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VAIL MASTER DEVELOPMENT PLAN

2024

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2024

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CONTENTS

CHAPTER ONE: INTRODUCTION 1

A. LOCATION 3
B. LAND OWNERSHIP 3
C. CURRENT RESORT OPERATIONS SUMMARY 4
1. Winter Operations 4
2. Summer Operations 5
D. BACKGROUND 7
1. Chronology of Development 7
E. ABSTRACT OF MASTER DEVELOPMENT PLAN 9
1. Previously Approved 9
2. Upgrade Plan 9
F. VISION AND DESIGN PHILOSOPHY 11
G. STATEMENT OF GOALS AND OBJECTIVES 12
H. ACCEPTANCE BY THE FOREST SERVICE 13
I. AMENDMENTS TO THE MDP 13
1. Amendments 13
2. Process 13

CHAPTER TWO: DESIGN CRITERIA 14

A. DESTINATION RESORTS 16
1. Regional Destination Resorts 16
2. National and International Destination Resorts 17
B. BASE AREA DESIGN 18
1. Overall Layout 18
C. MOUNTAIN DESIGN 19
1. Trail Design 20
2. Lift Design 20
3. On-Mountain Guest Services 21
D. CAPACITY ANALYSIS AND DESIGN 22
1. Comfortable Carrying Capacity 23
2. Manage-To Process 23
E. BALANCE OF FACILITIES 24
F. MULTI-SEASON RECREATION ACTIVITIES 24

CHAPTER THREE: SITE INVENTORY 27

A. PHYSICAL RESOURCES 28
1. Topography 28
2. Slope Gradients 28
3. Solar Aspect 29

B. AVALANCHE HAZARDS 29

CHAPTER FOUR: EXISTING CONDITIONS 31

A. SUMMARY OF THE WINTER GUEST EXPERIENCE 32

B. EXISTING LIFT NETWORK 33

C. EXISTING TERRAIN NETWORK 39
1. Terrain Variety 39
2. Developed Alpine Terrain 41
3. Undeveloped and Gladed Terrain 43
4. Terrain Parks 43
5. Competition Venues 44

D. EXISTING CAPACITY ANALYSIS 44
1. Density Analysis 44
2. Lift and Terrain Network Efficiency 48

E. EXISTING GUEST SERVICES FACILITIES, SPACE USE ANALYSIS & FOOD SERVICE SEATING 49
1. Guest Services 49
2. Space-Use Analysis 50
3. Food Service Seating 51

F. ARCHITECTURAL THEMES 52

G. EXISTING PARKING CAPACITY 52

H. EXISTING RESORT OPERATIONS 54
1. Other Winter Activities 54
2. Ski Patrol/First Aid 55
3. Snowmaking 55
4. Grooming 56
5. Maintenance Facilities 57
6. Infrastructure and Utilities 57
7. Boundary Management 58
8. Vegetation Management 59

I. RESORT CAPACITY BALANCE AND LIMITING FACTORS 60

J. SUMMER OPERATIONS 61
1. Summary of the Summer Guest Experience 61
2. Summer Facilities 61
3. Summer Activities 62
4. Multi-Season Recreation;Summer "Activity Zones" 64

CHAPTER FIVE: PREVIOUSLY APPROVED PROJECTS 71

A. LIFTS 74
1. West Lionshead Lift 74
B. TERRAIN 74
1.Golden Peak Improvements 74
C. SNOWMAKING 75
1. Snowmaking Installation on Simba 75
2. Snowmkaing Facilities on the Front Side 75
D. FACILITIES 75
1. West Lionshead Lift Maintenace Facility 75
2. Snowcat Maintenance Facility 75
3. Golden Peak Facilities Improvements 76
E. SUMMER ACTIVITIES 78
1. 2014 Vail Mountain Recreation Enhancements Project 78
F. VEGETATION MANAGEMENT 80
G. PREVIOUSLY CONSIDERED 80

