a fixed-grip triple chairlift on *Schoolmarm*. As discussed under "Lift Network," the new fixed-grip triple chairlift will extend from the Summit House on the top of Dercum Mountain, approximately 1,650 feet down *Schoolmarm*.

In addition, a teaching carpet conveyor is proposed immediately adjacent (northwest) of the Ranger chairlift at the summit of Dercum Mountain. This conveyor will be appropriately sloped at 12 percent and will service 1.2 acres of beginner terrain. Both of these lifts will continue to be supported by guest services that are currently provided at the summit of Dercum Mountain (currently in the Summit House, but relocated to a more logical area in the future).

In total, teaching terrain at the summit of Dercum Mountain will be focused on *Scout*, *Endeavor* and *Schoolmarm*, totaling 23 acres.

2. North Peak

a. New Connector Trails on North Peak

The two connector trails proposed for North Peak will total approximately 1.9 acres.

Powder Cap/Bullet Connector Trail (Map Ref. 11-10)

An approximate 700-foot connector is proposed between *Powder Cap* and *Bullet*. This connector gives the skier/rider an option to continue along the full length of *Powder Cap* or ride to *Bullet*, which essentially shortens the amount of time spent on *Mozart Flats*.

Geronimo/Cat Dancer Bypass (Map Ref. 11-11)

An approximately 330-foot long connector trail is proposed between *Geronimo* and *Cat Dancer*. With this connection, *Cat Dancer* will be opened earlier in the season, as the section of trail below this proposed connection holds natural snow very well as compared to the upper section.

b. Trail Improvements on North Peak

Strategic trail widening on select trails across North Peak will total approximately 13.4 acres.

3. The Outback

a. New Outback Express Terrain

Terrain served directly by the Outback Express will be expanded by 25.6 acres, composed of two new gladed trails on the north side of the Outback, east of *Timberwolf* (Map Ref. 13-13 and 13-14). This area is currently skied, but the trees are very tight. Glading of these trails will allow better skier utilization of the area.

In addition, the entry into *Timberwolf*, *Bushwacker*, and *Badger* is proposed to be thinned to improve the visibility of the entries into the trails totaling approximately 9.7 acres.

b. New Outback Surface Lift Terrain

New terrain that will become lift served in North and South Bowl due to installation of the Outback surface lift will total approximately 331 acres. This terrain ranges in classification from advanced intermediate through expert.

North Bowl

A 62-acre area below the new Outback surface lift (Map Ref. NB-3) is proposed for thinning. In addition, three new above-treeline advanced trails (Map Ref. NB-4, 5 and 6) in North Bowl will become accessible from the new Outback surface lift. Skiers and riders on these trails will be funneled back on *Coyote Caper* and eventually to the Outback Express. Acreage associated with trails NB-4, 5 and 6 totals approximately 111 acres.

In addition, thinning is proposed further up into North Bowl (Map Ref. NB-3) in the area that is referred to as Conquest, The Trap and the Wolf Den. This area totals approximately 62 acres.

South Bowl

Skiers and riders are increasingly searching out glades and high Alpine terrain. Therefore, three new above-treeline trails are proposed in South Bowl (Map Ref. SB-4, 5 and 7). These range from advanced-intermediate through expert, and total approximately 106 acres. In addition, a groomable, gladed trail in the Tele Trees is proposed in South Bowl (Map Ref. SB-6). This gladed area totals approximately 52 acres.

c. Trail Improvements at the Outback

Due to increased use of *Coyote Caper* and *Anticipation Flats* associated with previously-discussed trails in North Bowl and on the north side of the Outback, each of trails will need to be widened along its entire length.

Additional widening will occur on *The Grizz*, *Badger*, *Bushwacker*, *Oh Bob!*, and *The Willows* to improve visibility, circulation and improved skier safety, for a total of approximately 22 acres.

4. Bergman/Erickson/Independence Bowls

The two chairlifts that will service terrain in the Bergman and Erickson bowls area will be complimented by several new trails (including glades) totaling approximately 297 acres.

In conjunction with the proposed Bergman Bowl detachable quad chairlift, 16 trails are proposed (Map Ref. 16-1 through 16-16). These trails offer a wide variety of terrain in both Bergman and Erickson Bowls – from above treeline to traditional, including some glades. The ability levels of these trails range from low-intermediate to expert. The Bergman Bowl lift will serve approximately 193 acres of terrain.

In conjunction with the proposed Independence fixed-grip chairlift, seven new trails are proposed (Map Ref. 17-1 through 17-7). As with the Bergman Bowl detachable quad, trails associated with this lift offer a wide variety of terrain – from above tree line to traditional, including some glades. The ability levels of these trails ranges from low-intermediate to expert. Terrain served by the Independence Bowl lift totals approximately 104 acres.

Finally, thinning is proposed in Independence Bowl, on the slope immediately west of the lower terminal of the proposed Independence fixed-grip lift, in an area that is locally referred to as "The Sickness," west of *Little Taos*. This approximately 23-acre area will accommodate advanced skiers and riders.

Installation of the Bergman and Independence chairlifts will displace KAT's current snowcat program in this area. Because the Bergman detachable quad will likely be installed prior to the Independence fixed-grip lift, Keystone will explore options for offering snowcat transportation out of the northern face of Independence Bowl until the second lift is installed. This program will likely resemble the current fee-based snowcat program offered at The Outback.

5. Hike-To and Snowcat Served Terrain

With the development of Bergman and Independence bowls, the existing KAT yurt on the northern aspect of Independence Bowl will be relocated to a private parcel on the north side of Independence Mountain. This will accommodate guests in KAT's reconfigured backcountry operations within a roughly 900-acre area (see Figure 5.5). Additional snow studies and observations are needed to determine exactly what portions of this terrain will be available to hikers and the KAT program.

E. Out-of-Bounds Terrain

With incorporation of Bergman, Erickson, and Independence bowls into Keystone's developed, lift-served terrain network, the existing backcountry access point on the eastern boundary of the SUP area will be relocated to the north (Figure 5.1). As is the current case, this access point is expected to be used on an infrequent basis.

F. Terrain Parks

Keystone will continue to maintain three terrain parks on the western portion of Dercum Mountain. Because terrain parks are constantly evolving components of ski areas, ground recontouring and sculpting will likely be necessary create/improve the features and reduce snowmaking requirements.

G. Race Areas

There are two race centers at Keystone. Neither the NASTAR Race Center, located on *Flying Dutchman*, nor the Go Devil Race Area, located on *Go Devil*, is proposed to change.

Lower River Run on Dercum Mountain and *Starfire* on North Peak have been used for training by the US Ski Team. Keystone continues to look for race training and special events to occur in these locations.

H. Upgraded Circulation & Density Discussion

The intent of many of the previously listed trail projects on Dercum Mountain is to reduce skier/rider densities in areas that are currently experiencing high densities and to improve circulation and visibility.

Specifically, development of the lift and trail network in Bergman Bowl will reduce the densities seen on the front side of Dercum Mountain. Additional low intermediate and intermediate terrain in this up mountain pod will spread out those ability level users.

The proposed *Jackface/Burro Alley*, *Beger*, and *Schoolmarm* bypasses will separate conflicting user groups (i.e., lower intermediates from more advanced skiers and riders). In particular the *Schoolmarm* bypass is an important project that will ease the congestion on *Upper Schoolmarm*, by separating the more advanced skiers and A-51 terrain park users from low intermediate guest. Other trail projects that separate low intermediates from advanced user groups are trail segments 5-17 and 5-18 that essentially separate the A-51 users from the low intermediate skiers and riders.

The proposed "*Jimmy Connector*" trail from the top of the proposed Argentine lift to *Diamond Back* and terminating at *Mozart* will be an alternate route to North Peak and will help to reduce the skier densities on *Upper Mozart*.

Adding the "in-fill" trails between *Wild Irishman* and *Paymaster* will also reduce the skier densities on the front side of Dercum Mountain. The additional 21 acres of intermediate terrain are designed to better spread out users who are looking for intermediate terrain experiences on Dercum Mountain.

In addition to being able to round trip the upper two-thirds of Dercum Mountain, the installation of the mid-station on the River Run Gondola is intended to allow skiers and riders to efficiently use the underutilized trails to the east of the Gondola alignment. Increased utilization of these trails will help reduce the density related issues on *Upper* and *Lower Schoolmarm*, *Lower River Run,* and the *Paymaster/Silverspoon* junction.

These projects, along with the proposed grading projects, will help reduce the skier densities and improve the skier circulation across Dercum Mountain.

I. Night Skiing And Riding

Keystone does not anticipate a large increase in demand for night skiing and riding in the future and therefore has no plans to significantly increase the amount of terrain that is illuminated. However, during regular operations and maintenance, lighting systems will require maintenance. Therefore, Keystone will continuously evaluate and explore the suitability and practicality of installing systems that reduce energy consumption while producing less "fugitive light."

J. Additional Winter Activities

1. Adventure Point

Greater emphasis will be placed on Adventure Point (at the summit of Dercum Mountain) in the future – the intent being that Adventure Point will become the hub of summer operations, as well as snowtubing opportunities (Figure 5.3). Keystone will continue to investigate alternative forms for winter and summer recreation that are appropriate for Adventure Point in order to compliment its more traditional skiing and riding activities. In order to provide guests with better overall service and comfort throughout the year, a new, permanent facility will be constructed to replace the existing yurt. The new facility will be approximately 2,500 square feet in area.

To accommodate existing and future demand, two to four additional tubing lanes will be added to the south of the existing lanes at Adventure Point. The additional lanes will require grading.

2. Keystone Nordic Center

No changes are proposed at the Keystone Nordic Center as a component of this MDP.

3. Ice Skating

No changes are proposed at the ice skating rink located on Lake Keystone as a component of this MDP.

K. SNOWMAKING

1. Coverage

Keystone's snowmaking coverage will increase by roughly 29 percent – from approximately 614 acres to 794 acres. See Table 5-2 for a breakdown of this acreage. Three categories of snowmaking are discussed here: 1) existing infrastructure and coverage; 2) existing infrastructure in need of replacement; and 3) proposed infrastructure and coverage. The reader is referred to Figure 5.7 for more information.

On Dercum Mountain, snowmaking infrastructure on six existing trails will need to be replaced or supplemented, including: *Jack Straw*; *Last Hoot*; *Ballhooter*; *Wild Irishman*, *Mineshaft*, and *Lower Mozart Flats*. Most of this infrastructure has been operated as recently as the 2007/08 season, but will require replacement in the near future. Combined with proposed, miscellaneous trail widening on these four trails, these areas account for approximately 72 acres of snowmaking coverage.

Two trails, *Ambush* and *Geronimo*, are in need of new air/water pipelines in order for snowmaking operations to continue on 30 acres that these trails are comprised of.

New/additional snowmaking infrastructure will be installed on six existing trails, and eleven proposed trails, totaling approximately 106 acres of new coverage. In addition, strategic widening on trails across Dercum Mountain, North Peak, and The Outback (as previously discussed in the Terrain Network section) that currently have snowmaking will amount to approximately 39 acres of new coverage.

Table 5-2:
2009 MDP Snowmaking Coverage Breakdown

	Approximate Acreage
Existing snowmaking coverage	~560 acres
Widening on trails that currently have snowmaking coverage	~39 acres
Replacement of existing infrastructure on eight trails, including miscellaneous trail widening	~102 acres
Snowmaking on new/existing trails that currently have no coverage	~106 acres
TOTAL	**807 acres**

Source: SE GROUP

New snowmaking is proposed on the following existing and proposed trails:

Table 5-3:
New Snowmaking Coverage on Dercum Mountain and North Peak

EXISTING TRAILS
Sante Fe
Swandyke
Bobtail
Schoolmaster
Go Devil
Scout/Ranger
PROPOSED TRAILS
Jackface/Burro Alley Bypass (Map Ref. 1-18)
Ski Tip Connector Trail (Map Ref. 1-21)
Sante Fe to River Run Gondola Mid-Terminal Connector Trail (Map Ref. 1-23)
Silver Spoon/Paymaster Connector Trail (Map Ref. 3-7)
Schoolmarm Bypass (Map Ref. 3-11 and 3-12)
New Trail (Map Ref. 3-14)
New Trail (Map Ref. 3-15)
New Trail (Map Ref. 3-16)
"Jimmy Connector" Trail (Map Ref. 4-9)
Diamond Back to Mineshaft Connector Trail (Map Ref. 9-4)

Source: SE GROUP

2. Snowmaking Water Storage and Supply

Over the years, Keystone has investigated numerous options for securing adequate instantaneous water supply for its snowmaking system. These include on-mountain storage reservoirs and constructing water pipelines from nearby water sources. Two potential options are:

1. Continuing to use water from the Roberts Tunnel but conveying water via a newly constructed pipeline from the Montezuma Vent Shaft (approximately 4 miles east of the base area) rather than using the Snake River to convey the water. The pipeline would connect to the existing snowmaking system tie-in located in the base area.