CHAPTER SIX: UPGRADE PLAN 81

A. SUMMARY 82
B. UPGRADED LIFT NETWORK 83
1. New Lift Installations 83
2. Lift Replacements 84
C. UPGRADED TERRAIN NETWORK 88
1. Blue Sky Basin 88
2. Grading Projects 89
3. Boundary Management 90
D. UPGRADED SNOWMAKING SYSTEM 90
E. UPGRADED CAPACITY ANALYSIS 90
1. Comfortable Carrying Capacity 91
2. Density Analysis 91
3. Lift and Terrain Network Efficiency Analysis 91
F. UPGRADED GUEST SERVICES FACILITIES 97

1. *Guest Services and Food Service Seating* 97
2. *Space Use* 99

G. UPGRADED PARKING CAPACITY 101

H. UPGRADED RESORT OPERATIONS 101
1. *Maintenance Facilities* 101
2. *Infrastructure and Utilities* 102

I. RESORT CAPACITY BALANCE AND LIMITING FACTORS 103

J. UPGRADED SUMMER AND MULTI-SEASON OPERATIONS 104
1. *Summer and Multi-Season Activities and Facilities* 104
2. *Recreation Zones Amended by the Master Development Plan* 106

LIST OF FIGURES

Figure 1. Vicinty Map
Figure 2. Property Boundaries
Figure 3. Slope Analysis
Figure 4. Aspect Analysis
Figure 5. Front Side Existing Winter Conditions
Figure 6. Back Side Existing Winter Conditions
Figure 7. Front Side Existing Snowmaking
Figure 8. Front Side Existing Mountain Roads
Figure 9. Back Side Existing Mountain Roads
Figure 10. Front Side Existing Summer Conditions
Figure 11. Adventure Ridge Existing Conditions
Figure 12. Front Side Existing Summer Conditions
Figure 13. Front Side Winter Upgrade Plan
Figure 14. Back Side Winter Upgrade Plan
Figure 15. Front Side Snowmaking Upgrade Plan
Figure 16. Front Side Summer Upgrade Plan
Figure 17. Adventure Ridge Planned Conditions
Figure 18. Front Side Planned Summer Zones

LIST OF CHARTS & TABLES

Chart 1. Terrain Breakdown – Existing Conditions 40
Chart 2. Terrain Distribution by Ability Level – Existing Conditions 43

Table 1. Terrain Quantity by Ability Level 5
Table 2. Terrain Gradients by Skier Ability Level 19
Table 3. Skier Market By Skier Ability Level 19
Table 4. Skier Density per Acre 20
Table 5. Lift Specifications – Existing Conditions 35

Table 6. Lift Network Capacity – Existing Conditions 37
Table 7. Terrain Breakdown – Existing Conditions 40
Table 8. Terrain Distribution by Ability Level – Existing Conditions 42
Table 9. Density Analysis - Exisisting Conditions 46
Table 10. Existing Guest Service Facilities 49
Table 11. Guest Service Space - Exisisting Conditions 50
Table 12. Exisisting Restaurant Facilities Seating and Demand 51
Table 13. Exisisting Parking 53
Table 14. Zone Characteristics 69
Table 15.Vail Summer Use Zones - Exisisting Conditions 70
Table 16. Master Developement Plan Previous NEPA Approvals Tracking Matrix 79
Table 17.Lift Specifications – Upgrade Plan 86
Table 18. Terrain Distribution by Ability Level – Upgrade Plan 88
Table 19. Upgrade Plan Grading Project Areas 90
Table 20. Lift Network Capacity – Upgrade Plan 92
Table 22. Upgrade Plan Restaurant Seating 98
Table 23. Guest Service Space - Upgrade Plan 99
Table 24. Upgrade Plan Guest Service Facilities 100
Table 25. Vail Summer Use Zones - Upgrade Plan Conditions 107

CHAPTER ONE

INTRODUCTION

This Master Development Plan (MDP) amends and updates the existing *2018 Vail Resort Master Development Plan Update.* It has been prepared to fulfill requirements of Vail Mountain Resort's Special Use Permit (SUP) administered by the White River National Forest (WRNF). Originally issued in 1962 and renewed in 1993, this SUP represents a partnership between WRNF and Vail Resort spanning over six decades. Through this partnership, Vail Mountain Resort has facilitated public recreation opportunities within Forest Service lands.

This 2023 Vail MDP consists of a thorough assessment of Vail mount Resort's (Vail) existing operations and facilities, a site invetory of the various resources within the SUP area, and developement of a comprehensive plan for future improvements. This MDP is designed to produce an inclusive recreation experience for all guests of the WRNF while remaining operationally efficient for Vail and the associated ownership. In addition, this MDP is cognizant and respectful to each of the WRNF's natural resources in association to the planned developments. The purpose of this MDP is to create an acceptable balance between the natural and human environments by minimizing environmental impacts and developing exceptional experiences for guests of the WRNF.

The Forest Service "acceptance" is consistent with the requirements of the Vail SUP. The *WRNF Land and Resource Management Plan – 2002 Revision* (2002 Forest Plan) provides the following direction for the preparation and utilization of ski area MDPs:

> *"A 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]

Furthermore, the Forest Service "acceptance" of this MDP does not "approve" any of the associated projects. Subsequent to this acceptance, Vail must take the appropriate actions for the Forest Service to initiate review under the National Environmental Policy Act (NEPA). Following this analysis, and pending the Forest Service's approval of this analysis, Vail would have the opportunity to proceed towards development of the associated projects comprising the 2023 Vail MDP.

Six chapters comprise this MDP. In addition to this first introductory and background chapter, Chapter 2 describes the design criteria used for mountain planning purposes specific to Vail. Chapter 3 details the site inventory of the resort, including physical resources, opportunities and limitations, and environmental reconnaissance which was conducted in the identification of the proposed projects. Chapter 4 describes the existing conditions at Vail and evaluates the balance of resort operations, facilities, and infrastructure including components such as, lifts, guest services, snowmaking, and parking capacities. This chapter provides the baseline conditions from which the planning strategies for future upgrades are based. Chapter 5 identifies projects previously approved by the Forest Service within Vail's SUP boundary. Chapter 6 defines the proposed upgrades and improvements to the resort. The focus of the improvements is to upgrade existing infrastructure, improve circulation, and provide a more diverse resort experience. Vail strives to create a more varied and interesting atmosphere with the improvements and to encourage longer periods of visitation and more frequent guest visits, without increasing the numbers of guests visiting on peak days.

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

A. LOCATION

The ski area is located within the Eagle-Holy Cross Ranger District of the WRNF, approximately 110 miles west of Denver. Vail is approximately 2 to 2.5 hours driving time from Denver and the Front Range metropolitan area via Interstate 70 (I-70), which passes through the Town of Vail. Vail is approximately 30 miles east of the Eagle County Airport located in Gypsum, Colorado. See Figure 1 for a map of the vicinity.

The SUP encompasses 12,353 acres of land contained within Township 5S, Range 80W Sections 7–9, 15, 19–30, 32–36; Township 5S, Range 81W, Section 12 and 13; and Township 6S, Range 80W, Section 3–5. The existing administrative boundary for Vail encompasses 8,179 acres (this excludes the private inholding at the bottom of Game Creek Bowl). The elevation ranges from approximately 8,100 feet at the base, to 11,500 feet at the highest point.

B. LAND OWNERSHIP

Vail Mountain Resort is operated by The Vail Corporation. It is a subsidiary of Vail Resorts, Inc., a publicly-traded corporation. It operates 41 mountain resorts across three continents. Vail Mountain Resort utilizes both private and National Forest System (NFS) lands. The SUP issued to Vail covers 12,353 acres, including approximately 8,179 acracres within Vail's administrative boundary. Refer to Figure 2 for property boundaries within the Vail SUP.

The majority of Vail's on-mountain lift/trail network, guest service facilities, and associated operations occur on public lands administered by the Eagle-Holy Cross Ranger District of the WRNF. These activities and operations are authorized under a Forest Service-issued 40-year SUP, which was renewed in 1993. Authorized activities on NFS lands are carried out in accordance with Forest Service policy, specific provisions contained in the SUP, as well as Forest-wide and management area direction found in the 2002 Forest Plan.

There is an 80-acre private inholding owned by Vail in Game Creek Bowl and privately-owned lands surrounding each of the four base areas.