2. Using the Reynolds Reservoir (located west of the ski area at Keystone Ranch Golf Course Lake) to store snowmaking water, which would be conveyed by one of two potential pipeline alignments. Both alignments would follow along the Aqueduct Trail, but then one option would be up the Gulch Road, to CB 2 at the bottom of the Ruby Lift to tie into the existing snowmaking infrastructure or down the Gulch Road, along Soda Ridge Road and Keystone Road, eventually tying into the snowmaking intake at Mountain House. Reynolds Reservoir is

on privately owned land but portions of a newly constructed pipeline would be on National Forest System Lands.

All options will be considered in the future as Keystone continues to address its instantaneous water supply needs.

L. Upgraded Guest Services Space and Food Service Seating

1. Guest Services

With implementation of the MDP, there will be three base area staging locations – or portals – at Keystone: River Run, Mountain House, and Ski Tip. In addition to providing staging facilities, River Run and Mountain House will also continue to offer commercial guest services that are utilized throughout the day including food services, restrooms, and retail. The Ski Tip portal will provide staging facilities only, for the proposed day skier parking lot as well as for the adjacent real estate development.

Additional services will be provided on-mountain in four locations: Summit House, La Bonte's Cabin, the Outpost Lodge and the proposed Outback deck.[23]

A complete inventory of proposed guest services is located in Tables 10-13 and 15 of Appendix A.

Sufficient guest service space should be provided to accommodate the upgraded resort CCC of 16,120 guests per day. The distribution of the CCC is utilized to determine guest service capacities and spatial requirements for skier services at base area portals and on-mountain facilities. The CCC should be distributed between each guest service facility location according to the number of guests that would be utilizing the lifts and terrain associated with each facility.

Table 17 in Appendix A illustrates the distribution of Keystone's upgraded CCC amongst the base area and on-mountain facilities. The existing distribution was re-balanced between the facilities based upon projected base area and on-mountain facility use at the resort.

In addition to distributing the CCC amongst the base area and on-mountain facilities, guest service capacity needs and the resulting space sizing recommendations are determined through a process of reviewing and analyzing the current operations to determine specific guest service requirements that are unique to the resort. The unique attributes of the resort operations that were determined as part of the existing conditions analysis have been utilized to project proposed spatial needs for guest services.

Based upon a CCC of 16,120 skiers, the distribution described in Table 17 in Appendix A, and the unique operational factors determined as part of the existing conditions analysis, Table 5-4 compares the upgraded space use allocations of the visitor service functions to industry standards for a resort of similar market orientation and regional context as Keystone. Square footage figures contained in this table are calculated to illustrate how the ski area compares to industry averages, and should not be considered absolute requirements.

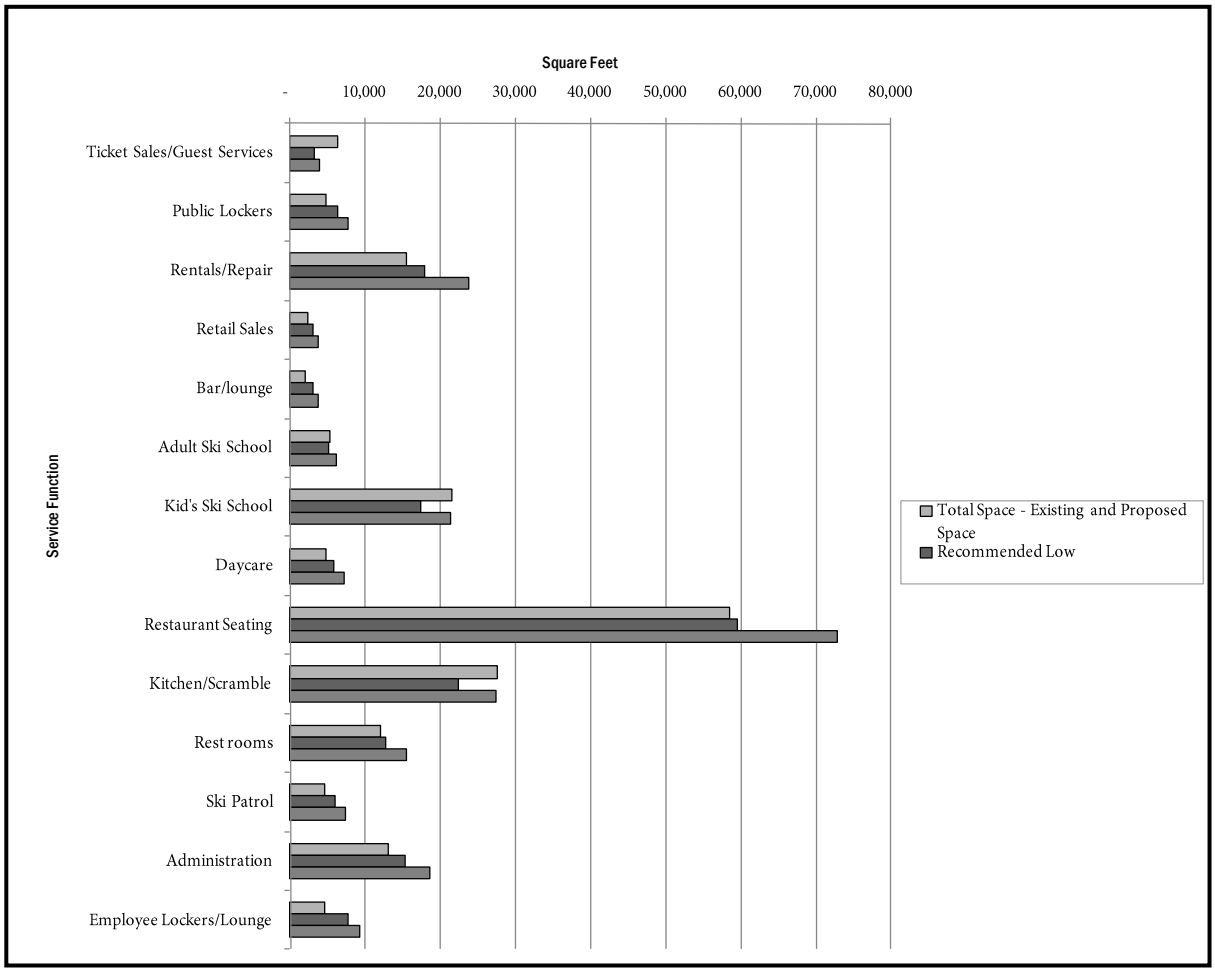
[23] Facility conditions are addressed below in the "On-Mountain Facilities" discussion.

Table 5-4:
Industry Average Space Use– Upgrading Plan: Resort Total

Service Function	Existing (retained)	Proposed	Total Space	Recommended Range	
				Low	High
Ticket Sales/Guest Services	1,044	5,349	6,393	3,160	3,860
Public Lockers	365	4,355	4,720	6,310	7,710
Rentals/Repair	900	14,500	15,400	17,880	23,830
Retail Sales	858	1,500	2,358	3,040	3,730
Bar/lounge	1,000	970	1,970	2,970	3,640
Adult Ski School	775	4,500	5,275	5,080	6,200
Kid's Ski School	-	21,499	21,499	17,410	21,280
Daycare	4,800	-	4,800	5,800	7,090
Restaurant Seating	23,386	35,174	58,560	59,580	72,810
Kitchen/Scramble	13,904	13,636	27,540	22,330	27,310
Rest rooms	3,323	8,648	11,971	12,670	15,480
Ski Patrol	1,200	3,360	4,560	5,950	7,290
Administration	7,460	5,555	13,015	15,240	18,610
Employee Lockers/Lounge	2,954	1,637	4,591	7,610	9,310
TOTAL SQUARE FEET	**61,969**	**120,683**	**182,652**	**185,030**	**228,150**

Source: SE GROUP

Chart 5-2:
Total Space Use And Recommendations – Upgrading Plan



As shown in the above table and chart, from a resort-wide perspective Keystone's guest service space would fall just below the recommended range. Notable deficits occur in administration and employee space. Future plans for providing between 6,000 and 10,000 square feet of administration space (e.g., Human Resources, Employee Center, and Marketing) at an offsite location would alleviate this deficit.

Recommendations for Bar/Lounge and Retail space have been decreased from the existing conditions, since proposed future redevelopment of the base area facilities at both River Run and Mountain House will include the addition of several third party vendors who may supply these services for guests. There is a continued deficit in rental shop space which will be alleviated by third party vendors.

Restaurant seating and restroom space will be increased at the River Run and Mountain House base areas, as well as on-mountain at the Summit House, Outpost, and the new Outback Deck. This growth in restaurant seating and restroom space will accommodate much the existing deficit and the proposed increase in CCC. Detailed information on proposed increases is provided in the following pages.

The tables do not indicate whether this balance of space is typical at each base area and on-mountain facility location. Further detail of each individual guest service location is required to illustrate specific locations and amount of additional space recommended throughout the resort, in order to optimize opportunities for improvements to the guest experience. The following tables and text address the proposed upgraded space use at each guest service facility.

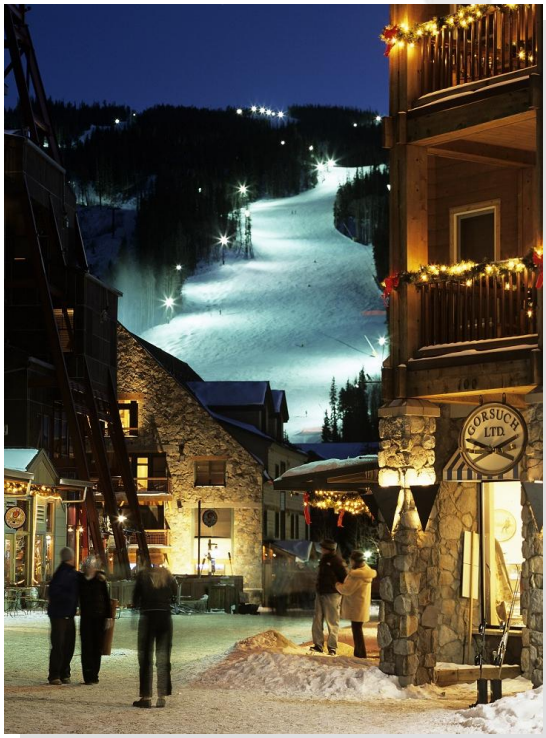
The space recommendations in the following tables are directly related to the distribution of the resort's capacity to the various guest service facilities located in the base areas and on-mountain, as illustrated in Table 17 found in Appendix A. This distribution responds to the ideal movement of guests onto and around the mountain throughout the day. As such, it is important to provide adequately sized facilities at each location to respond to this guest circulation.

a. Base Area Portals

The proposed portal staging capacity is depicted in Figure 5.2.

Redeveloped River Run Portal

The River Run base area will continue to provide staging services for guests who park in the adjacent day parking lots or arrive via the local shuttle/bus service. River Run will also provide services for overnight guests staying in adjacent accommodations who will either walk to the facilities from their units or arrive at the base area via the local shuttle/bus service.



The River Run portal will accommodate roughly 57 percent – or 9,188 – of the total guests accessing Keystone. The series of small buildings located near the Snake River which currently provides staging services have been reconfigured as part of the adjacent gondola replacement project. In the near term, a temporary rental shop (a roughly 5,000 square foot "Sprung" structure) will be utilized in this location.

Additional services will continue to be provided in the commercial level of the remaining existing River Run Village buildings (Mountain Services Center, Tickets, Ski Check, Jackpine Lodge, Black Bear Lodge, Arapahoe Lodge, Buffalo Lodge, Silver Mill, and Dakota Lodge) as well as in future real estate development. Mountain Services Center (formerly the Green Light) is currently being remodeled to included restrooms, ticketing and guest services. Additional real estate projects located adjacent to the River Run Gondola bottom terminal will include construction of a new rental shop facility (roughly 6,000 square feet) to replace

the temporary Sprung structure. A 6,000 square feet ski school facility will be constructed in association with the real estate projects.

The proposed redevelopment of the River Run guest service facilities will increase the amount of rentals, ski school (both adult's and children's) and food service space, to better accommodate guests' using this area as a staging portal and/or a lunchtime destination.

Table 5-5:
Industry Average Space Use – Upgrading Plan: River Run

Service Function	Existing	Proposed	Total Space	Recommended Range	
				Low	High
Ticket Sales/Guest Services	1,044	-	1,044	2,070	2,530
Public Lockers	365	-	365	4,130	5,050
Rentals/Repair	900	6,000	6,900	7,720	10,290
Retail Sales	808	-	808	2,130	2,610
Bar/lounge	-	-	-	870	1,070
Adult Ski School	775	1,000	1,775	1,780	2,170
Kid's Ski School	-	6,200	6,200	6,090	7,450
Daycare	4,800	-	4,800	2,030	2,480
Restaurant Seating	15,166	4,000	19,166	17,500	21,390
Kitchen/Scramble	6,944	1,500	8,444	6,560	8,020
Rest rooms	1,123	2,000	3,123	3,720	4,550
Ski Patrol	-	-	-	1,750	2,140
Administration	6,960	-	6,960	3,050	3,720
Employee Lockers/Lounge	2,454	-	2,454	1,520	1,860
TOTAL SQUARE FEET	**41,339**	**20,700**	**62,039**	**60,920**	**75,330**

Source: SE GROUP

There would be very little bar/lounge or retail space provided by Keystone at the River Run facilities, since these services would be available from third party vendors. The small amount of bar/lounge space that will be developed by Keystone is included in the restaurant seating space in Table 5-5.

A complete inventory of proposed guest services is located in tables 10-13 and 15 of Appendix A.

Redeveloped Mountain House Portal

As part of the redevelopment of private lands at the Mountain House base area, the existing one- and two-story buildings are planned to be removed and several taller accommodation buildings will be constructed. A total of 588 units will be developed, comprised of a mix of town homes and condo units. The planning of the new Mountain House development envisions that skier services will occupy much of the ground floor space, particularly in the buildings planned for the snow front. The regrading and reconfiguration of the snow front due to this development will take into account the elevations of the staging lifts and the beginner skiing zone as well. The location of the Discovery lift

top terminal will not change, but the bottom terminal (located on private lands) may be relocated slightly in the future to account for the new grades and building locations.

The Mountain House base area will continue to provide staging services for day skiers that park in the adjacent day parking lots or arrive via the local shuttle/bus service, as well as for overnight guests staying in adjacent accommodations.

Mountain House will accommodate 30 percent – or 4,836 – of the total guests skiing at Keystone. The Mountain House area will be undergoing a complete redevelopment in the future, which will include the construction of new staging services facilities.

A complete inventory of proposed guest services is located in tables 10-13 and 15 of Appendix A.

Table 5-6:
Industry Average Space Use – Upgrading Plan: Mountain House

Service Function	Total Proposed Space	Recommended Range	
		Low	High
Ticket Sales/Guest Services	4,769	1,090	1,330
Public Lockers	3,205	2,180	2,660
Rentals/Repair	7,500	10,160	13,540
Retail Sales	1,500	910	1,120
Bar/lounge	-	520	630
Adult Ski School	3,500	3,300	4,030
Kid's Ski School	15,299	11,320	13,830
Daycare	-	3,770	4,610
Restaurant Seating	8,214	10,380	12,680
Kitchen/Scramble	4,876	3,890	4,760
Rest rooms	1,988	2,210	2,700
Ski Patrol	1,420	1,040	1,270
Administration	5,555	12,190	14,890
Employee Lockers/Lounge	1,637	6,090	7,450
TOTAL SQUARE FEET	**59,463**	**69,050**	**85,500**

Source: SE GROUP

As shown in the table above, Mountain House base area facilities are below the recommended range. This is primarily due to the lack of administration and employee space at this location, which would be offset by the future plans for providing between 6,000 and 10,000 square feet of administration space (e.g., Human Resources, Employee Center, and Marketing) off site.

New Ski Tip Portal

The Ski Tip portal will be developed with a range of services to accommodate residents, overnight guests, and day skiers. It is envisioned that approximately 230 residential units (town homes, condos, and hotel units) will be constructed on private lands.

The Ski Tip Portal base area will be located southeast of the River Run base area. This portal will provide limited staging services (tickets, lockers, rentals and restrooms) for day skiers that park in the proposed Powerline day skier lot, as well as for overnight guests staying in adjacent accommodations and other residents in the East Keystone area (Settlers Creek, Trappers Crossing, and Ski Tip Neighborhoods). The Ski Tip Portal will accommodate roughly 13 percent – or 2,096 – of the total guests skiing at Keystone. A complete inventory of proposed guest services is located in tables 10-13 and 15 of Appendix A.

Table 5-7:
Industry Average Space Use – Upgrading Plan: Ski Tip Portal

Service Function	Recommended Range	
	Low	High
Ticket Sales/Guest Services	470	580
Public Lockers	940	1,150
Rentals/Repair	750	1,000
Retail Sales	-	-
Bar/lounge	-	-
Adult Ski School	-	-
Kid's Ski School	-	-
Daycare	-	-
Restaurant Seating	-	-
Kitchen/Scramble	-	-
Rest rooms	100	150
Ski Patrol	-	-
Administration	-	-
Employee Lockers/Lounge	-	-
TOTAL SQUARE FEET	**2,260**	**2,880**

Source: SE GROUP

b. On-Mountain Facilities

New Summit House Facility

The long-term plans for the Summit House include a complete re-build of the facility. The new Summit House is scheduled to include day time food services as well as a dining room suitable for day time and evening uses, ski patrol, restrooms ski school and banquets/weddings. In addition to the Summit House facility, another building would accommodate ticket sales, food service (barbeque,

salads and sandwiches), a warming area, and restrooms for both the tubing and summer time operations.

It would be optimal to relocate the Summit House to an area between the top of the Outpost Gondola and Ruby Express. Relocating this facility will open up to the *Frenchman* entrance and will also open the entrance to *Bachelor* and *Flying Dutchman*. Higher use of these underutilized trails will also help reduce the traffic on Schoolmarm.

Table 5-8:
Industry Average Space Use – Upgrading Plan: On-Mountain – Summit House

Service Function	Recommended Range	
	Low	High
Ticket Sales/Guest Services	-	-
Public Lockers	-	-
Rentals/Repair	-	-
Retail Sales	-	-
Bar/lounge	790	970
Adult Ski School	-	-
Kid's Ski School	-	-
Daycare	-	-
Restaurant Seating	15,840	19,360
Kitchen/Scramble	5,940	7,260
Rest rooms	3,370	4,110
Ski Patrol	1,580	1,940
Administration	-	-
Employee Lockers/Lounge	-	-
TOTAL SQUARE FEET	**27,520**	**33,640**

Source: SE GROUP

La Bonte's Cabin

The expansion of food service seating at the Outpost, and the additional food service provided at the Outback Deck (both defined below) will alleviate the pressure on the La Bonte's Cabin facility during peak lunch times. Additionally, the outdoor deck will provide additional seating to accommodate lunchtime demand.

Table 5-9:
Industry Average Space Use – Upgrading Plan: On-Mountain – La Bonte's Cabin

Service Function	Existing	Recommended Range	
		Low	High
Ticket Sales/Guest Services	-	-	-
Public Lockers	-	-	-
Rentals/Repair	-	-	-
Retail Sales	-	-	-
Bar/lounge	-	110	140
Adult Ski School	-	-	-
Kid's Ski School	-	-	-
Daycare	-	-	-
Restaurant Seating	720	2,220	2,710
Kitchen/Scramble	960	830	1,020
Rest rooms	600	470	580
Ski Patrol	-	220	270
Administration	-	-	-
Employee Lockers/Lounge	-	-	-
TOTAL SQUARE FEET	**2,280**	**3,850**	**4,720**

Source: SE GROUP

As shown in the space use table, the food service facilities available are below the recommended range for this location. Seating on the outside deck counters this deficit.

Enlarged Outpost Lodge

The seating capacity of the Outpost Lodge will be increased by 300 seats, to accommodate the additional capacity of the proposed Bergman and Outback lifts and terrain. Additional seats will be provided by either a re-organization of the Alpenglow Stube facility or by enclosing the outside deck seating area. The reader is referred to Figure 5.5.

Table 5-10:
Industry Average Space Use – Upgrading Plan: On-Mountain – The Outpost Lodge

Service Function	Existing	Proposed	Total Space	Recommended Range	
				Low	High
Ticket Sales/Guest Services	-	-	-	-	-
Public Lockers	-	-	-	-	-
Rentals/Repair	-	-	-	-	-
Retail Sales	50	-	50	-	-
Bar/lounge	1,000	-	1,000	680	830
Adult Ski School	-	-	-	-	-
Kid's Ski School	-	-	-	-	-
Daycare	-	-	-	-	-
Restaurant Seating	7,500	3,600	11,100	13,640	16,670
Kitchen/Scramble	6,000	-	6,000	5,110	6,250
Rest rooms	1,600	-	1,600	2,900	3,540
Ski Patrol	1,200	-	1,200	1,360	1,670
Administration	500	-	500	-	-
Employee Lockers/Lounge	500	-	500	-	-
TOTAL SQUARE FEET	**18,350**	**3,600**	**21,950**	**23,690**	**28,960**

Source: SE GROUP

As shown in the space use table, the food service facilities are below the recommended range. This deficit would be offset by the use of the outdoor deck seating area.

New Outback Deck

The Outback Deck (depicted on Figure 5.6) will be a new food service facility similar to La Bonte's Cabin, located adjacent to the lower terminal of the Outback Express. This roughly 400-square foot (20'x20') facility will include a public BBQ, "brown bag" area, and permanent restrooms.

Table 5-11:
Industry Average Space Use – Upgrading Plan: On-Mountain – Outback Deck

Service Function	Proposed	Recommended Range	
		Low	High
Ticket Sales/Guest Services	-	-	-
Public Lockers	-	-	-
Rentals/Repair	-	-	-
Retail Sales	-	-	-
Bar/lounge	-	70	80
Adult Ski School	-	-	-
Kid's Ski School	-	-	-
Daycare	-	-	-
Restaurant Seating	-	1,360	1,660
Kitchen/Scramble	-	510	620
Rest rooms	400	290	350
Ski Patrol	-	140	170
Administration	-	-	-
Employee Lockers/Lounge	-	-	-
TOTAL SQUARE FEET	**400**	**2,370**	**2,880**

Source: SE GROUP

The food service offered at the Outback Deck location will be outside. As such, the spatial recommendations shown in the table above will be accommodated primarily by the outdoor space.

2. Food Service Seating

Food service seating at Keystone will continue to be provided at the following locations:

- River Run Base Area – Jackpine Lodge, Black Bear Lodge, Arapahoe Lodge, and Silver Mill
- Mountain House Base Area – as part of the base area redevelopment
- On-mountain – Summit House, La Bonte's, Outpost, Outback Deck

A key factor in evaluating restaurant capacity is the turnover rate of the seats. A turnover rate of two to five times is the standard range utilized in determining restaurant capacity. Sit-down dining at ski areas typically results in a turnover rate of between two and three, while "fast food" cafeteria style dining is characterized by a higher turnover rate. Furthermore, weather has an influence on turnover rates at ski areas, as on snowy days guests spend more time indoors than on sunny days. Due to the mix of restaurant types and the typically good weather, turnover rates of between 1.0 and 4.0 were used.

The following table summarizes the seating requirements at Keystone, based on a logical distribution of the CCC to each service building/location.

Table 5-12:
Recommended Restaurant Seats

	Base Areas		On-Mountain Facilities				RESORT TOTAL
	River Run	Mountain House	Summit House	La Bonte's	Outpost	Outback Deck	
Lunchtime Capacity (CCC+5% non-skiing guests)	4,861	2,883	4,401	616	3,788	378	16,926
Average Seat Turnover (indoor)	2.9	2.8	3.5	4	3.5	3	-
Existing Indoor Seats (retained)	438	802	-	50	449	-	1,739
Proposed Indoor Seats	350	650	700	-	300	-	2,000
Total Indoor Seats	788	1,452	700	50	749	-	3,739
Average Seat Turnover (outdoor)	2	1	1	4	1	3	-
Existing Outdoor Seats (retained)	335	304	162	150	350	-	1,301
Proposed Outdoor Seats	-	250	-	-	-	50	300
Total Outdoor Seats	335	554	162	150	350	50	1,601
Required Seats	1,676	1,047	1,247	154	1,082	126	5,333
Difference (indoor seats - required)	-888	405	-547	-104	-333	-126	-1,594
Proposed seating capacity (indoor)	2,285	3,996	2,470	200	2,622	-	11,573
Proposed seating capacity (indoor and outdoor)	2,955	4,550	2,632	800	2,972	150	14,059

Notes:
River Run EXISTING = Kickapoo Tavern-133, Spoon-30, Inxpot-40, Paisanos-110, Starbucks-20, Pizza on the Run-25, Parrot's Eyes-80, and Jay's Patio Café-20
Turnover rates taken from 11/07 Ecosign MP
River Run turnover based on weighted average of seven restaurants (based on turnover rates from 11/07 MP document)
Outpost - There are 96 fine dining seats in the Alpenglow Stube, and 100 'on-snow' outdoor seats (in addition to deck)
Mountain House EXISTING = Last Lift-106, Silverthorne Room-116, Dillon Room-136, Frisco Room-136, Ernie's Day Room-88, Loft-72, Bite Me-148, Outdoor-304
Summit House PROPOSED = 500 seats (250 for banquet) and 200 seats for ski school
Mountain House PROPOSED = 650 indoor seats (assume 12sf per seat for 8,214sf) and 250 outdoor (assume 12sf per seat for 3,000sf)
La Bonte's outdoor seating includes 100 seats that are "on snow."
Source: SE GROUP

As shown in the table above, there is a slight deficit of indoor seating capacity overall, with specific deficits at all facilities with the exception of Mountain House. The overall deficit is somewhat offset by the supply of outdoor seating. Third party vendors, and guests returning to their accommodation units for lunch will offset the remaining deficit.