C. CURRENT RESORT OPERATIONS SUMMARY

Vail's market is primarily composed of destination visitors and local pass holders, but also includes local regional visitors from Denver, the Front Range, Glenwood Springs, and Grand Junction. Vail's eight-year average annual skier visitation is around 1.6 million. Vail averages 150 operational days per season.

The facilities and infrastructure at Vail are owned and operated by The Vail Corporation. Vail enjoys widespread renown as one of the world's premier destination resorts. It attracts both a wide national and international destination market and is also a regional destination, as is seen by the visitation from local markets.

1. WINTER OPERATIONS

Vail currently operates 34 lifts and 204 named trails, glades, and bowls. The lift-served, developed terrain network encompasses 3,147 acres of conventional trails, groomed bowls, and other maintained terrain. There are another 2,217 acres of lift-served, managed glades, open bowls, and other, less-developed terrain. The remaining 2,730 acres within Vail's administrative boundary is undeveloped skiable terrain. Total vertical drop, including all skiable terrain, is 3,500 feet. Ski support facilities include four separate base areas: Golden Peak (base of Chair 6 [Riva Bahn Express]), Vail Village (base of Gondola One), Lionshead (base of Eagle Bahn Gondola and Chair 8 [Born Free Express]), and Cascade Village (base of Chair 20 [Cascade Village Lift]). It also includes seven full service on-mountain restaurant facilities, three limited service restaurants, and one warming hut. Snowmaking covering approximately 592 acres of Front Side terrain, including portions of Game Creek Bowl.[2]

The total terrain acreage by ability level is presented in Table 1.

[2] The term "Front Side" refers to the terrain on the northern most portion of the SUP boundary (from Two Elk Restaurant to Wildwood Restaurant to Eagle's Nest to the 4 base areas, including Game Creek Bowl). Other areas on Vail Mountain Resort include the "Back Bowls" (Sun Down, Sun Up, Tea Cup, China, Siberia and Mongolia bowls) and Blue Sky Basin (the southern most portion of the SUP boundary). The Back Bowls and Blue Sky Basin are sometimes collectively referred to as the "Back Side."

TABLE 1. TERRAIN QUANTITY BY ABILITY LEVEL

Ability Level	Acreage
Beginner	29
Novice	164
Low Intermediate	295
Intermediate	695
Advanced	1,144
Expert	819
Undeveloped, routinely skied	2,217
Total	5,364

Vail is currently served by 34 lifts:

- 2 Gondolas, one ten-passenger and one twelve-passenger
- 4 detachable six-passenger chairlifts
- 14 detachable quad chairlifts
- 1 fixed-grip quad chairlift
- 2 fixed-grip triple chairlifts
- 4 platter or T-bar surface lifts
- 7 conveyor lifts (carpets)

In addition to the lift and terrain network for snow sliding sports, the following programs and activities are a part of Vail's winter resort operations:

- Alpine skiing, snowboarding, telemark skiing, snowshoeing, ski biking, and other snow sports activities supported by chairlifts
- Learning activities and lessons for all activities listed above
- Adaptive winter sports opportunities
- Construction and maintenance of terrain parks for all levels of skiers and snowboarders
- Racing and special events/competitions in all of the above program uses
- A wide variety of children's programs
- Nature tours inside ski area boundaries
- On-mountain photography/videography
- On-mountain food service, retail opportunities, and performance centers
- Concerts and festivals on private lands (additional review per Forest Service Manual [FSM] 2340 required for such activities on NFS lands)

- Nighttime activities and dining opportunities at on-mountain facilities with access via lifts
- Snowmaking and snow grooming activities
- Vehicle and lift maintenance activities
- On-mountain alternate activities including snow shoeing, winter tubing, scenic gondola rides, mountain coaster, observation deck

The ski season typically begins in mid-November and runs through mid-April. In the winter, the mountain operates from 8:30 a.m. to 4:00 p.m.; however, these hours extend over the course of the season. Adventure Ridge, the on-mountain activity center, is open until 7:00 p.m. most evenings during the winter months and the Game Creek Club fine dining is open until 9:00 p.m. most evenings during the winter months. During the ski season maintenance activities are ongoing, 24 hours a day, seven days a week. Maintenance activities are also continuous during the non-ski season. At the peak of the ski season, Vail employs up to 4,000 people.