M. Inventory of Accommodations

1. Skiers from Beds

The development of the Hunki Dori parking lot, the redevelopment of the Mountain House base area, and the addition of the Ski Tip Portal will increase the amount of guests within the Skier Walking Distance (SWD). Currently there are 4,261 guests in the SWD, after the developments are complete there will be approximately 7,450 guests within the SWD.

Table 5-13:
Proposed Guests From Beds

Guests From Beds	
Within Skier Walking Distance (SWD)	
River Run Portal	3,160
Mountain House Portal	3,290
Ski Tip Portal	1,000
Total Within SWD	**7,450**

Source: Ecosign

N. Parking Capacity

In conjunction with the Ski Tip Portal, Keystone will develop a previously planned satellite parking lot – the "Powerline Lot" – which is located on private land, along the north edge of Montezuma Road (across from the road accessing the Ski Tip portal). The Powerline Lot has a designed capacity of approximately 700 vehicles and will specifically serve as a parking area for Keystone's guests who plan to access the mountain through the Ski Tip portal, but will accommodate those wishing to access River Run, as well. Approximately 1,680 guests could be parking at the Powerline Lot on a peak day when the lot is parked at full capacity. A shuttle will be operated throughout the day to provide access between the Powerline Lot and the Ski Tip/River Run portals.

While no day skier parking will be offered immediately proximate to the Ski Tip lift, a skier drop-off area will be provided within the Ski Tip Portal. The drop-off area will be used by shuttles and day skier vehicles circulating between the Powerline Lot and Ski Tip Portal, and will be located a short walking distance from the lower terminal of the lift.

An increase in parking capacity will also be implemented at the Tenderfoot parking lot. Currently the Tenderfoot lot can park 970 vehicles. After expanding the lot it will be able to accommodate 1,300 vehicles.

The East and West Mountain House parking lots will be limited in size by the redevelopment plan. The currently planning for these lots takes the 1,250 existing parking spaces and reduces them to 300 spaces. These parking lots will remain pay lots.

Three of the four River Run parking lots are planned to be part of different development projects in the future. The Montezuma lot (2,000 spaces) will remain and but the Hunki Dori, Gold Bug, and Brown's Cabin lots will no longer be available for skier parking.

Table 5-14 summarizes the future parking inventory and Table 5-15 shows the recommended parking.

Table 5-14:
Future Conditions Parking Inventory

Lot #/Status	Name	Parking Spaces	Average Vehicle Occupancy	Parking Capacity
RIVER RUN				
Removed	Hunki Dori	-	-	-
P2 - Free	Montezuma	2,000	2.4	4,800
Removed	Gold Bug	-	-	-
Removed	Brown's Cabin	-	-	-
Total River Run		*2,000*		*4,800*
MOUNTAIN HOUSE				
Reduced	East	150	2.8	420
Reduced	West	150	2.8	420
Total Mountain House		*300*		*840*
SKI TIP				
P9 - Free	Powerline	700	2.4	1,680
Expanded	Tenderfoot	1,300	2.4	3,120
TOTAL RESORT		**4,300**		**10,440**

Source: VRDC and EcoSign

Table 5-15:
Recommended Parking – Upgrading Plan

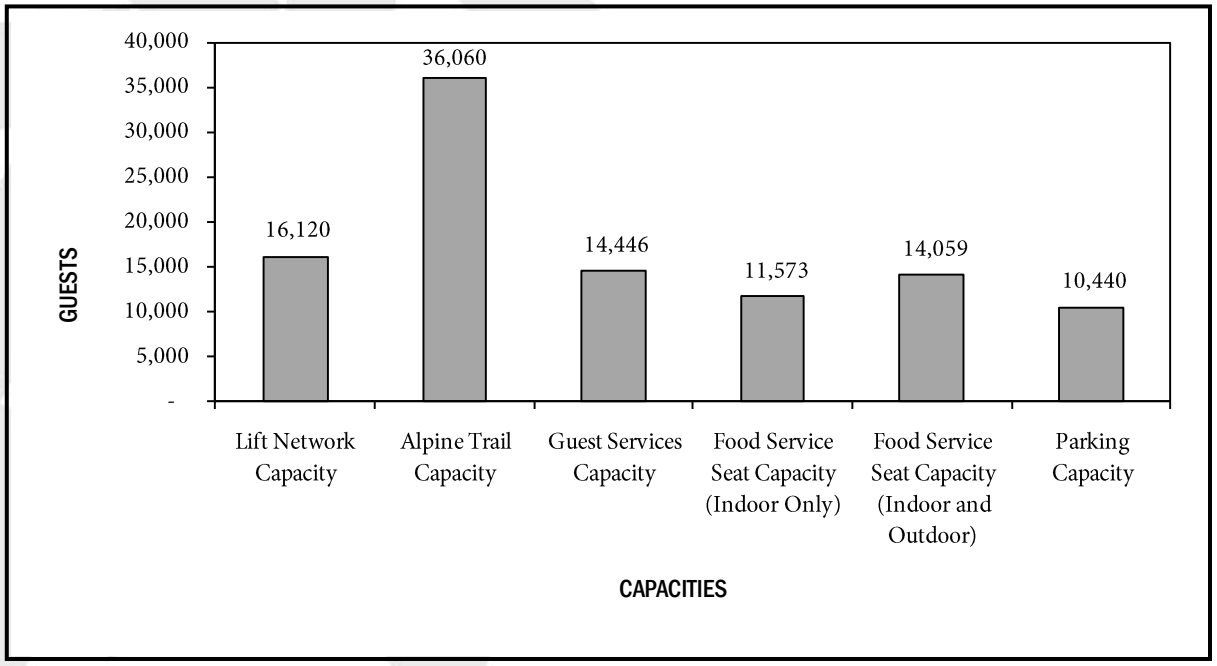
	Multiplier	All Parking
CCC + other guests		16,926
Guest walking from accommodations		7,450
# parking at portal		9,476
# of guests arriving by car	97%	9,173
# of guests arriving by charter bus	2.5%	237
Required car parking spaces	2.40	3,822
Required charter bus parking spaces	35.00	7
Equivalent car spaces (1 bus=4.5 car)	4.5	30
Required employee car parking spaces		150
Total required spaces		4,002
Existing parking spaces		4,880
Parking spaces replaced by development parcels		1,610
Parking spaces added by proposed or expanded lots		1,030
Future parking spaces		4,300
surplus/*deficit*		298

Source: SE GROUP

O. BALANCE OF FACILITIES

The overall balance of the proposed ski area is evaluated by calculating the capacities of the resort's various facilities and comparing those facilities to the resort's CCC. The above discussed capacities are shown in the following chart.

Chart 5-3:
Resort Balance – Upgrading Plan



As the above chart indicates, the upgrading plan has addressed some of the imbalances of support facilities, i.e., guest services and restaurant seating, although the capacities are still below the CCC. It is assumed that third party vendors in the River Run and Mountain House developments will alleviate the shortages in resort-operated guest services and restaurant seating.

P. Operations & Infrastructure

Proposed changes to mountain infrastructure are depicted on Figures 5.8, 5.9 and 5.10.

1. Ski Patrol/First Aid

In order to accommodate development of Independence, Bergman and Erickson bowls, a lift operations/ski patrol facility will be located at the top of the proposed Bergman detachable quad. At such time that the Summit House facility is relocated, ski patrol functions provided therein would be transferred, as well.

Emergency access along the alignment of the Outpost gondola is difficult due to vegetation growth along the gondola construction access. In the event of an evacuation scenario, the ski patrol would have problems accessing the gondola and evacuating within the required timeframe. Keystone proposes limited tree removal and spot grading along the gondola construction access. This proposal would improve the access to the gondola alignment.

2. Maintenance Facilities

a. Maintenance Shop Relocation

Vail Resorts Development Company (VRDC) has plans to relocate the existing maintenance shop that is located on private land at the Mountain House base area. The tracked vehicle maintenance portion of the shop will be relocated to the top of Dercum Mountain, between (and south of) the Outpost Gondola and Adventure Ridge (refer to Figure 5.3). Relocating the tracked vehicle maintenance shop to this area will lead to time as well as fuel savings, and will avoid the instances of groomers driving through the night skiing area.

A conceptual plan for the new tracked vehicle maintenance shop includes up to six drive-through bays, tracked vehicle maintenance areas, vehicle parking, fuel tanks, parts storage, employee lockers and a break room, administrative offices, and restrooms.

The rubber tire vehicle maintenance program will be relocated to another new shop located on a private parcel within the Keystone Valley.

Until construction of the new on-mountain tracked vehicle shop occurs, Keystone will develop a snowcat access route connecting the shop to Keystone Gulch road. Currently, snowcats are encountered on Dercum Mountain trails and Mountain House beginner slopes. This access route will accommodate inbound/outbound snowcats between the shop and The Outback.

The snowcats are escorted by snowmobiles along trails on the frontside of Dercum Mountain, to *Haywood*, and then through the busy beginner area. The proposed snowcat access route will allow snowcats to avoid the interface with skiers by accessing Keystone Gulch Road and continuing on to the North Peak and The Outback terrain. For the most part the access will be constructed out of snow and will follow the alignment of *Granny's Trail* (mountain bike trail). Some light grading in select locations will be needed along with some selective tree removal.

b. CB 2 Maintenance Shop Upgrade

The existing maintenance shop located adjacent to CB 2 will be upgraded, with increased fuel storage capacity (from 14,000 gallons to 25,000 gallons). Fire suppression water storage will need to be relocated, and an additional loading dock is needed. The reader is referred to Figure 5.7.

3. Utilities

a. Fuel Storage

No changes are proposed to existing fuel storage and Keystone will maintain the 27 existing fuel storage tanks across public and private lands. Details for the proposed additional storage mentioned

above, for the proposed maintenance shop at the top of Dercum Mountain and at CB 2, will be developed when detailed plans for these improvements are completed.

b. Power

The existing power line servicing the Outback Express will be upgraded, with a spur installed from the top of the Outback Express to supply the proposed Outback surface lift.

A new power line will be installed from the Outpost Restaurant, along proposed Trail 16-10, to the top terminals of the proposed Bergman and Independence lifts. This line will continue on proposed Trail 17-1 to the Independence lift's bottom terminal.

Finally, a power line will be constructed on lower *Sante Fe* to supply the proposed Ski Tip lift.

c. Sewer & Water

The capacity of the water storage tank that currently serves the Summit House will be increased in capacity from 50,000 gallons to 100,000 gallons. In addition, a sewer line will be installed from CB-2 to the Summit House. In conjunction with this, the sewage lagoon that currently serves the Summit House will be decommissioned.

Q. Summer Recreational Activities

In the future, the demand for, and diversity of, summer recreational opportunities is expected to increase. Keystone will continue to offer a variety of activities, including golf, mountain biking, hiking, fishing, horseback and wagon rides, tennis, boating, festivals and shows and conferences and retreats.

In conjunction with the reconfiguration of Adventure Point into the hub of Keystone's summer operations, Keystone will continue to explore ways of providing a wide, diverse range of summer activities. As guest expectations and innovations for summer-based recreation evolve, Keystone's approach for providing these opportunities will remain dynamic. In addition to traditional summer-based activities that are expected to remain the staple of Keystone's offerings (e.g., hiking, biking and sightseeing), additional "non-traditional" activities may be explored at Adventure Point, including summer snow tubing at the existing winter tubing location.

1. Mountain Biking Trails

Seven new mountain bike trails are proposed on the front side of Dercum Mountain, totaling approximately 8.4 miles. The goal of the new trails is to eliminate bike traffic from specific portions of Keystone's summer road network. Existing and proposed mountain bike trails are depicted on Figure 5.11.

- Proposed Trail # 1

This proposed beginner (Green) trail will be constructed with two segments (13,150 feet and 4,750 in length) – connecting to and from an existing section of access road. This would be constructed to be Americans with Disabilities (ADA) complaint, and would keep uphill riders off the summer road. In

summer 2008, Keystone met with representatives from the Keystone Adaptive Center and Breckenridge Outdoor Education Center (BOEC) to discuss the design and use of this trail. Trail #1 will be constructed with a Sweco machine and would wide enough for an AVT (Ranger) to navigate.

- Proposed Trail # 2

Trail #2 will provide a roughly 4,100-foot long intermediate (Blue) route off the summit of Dercum Mountain. This trail will be constructed by hand through the forest, and with a Sweco machine on ski trails.

- Proposed Trail # 3

Trail #3 is a proposed 2,000-foot long intermediate (Blue) extension of an existing advanced (Black) trail. This trail is designed to separate beginners from advanced riders. It will be constructed with hand tools.

- Proposed Trail # 4

Proposed Trail #4 will be roughly 3,200-foot long expert (Black) level and will provide a key link to keep expert riders off the road. This trail will be constructed by hand through the forest, and with a Sweco machine on ski trails.

- Proposed Trail # 5

Proposed Trail #5 will be a roughly 11,350-foot long intermediate (Blue) east-west connector trail, allowing riders that are above their ability level to reach gentler terrain. The entirety of this proposed trail will be constructed with a Sweco machine.

- Proposed Trail # 6

Proposed Trail #6 will be a roughly 1,300-foot long intermediate (Blue) continuation of east to west, providing access to *Helter*. The entire trail will be constructed with hand tools.

- Proposed Trail #7

Trail #7 is a roughly 4,850-foot long intermediate (Blue) trail proposed to take pressure off an existing intermediate trail in the same area. This trail will be constructed by hand through the forest, and with a Sweco machine on ski trails.

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Proposed Projects Overview
Figure 5.1

Facilities Improvements

1. *River Run guest service facility reconfiguration in conjunction with gondola replacement*
2. *Mountain House redevelopment*
3. *Ski Tip Portal development*
4. *Ski School Learning Center; 2 carpets, yurt with deck and pit toilets*
5. *A-51 Decks with terrain park information and safety signage*
6. *Summit House relocation with new construction*
7. *On mountain tracked vehicle maintenance shop*
8. *Permanent Facility for tubing and summer operations - Add 2-4 tubing lanes - Increase water storage tank capacity*
9. *Upgrade CB-2 Maintenance Shop adjacent to the Ruby bottom terminal*
10. *Outpost restaurant seating capacity increase and kitchen upgrades*
11. *Ski Patrol / Lift Ops Building*
12. *Outback deck with restroom facilities and public BBQ area*

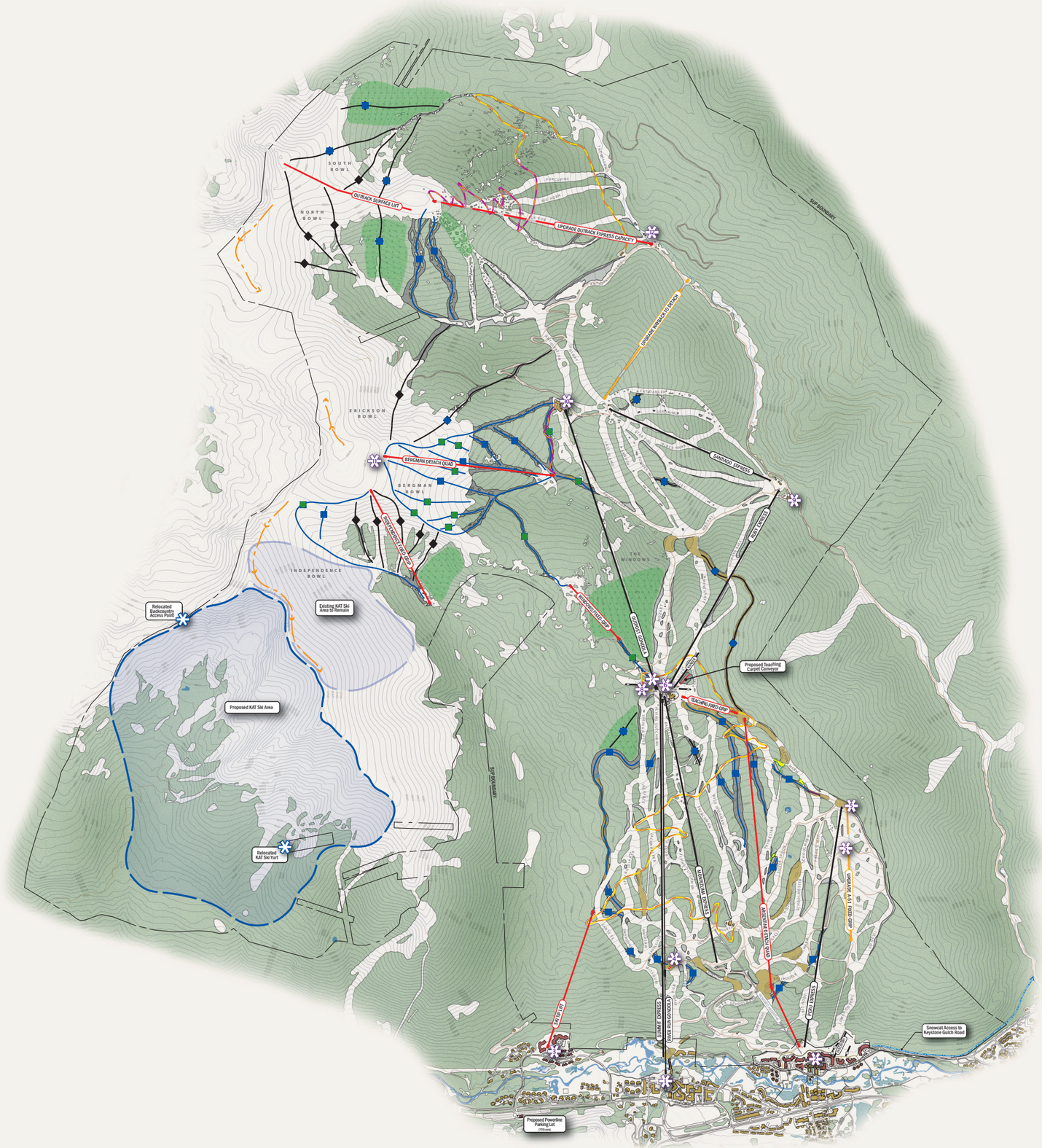
Existing KAT Ski Area
227 acres

Proposed KAT Ski Area
900 acres

Trail Grading Projects
55.7 acres

Trail Glading Projects
215 acres

- Existing Lifts
- Removed Lifts
- Proposed Lifts
- Previously Approved Lifts
- Lift Upgrade
- Hiking Routes
- Proposed Trail
- Trail Widening
- Mtn Road Improvements
- Proposed Mtn Road
- Trail Reveg



North

0 1400 2800'

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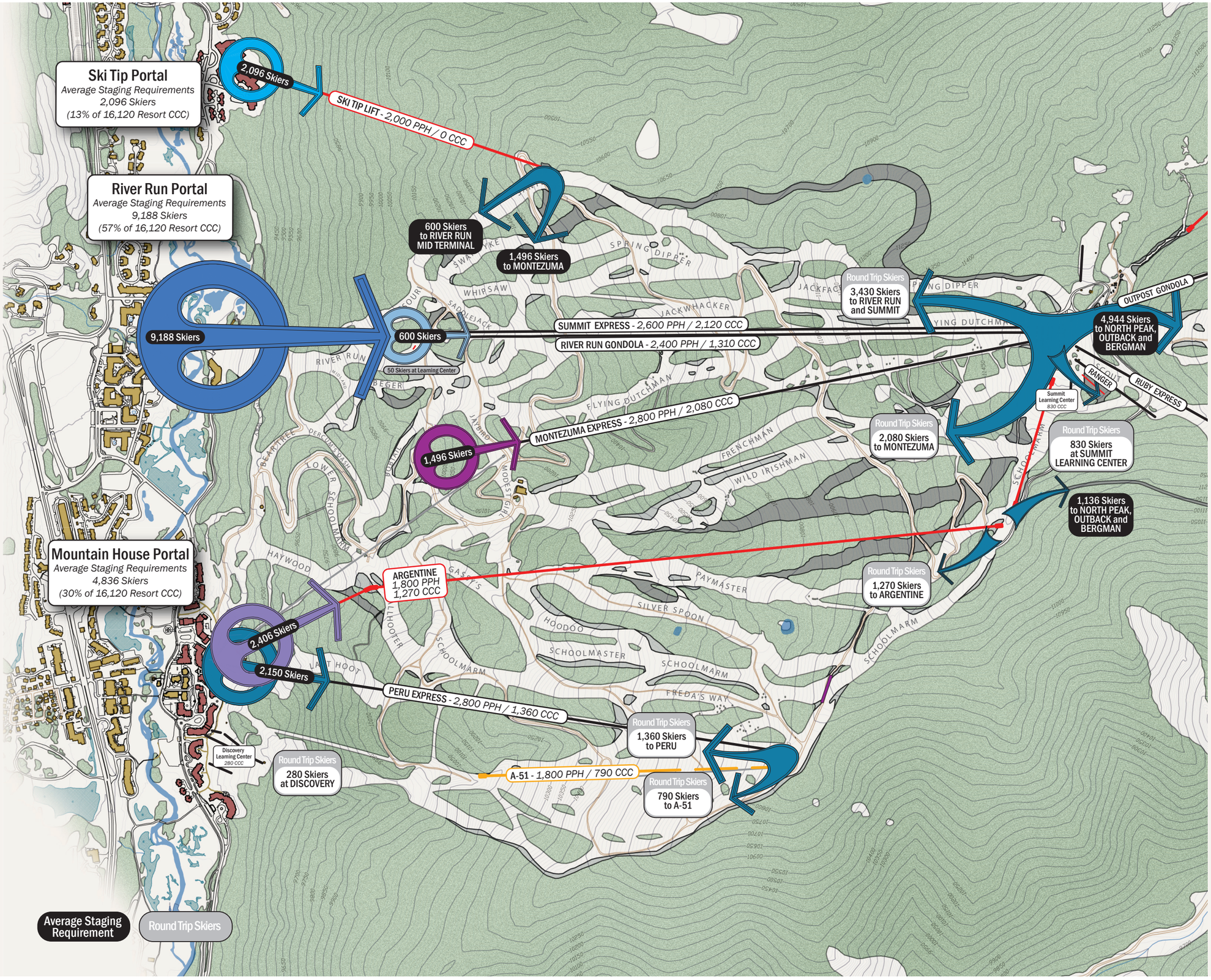

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Portal Staging Capacity
Proposed Conditions
Figure 5.2

North

0 500 1000'

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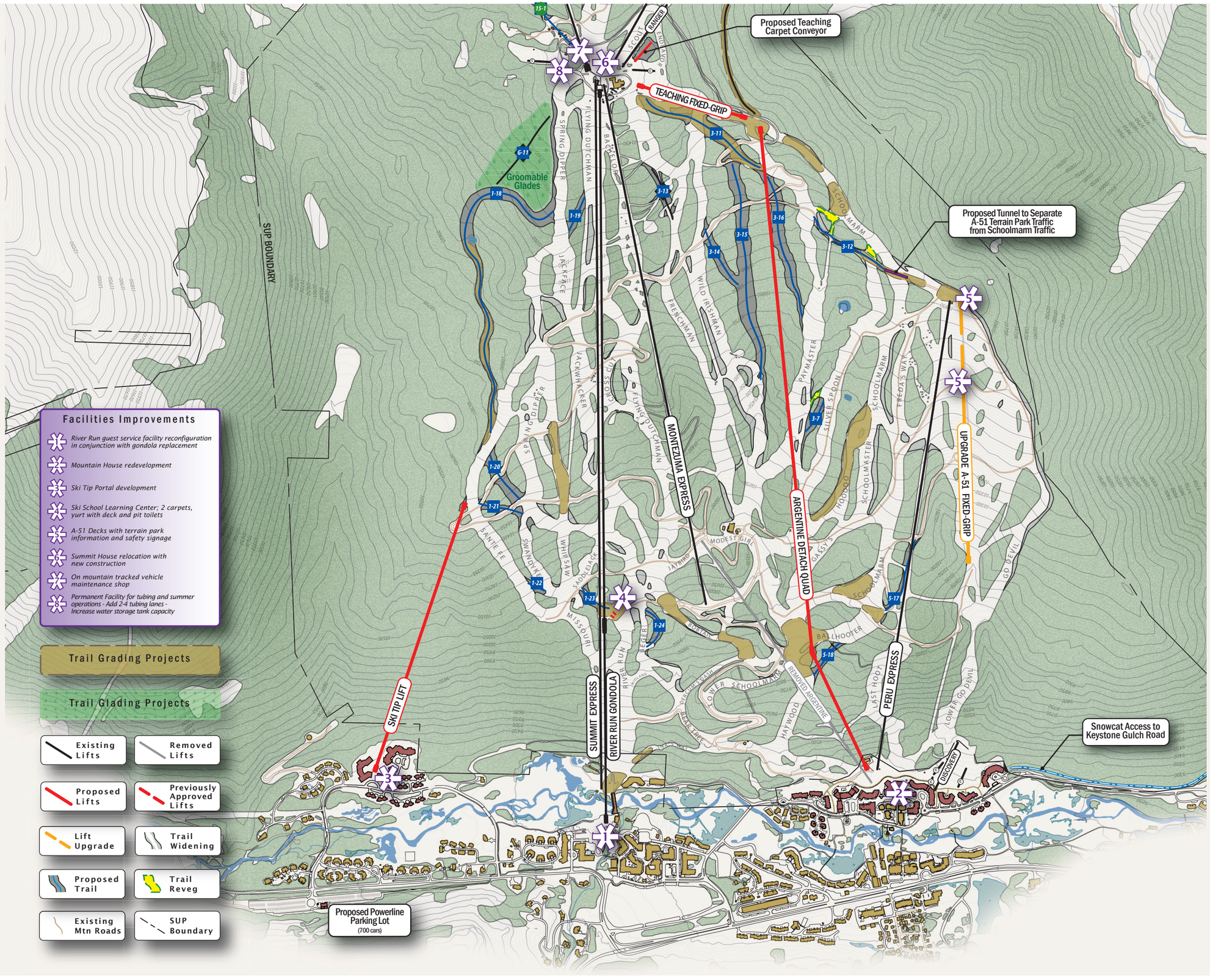