2. SUMMER OPERATIONS

During the summer season a limited number of lifts and restaurants operate when compared to winter operations. The Eagle Bahn Gondola and Gondola One operate in the summer for guests to access the two summer on-mountain hubs, Adventure Ridge and Mid-Vail, respectively. The gondolas' operations vary throughout the summer.

A variety of activities are provided at Adventure Ridge including a canopy tours, ziplines, mountain coaster, challenge courses, summer tubing, scenic gondola rides, disc golf, bungee trampolines, mountain top 4x4 tours tours, summer tubing, climbing wall and a system of hike, bike and multiple-use trails. Additional summer resort operations include kids' camps, guided tours, nature center, observation deck, weddings, and events. These activities are particularly important to the community and resort guests because they provide opportunities to participate in unique mountain experiences on NFS lands in a managed setting.

Five on-mountain restaurants operate in the summer. Three restaurants can be accessed from Eagle Bahn Gondola and the Adventure Ridge area, including Talon's Deck, Bistro Fourteen, and Game Creek Restaurant. Two restaurants at Mid Vail can be accessed from Gondola One—Sarge's Outdoor BBQ and The 10th. The operating hours of the five restaurants vary depending on the season.

Summer use at Vail is generated primarily by visitors from outside the valley; the resort's proximity to the Town of Vail and I-70 are major factors in summer visitation. While many attractions exist in the Town of Vail and surrounding areas, the nature-based activities provided on Vail Mountain offer unique experiences for guests.

During the summer, Vail employees approximately 1,500 staff.

D. BACKGROUND

Vail Mountain is owned by The Vail Corporation, and operates under a SUP from the Forest Service. The SUP requires the development of an MDP, which identifies management direction and opportunities for future management of the ski area on NFS lands.

As previously mentioned, Vail is primarily situated on land managed by the Eagle-Holy Cross Ranger District of the WRNF. The four base areas and all commercial and residential areas are located on private lands within the town limits of the Town of Vail. All zoning and land use issues are regulated by either the Town of Vail or Eagle County.

1. CHRONOLOGY OF DEVELOPMENT

The following timeline provides a summary of the development of Vail.

- January 1961: Work begins on Vail.
- December 1962: Vail opens for skiing with two chairlifts, one gondola, and a $5 lift ticket. During the inaugural 1962/63 season, the mountain recorded 55,000 skiers.
- January 1966: Town of Vail is established.
- December 1967: Golden Peak opens.
- December 1968: First snowmaking systems are installed. Vail achieves one million cumulative skier days.
- December 1969: The Lionshead base area, the Lionshead Gondola, and Game Creek Bowl open. A full day lift ticket costs $8. Construction of I-70 begins.
- October 1973: Free bus system is established by Vail Associates—this would become the largest free in-town bus system in the country.
- June 1981: Vail makes a significant investment to install new snowmaking infrastructure. The investment helps ensure early season skiing at Vail.
- August 1985: George Gillett purchases Vail Associates. Vista Bahn and four other high-speed quad chairlifts are installed.
- December 1988: China Bowl opens.
- December 1989: The World Alpine Ski Championships are held at Vail.
- May 1992: Apollo Partners buys Vail Associates.
- March 1995: Vail and Beaver Creek are named host site for 1999 World Alpine Ski Championships, making them the only North American venue to twice host the event.
- January 1997: Vail Associates is renamed Vail Resorts, Inc. Merger with Keystone and Breckenridge is approved. The Eagle Bahn Gondola is installed, replacing the original Lionshead Gondola.
- October 1998: Arson fires destroy Two Elk restaurant, Patrol Headquarters (PHQ), and Camp One, and damage lift operator buildings at the tops of Lifts 4, 5, 11, and 14. The fires caused more

than $12 million in damage. All lifts were repaired and re-licensed for the season and temporary facilities were constructed for Two Elk (temporarily named One Elk) and PHQ.