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Dercum Mountain - Frontside Proposed Projects

Figure 5.3

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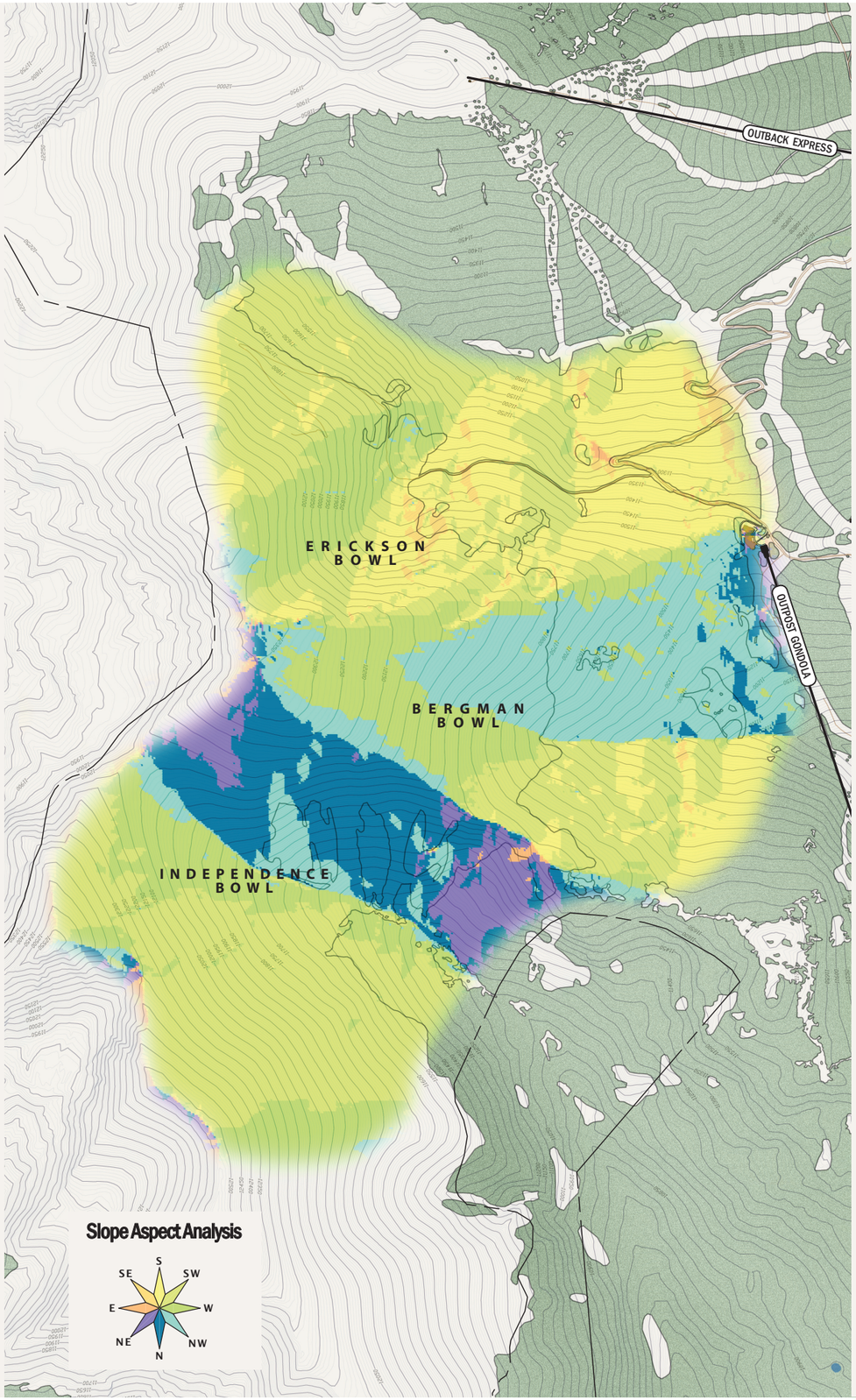

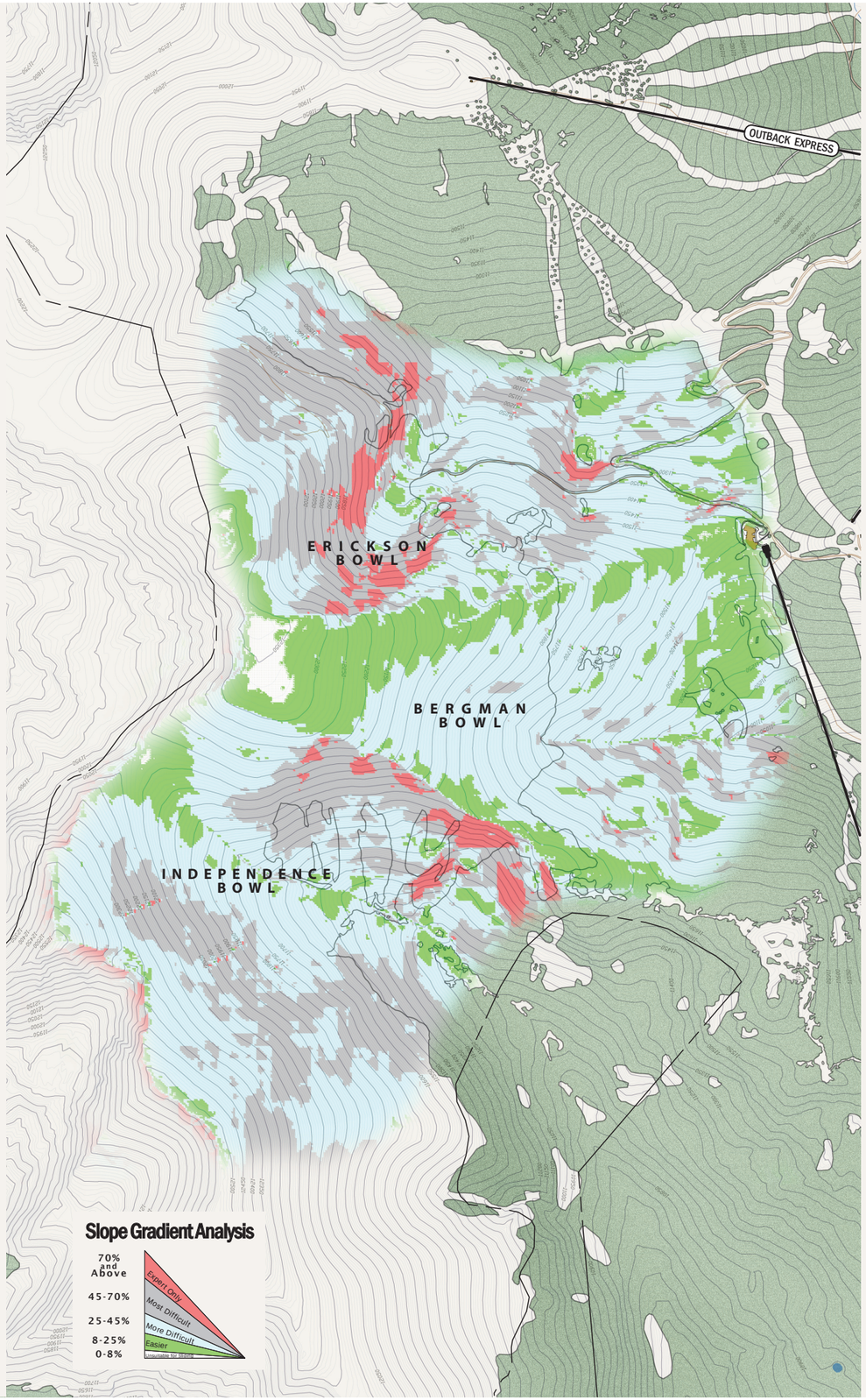

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Bergman, Independence, and Erickson Bowls Terrain Analysis

Figure 5.4

North

0 750 1500'

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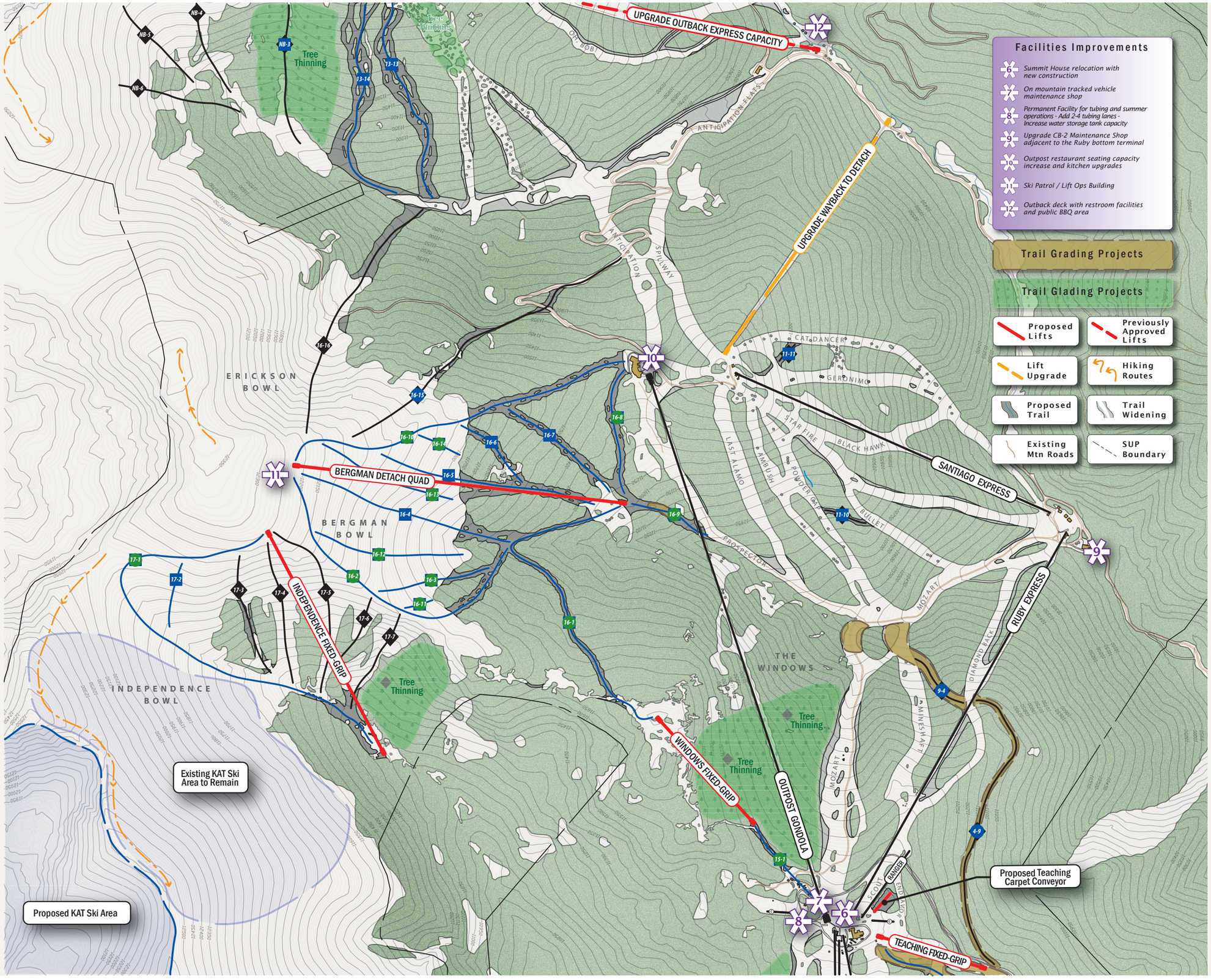

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Dercum Mountain - Southside, North Peak, and Upper Bowls Proposed Projects

Figure 5.5

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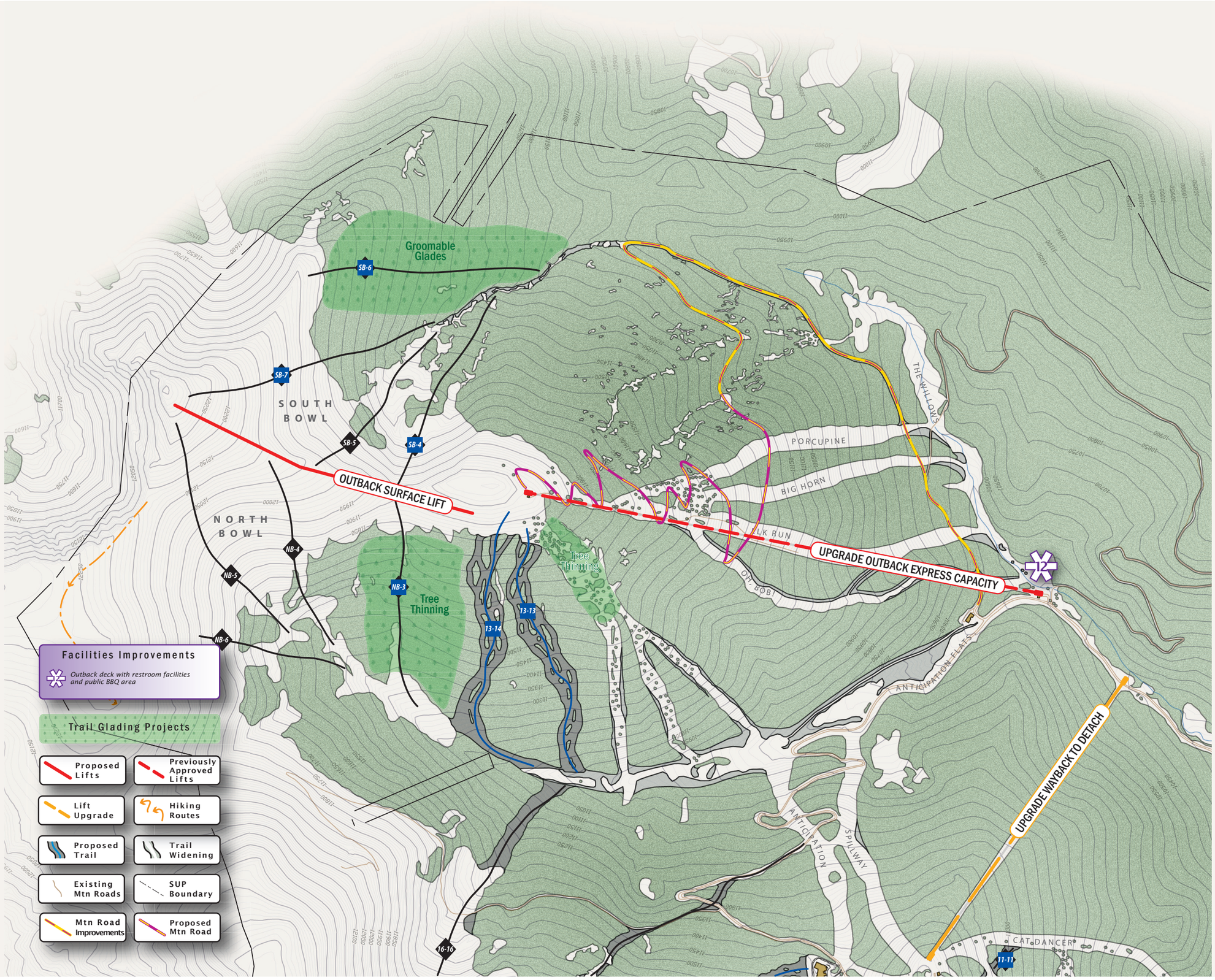
THE OUTBACK
Proposed Projects
Figure 5.6



North

0 500 1000'

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Proposed Snowmaking Coverage

Figure 5.7

Existing Snowmaking
600 Acres
After trail widening

Existing Snowmaking
Infrastructure to be Upgraded
102 *Acres after trail widening*

Proposed Snowmaking
106 Acres

North

0 1400 2800'

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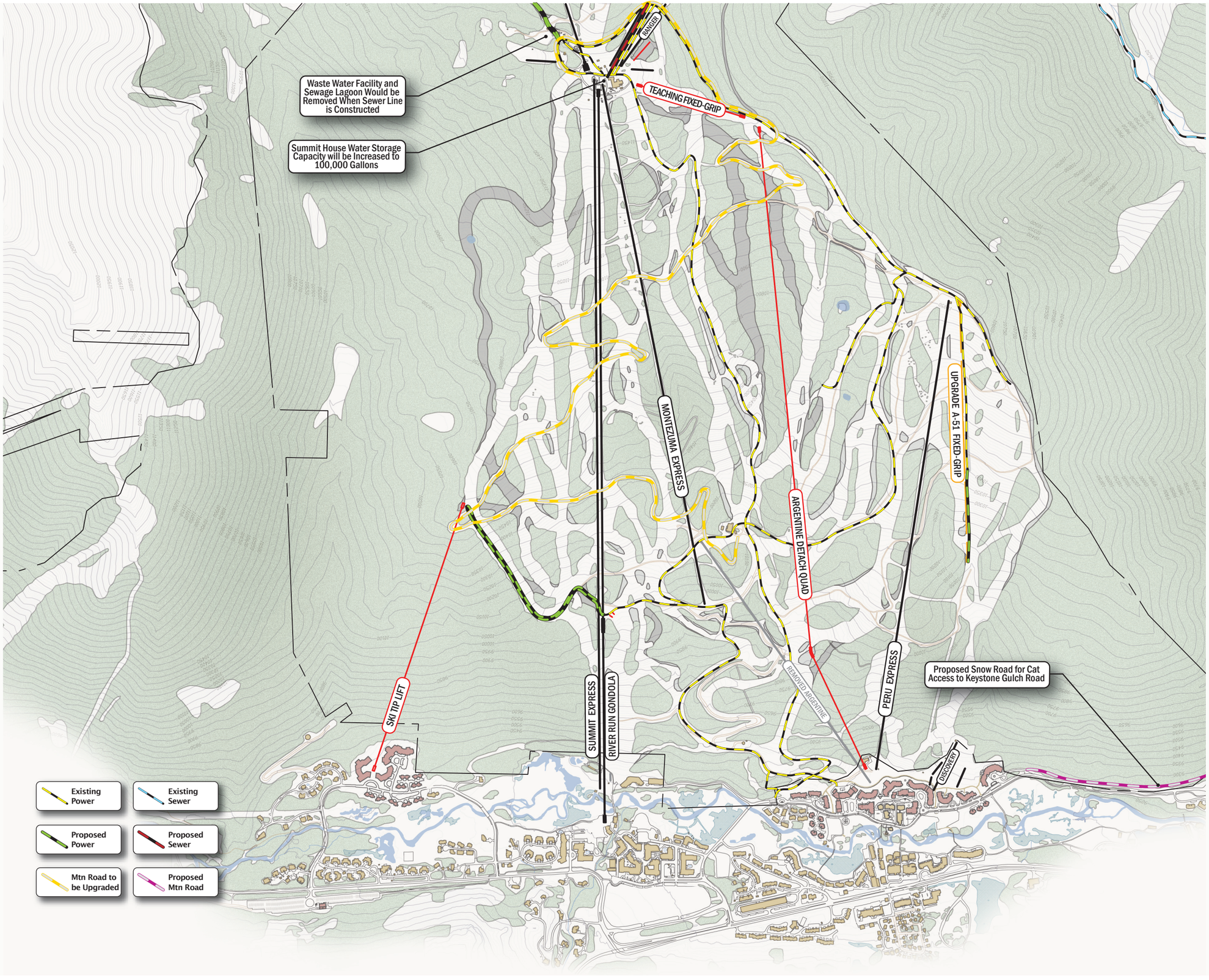
Dercum Mountain - Frontside
Proposed Infrastructure

Figure 5.8



North

0 600 1200'

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Dercum Mountain - Southside, North Peak, and Upper Bowls Proposed Infrastructure

Figure 5.9

UPGRADE OUTBACK EXPRESS CAPACITY

UPGRADE WAYBACK TO DETACH

BERGMAN DETACH QUAD

SANTIAGO EXPRESS

INDEPENDENCE FIXED-GRIP

WINDOWS FIXED-GRIP

OUTPOST GONDOLA

RUBY EXPRESS

TEACHING FIXED-GRIP

Existing Power
Existing Sewer
Proposed Power
Proposed Sewer
Mtn Road to be Upgraded
Proposed Mtn Road

North

0 600 1200'

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THE OUTBACK
Proposed Infrastructure
Figure 5.10

OUTBACK SURFACE LIFT

UPGRADE OUTBACK EXPRESS CAPACITY

UPGRADE WAYBACK TO DETACH

Existing Power

Existing Sewer

Proposed Power

Proposed Mtn Road

Mtn Road to be Upgraded

North

0 500 1000'

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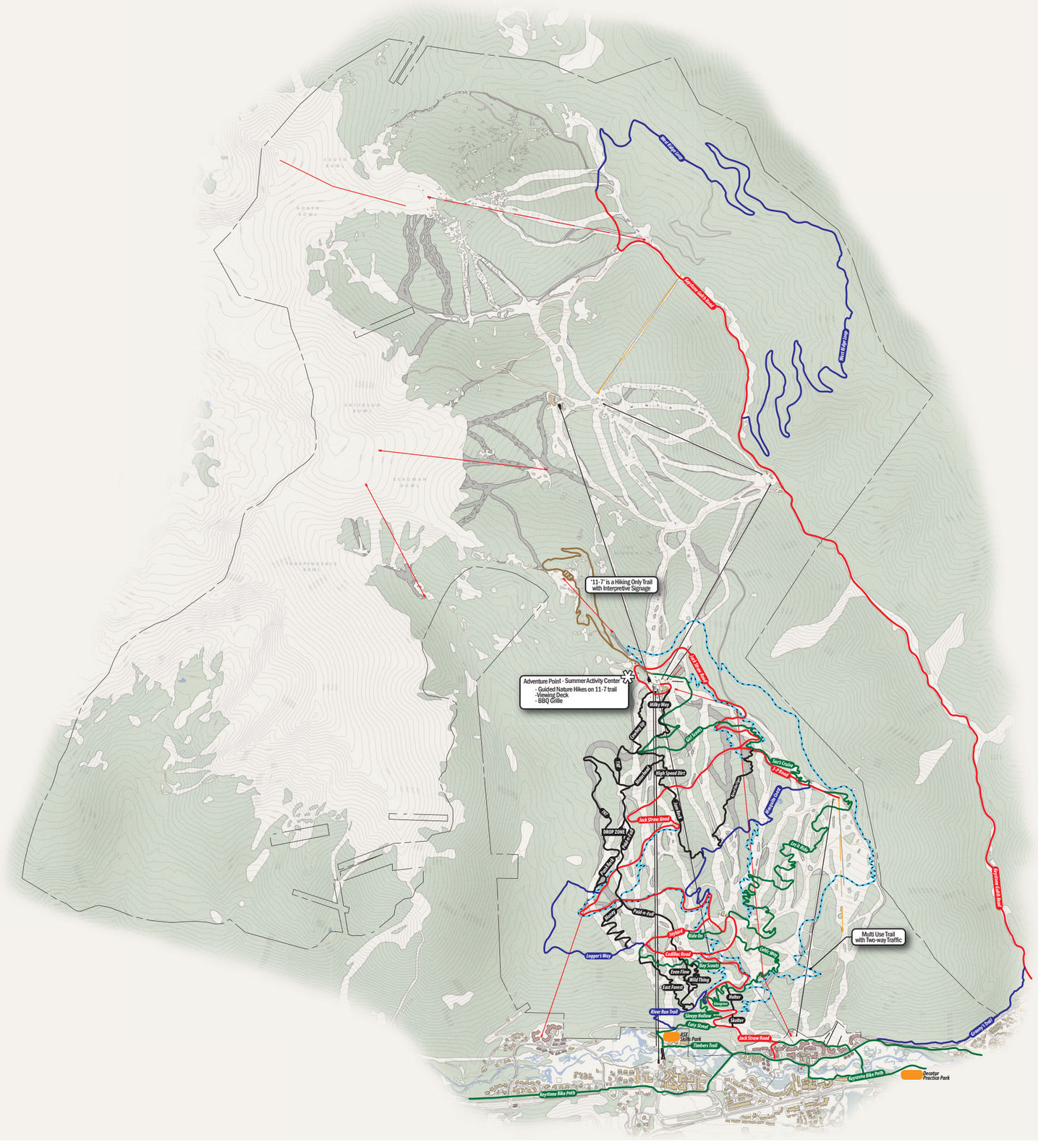
MTN BIKE TRAIL LAYOUT AND SUMMER ACTIVITIES
Figure 5.11



- MTB Trail on Service Road
- Easiest MTB Trail
- More Difficult MTB Trail
- Most Difficult MTB Trail
- Freeride Bike Terrain
- Hiking Trail
- Proposed MTB Trail

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CHAPTER 6: GLOSSARY

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 one acre to a depth of one foot.

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.

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.

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 (CCC): Comfortable Carrying Capacity 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. CCC 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. CCC 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 two 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 up to one-third of a slope's trees, which enables a tree stand to be skied or rode 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, ranging from 75 to 400 feet long, with consistent six- to 12-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.

Morning Access Capacity: The resort's capacity to carry skiers and snowboarders to other, up-mountain lifts within an acceptable time frame. By comparing the aggregate staging requirement for each access lift to the access lift's uphill access capacity, the length of the access period for each access lift can be determined. Per industry standards, a destination resort should have dedicated access lifts (with sufficient hourly capacities) that supply the resort's up-mountain lifts with guests (numbers commensurate with lift hourly capacities) within an access period ranging from 90 to 120 minutes.

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 environmental effects 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.

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.

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

Quarterpipe: A channel constructed in the snow the same as a halfpipe, but consisting of one wall instead of two. It may be shorter in length than a halfpipe 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.

Side-country: Terrain that is within the SUP boundary but is not actively managed by the resort.

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 slopeside 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 CCC.

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 ten percent.

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.

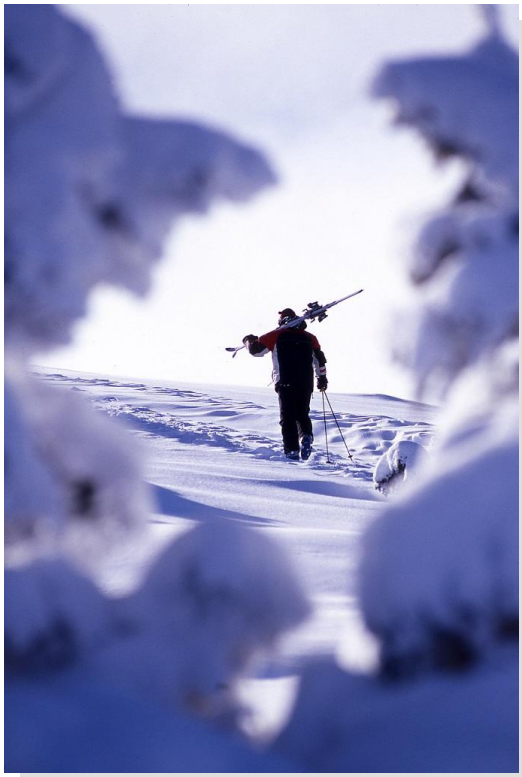
Terrain Park: An area dedicated to the development and maintenance of a collection of alternative terrain features, which may include, but is not limited to, elements like halfpipes, quarterpipes, big air hits, ollies, spines, jibbing elements, barrel bonks, table tops, etc.

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.



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2009 MASTER DEVELOPMENT PLAN

APPENDIX A: ADDITIONAL TABLES

Table 1: Lift Specifications – Existing Conditions

Map Ref.	Lift Name, Lift Type	Top Elevation (ft.)	Bottom Elevation (ft.)	Vertical Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Average Grade (%)	Actual Design Capacity (pers./hr.)	Rope Speed (fpm)	Carrier Spacing (ft.)
1a	River Run Gondola *G*	11,639	9,342	2,297	9,477	9,831	24	600	1,000	800
1b	River Run Gondola – Midload *G*	11,634	10,016	1,618	6,936	7,164	23	1,800	1,000	267
2	Summit Express *DC-4*	11,645	9,339	2,306	9,153	9,510	25	2,600	1,100	102
3	Montezuma Express *DC-4*	11,640	9,982	1,658	6,818	7,066	24	2,800	1,000	86
4	Argentine *C-2*	10,190	9,290	900	3,802	3,989	24	1,090	454	50
5	Peru Express *DC-4*	10,863	9,282	1,581	6,101	6,373	26	2,800	1,000	86
6	Discovery *C-2*	9,384	9,281	103	666	676	16	900	350	47
7	A-51 *C-2*	10,874	10,405	468	2,170	2,222	22	1,090	454	50
8	Outpost Gondola *G*	11,634	11,450	184	7,412	7,577	2	1,500	1,000	240
9	Ruby Express *DC-6*	11,640	10,054	1,586	5,673	5,940	28	3,200	1,100	124
10	Ranger *C-3*	11,630	11,444	186	1,039	1,060	18	1,800	400	40
11	Santiago Express *DC-4*	11,645	10,047	1,598	4,441	4,747	36	2,400	1,000	100
12	Wayback *C-4*	11,652	10,351	1,301	3,674	3,915	35	2,000	450	54
13	Outback Express *DC-4*	11,938	10,456	1,483	5,606	5,824	26	1,800	1,000	133
C-1	Magic Carpet I	9,285	9,281	7	89	89	8	400	120	18
C-2a	Magic Carpet II a	9,317	9,285	32	256	258	12	400	120	18
C-2b	Magic Carpet II b	9,317	9,285	32	256	258	12	400	120	18
C-3	Magic Carpet III	9,308	9,289	19	188	189	10	400	120	18
C-4	Kokomo (Carpet IV)	11,619	11,583	36	272	274	13	400	120	18
C-5	Sunkid I	9,358	9,351	7	87	88	8	400	120	18

Source: SE GROUP

Table 2: Lift Specifications – Upgrading Plan

Map Ref.	Lift Name, Lift Type	Top Elevation (ft.)	Bottom Elevation (ft.)	Vertical Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Average Grade (%)	Actual Design Capacity (pers./hr.)	Rope Speed (fpm)	Carrier Spacing (ft.)
1a	River Run Gondola *G*	11,634	9,342	2,292	9,477	9,831	24%	600	1,000	800
1b	River Run Gondola – Midload *G*	11,634	10,016	1,618	6,936	7,164	23%	1,800	1,000	267
2	Summit Express *DC-4*	11,645	9,339	2,306	9,153	9,510	25%	2,600	1,100	102
3	Montezuma Express *DC-4*	11,640	9,982	1,658	6,818	7,066	24%	2,800	1,000	86
Pro 4a	Argentine *DC-4*	11,347	9,292	2,055	8,499	8,847	24%	600	1,000	400
Pro 4b	Argentine – Midload *DC-4*	11,347	9,901	1,445	6,832	7,031	21%	1,800	1,000	133
5	Peru Express *DC-4*	10,863	9,282	1,581	6,101	6,373	26%	2,800	1,000	86
6	Discovery *C-2*	9,384	9,281	103	666	676	16%	900	350	47
7	A-51 – Realigned *C-3*	10,876	10,069	807	3,388	3,491	24%	1,800	500	50
8	Outpost Gondola *G*	11,634	11,450	184	7,412	7,577	2%	1,500	1,000	240
9	Ruby Express *DC-6*	11,640	10,054	1,586	5,673	5,940	28%	3,200	1,100	124
10	Ranger *C-3*	11,630	11,444	186	1,039	1,060	18%	1,800	400	40
11	Santiago Express *DC-4*	11,645	10,047	1,598	4,441	4,747	36%	2,400	1,000	100
12	Wayback - upgrade *to DC-4*	11,652	10,351	1,301	3,674	3,915	35%	2,400	1,000	100
13	Outback Express - upgrade capacity *DC-4*	11,938	10,456	1,483	5,606	5,824	26%	2,400	1,000	100
C-1	Magic Carpet I	9,285	9,281	7	89	89	8%	400	120	18
C-2a	Magic Carpet IIa	9,317	9,285	32	256	258	12%	400	120	18
C-2b	Magic Carpet IIb	9,317	9,285	32	256	258	12%	400	120	18
C-3	Magic Carpet III	9,308	9,289	19	188	189	10%	400	120	18
C-4	Kokomo (Carpet IV)	11,619	11,583	36	272	274	13%	400	120	18
C-5	Sunkid I - Relocated to Learning Center	10,044	10,041	3	40	40	8%	400	120	18
Pro 14	Schoolmarm *C-3*	11,604	11,349	255	1,653	1,678	15%	1,000	350	63
Pro 15	Windows *C-3*	11,810	11,508	302	1,858	1,888	16%	1,800	500	50
Pro 16	Bergman *DC-4*	12,226	11,209	1,017	4,325	4,448	24%	2,400	1,000	100
Pro 17	Independence Lift *C-3*	12,251	11,154	1,096	3,256	3,474	34%	1,800	500	50
Pro 18	Outback Surface Lift	12,323	11,929	394	3,426	3,463	12%	1,200	700	70
Pro 19	Ski Tip Lift *(G or Cab)*	10,591	9,437	1,154	3,637	3,860	32%	2,000	1,000	120
Pro C-6	Learning Center Carpet 2	10,045	10,042	3	40	40	6%	400	120	18
Pro C-7	Ranger Carpet	11,597	11,560	37	312	318	12%	400	120	18

Legend:

New, Proposed Lifts

Existing, Upgraded/Modified Lifts

Previously Approved Lifts

Source: SE GROUP

Table 3: Terrain Specifications – Existing Conditions

Map Ref.	Trail Area/Name	Top Elevation (ft.)	Bottom Elevation (ft.)	Vertical Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Average Width (ft.)	Slope Area (acres)	Average Grade (%)	Max Grade (%)	Ability Level
1-01	Spring Dipper	11,604	10,020	1,584	8,392	8,699	179	35.6	19%	36%	Intermediate
1-02	Flying Dutchman	11,595	10,150	1,445	6,401	6,777	226	35.2	23%	42%	Intermediate
1-03	Bachelor	11,613	10,842	771	3,341	3,507	167	13.5	23%	48%	Advanced Intermediate
1-04	Jackface	11,125	11,038	88	946	1,103	307	7.8	9%	44%	Intermediate
1-05	Jackwhacker	11,038	10,146	892	3,352	3,709	244	20.7	27%	37%	Intermediate
1-06	Sante Fe	10,936	10,061	875	4,343	4,478	153	15.7	20%	45%	Intermediate
1-07	Upper Whipsaw	10,732	10,328	404	1,732	1,791	191	7.9	23%	33%	Intermediate
1-08	Cross-cut	10,839	10,647	192	1,034	1,064	160	3.9	19%	33%	Intermediate
1-09	Swandyke	10,432	10,108	324	1,246	1,293	145	4.3	26%	43%	Intermediate
1-10	Lower Whipsaw	10,288	10,136	152	628	655	144	2.2	24%	40%	Intermediate
1-11	Saddlejack	10,226	10,073	153	990	1,006	212	4.9	15%	32%	Intermediate
1-12	Missouri	10,065	9,853	212	937	963	158	3.5	23%	31%	Intermediate
1-13	River Run	10,068	9,318	750	2,645	2,777	267	17.0	28%	40%	Intermediate
1-14	Beger	10,020	9,643	377	1,465	1,566	133	4.8	26%	35%	Intermediate
1-15	Midland	9,797	9,756	41	261	265	104	0.6	16%	17%	Intermediate
1-16	Bear Tree	9,635	9,527	108	646	657	112	1.7	17%	24%	Novice
1-17	Ina's Way	9,514	9,391	123	1,181	1,222	66	1.8	10%	20%	Novice
3-01	Upper Schoolmarm	11,611	10,832	779	5,645	5,811	163	21.8	14%	23%	Novice
3-02	Frenchman	11,612	10,121	1,491	6,276	6,530	170	25.4	24%	47%	Advanced Intermediate
3-03	Wild Irishman	11,440	10,253	1,187	5,093	5,260	187	22.6	23%	42%	Intermediate
3-04	Paymaster	11,359	10,123	1,236	5,893	6,100	207	28.9	21%	36%	Intermediate
3-05	Ida Belle	11,142	10,870	272	1,109	1,160	83	2.2	24%	46%	Advanced Intermediate
3-06	Silver Spoon	11,023	10,178	845	4,084	4,250	215	21.0	21%	26%	Low Intermediate
3-07	SilverMaster	10,617	10,563	53	227	236	77	0.4	24%	29%	Low Intermediate
3-08	Zuma Highway - West	10,057	9,971	86	838	894	109	2.2	10%	12%	Novice
3-09	Zuma Highway - East	9,985	9,971	14	398	400	80	0.7	4%	7%	Novice
3-10	SnoSkate Park	10,932	10,855	77	751	756	185	3.2	10%	13%	Novice
4-01	Jaybird	10,185	9,986	200	1,253	1,278	209	6.1	16%	26%	Low Intermediate
4-02	Modest Girl	10,184	10,104	80	588	594	139	1.9	14%	19%	Novice
4-03	Bobtail	10,002	9,780	221	1,325	1,358	110	3.4	17%	31%	Low Intermediate
4-04	Upper Jackstraw	9,972	9,918	54	523	532	41	0.5	10%	18%	Novice
4-05	Lower Jackstraw	9,908	9,841	67	786	808	56	1.0	9%	16%	Novice
4-06	Orfint Boy	9,978	9,916	63	256	270	105	0.7	25%	35%	Low Intermediate
4-07U	Upper Dercum's Dash	9,857	9,650	206	1,688	1,710	90	3.5	12%	22%	Novice
4-07L	Lower Dercum's Dash	9,650	9,594	56	646	652	68	1.0	9%	14%	Intermediate
4-08	Lower Schoolmarm	9,833	9,361	472	4,892	4,994	112	12.8	10%	19%	Novice