- February 1999: World Alpine Ski Championships are held at Vail and Beaver Creek.
- July 1999: Work begins on Category III—the third phase of Vail's 1985 master plan.
- November 1999: Newly reconstructed PHQ and Two Elk re-open.
- January 2000: The much-anticipated Category III, now named "Blue Sky Basin," opens. The expansion includes three new high-speed quad lifts and adds an extra 765 acres of developed terrain to Vail Mountain.
- December 2000: Vail opens the next phase of Blue Sky Basin with the addition of Pete's Bowl. This expansion includes an additional 125 acres and another new high-speed quad.
- June 2002: Vail is the most visited ski resort in the U.S. with more than 1.5 million visits.
- April 2003: Vail exceeds 1.6 million skier visits for the fourth time in its 40-year history.
- May 2003: Vail is recognized by the NSAA as having the number one safety program for the fourth year in a row.
- September 2003: SKI Magazine readers rank Vail as the number one ski resort in North America for the twelfth time since the ratings began in 1988.
- December 2003: The Travel Channel reveals that Vail was chosen as their best ski resort in North America.
- September 2004: The Lionshead skier bridge is improved and widened.
- June 2007: Highline Express Lift (Chair 10) and Sourdough Express Lift (Chair 14) are installed.
- June 2009: Automated snowmaking system is installed at Golden Peak for early season training.
- June 2010: High Noon Express Lift (Chair 5) is upgraded to a high-speed detachable quad.
- December 2011: Vail opens The Tenth—a ski-in/ski-out fine dining restaurant at Mid-Vail.
- June 2012: Vista Bahn Express is upgraded to a 10-person gondola and named Gondola One.
- June 2013: Gopher Hill Express Lift (Chair 12) is replaced with a recycled triple chair from Beaver Creek Resort.
- June 2013: Mountaintop Express Lift (Chair 4) is upgraded to a high-speed detachable six pack.
- July 2015: Avanti Express Lift (Chair 2) is upgraded to a high-speed detachable six pack. Adventure Ridge is expanded to include an alpine coaster and a zipline canopy tour in Game Creek Bowl is constructed at Eagle's Nest.
- July 2016: Sun Up Express Lift is replaced with a high-speed quad, resulting in all major up-hill lifts being high-speed detachable lifts. The chair is renumbered from Chair 17 to Chair 9.
- July 2017: Northwoods Express Lift (Chair 11) is upgraded to a high-speed detachable six pack.
- Summer 2019: Across the Front Side of the resort, the largest snowmaking expansion ever undertaken in a single season at a US resort is constructed. In addition, Golden Peak trails, lift, and snowmaking expansion are constructed.
- Summer/Fall 2022: Game Creek and Sun Down lifts are constructed.

E. ABSTRACT OF MASTER DEVELOPMENT PLAN

1. PREVIOUSLY APPROVED

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

- West Lionshead Lift
- Upgrade and expand snowmaking capabilities across the Front Side of Vail including Simba
- West Lionshead Lift Maintenance Facility
- Snowcat Maintenance Facility
- Blue Sky Basin Resturaunt
- Additional summer activities, multi-use, hiking and biking trails

2. UPGRADE PLAN

a) Winter

The upgrade plan winter projects include:

Front Side

- Gondola 19 (Eagle Bahn) replacement
- Upgrade Chair 3 (Wildwood Express) with a six-passenger lift
- New lift from ABC lot to Trans Montane run
- Upgrade Chair 2 (Avanti Express) with a gondola containing a mid station
- Upgrade Chair 4 (Mountain Top Express) to an eight-passenger lift
- Upgrade and extend Chair 6 (Born Free Express) to a six-passenger lift
- Replace Chair 20 (Cascade Village) with a six-passenger lift with a mid station
- Chair 26 (Pride Express) replacement
- New lift from West Lionshead to bottom terminal of Chari 26 (Pride Express)
- West Mountain Lower intermeditate terrain improvements
- Miscellaneous grading
- Construct a 12,000-square foot mountain operations facility
- Expand snowmaking pond
- Mid Vail Umbrella Bar
- Mid Vail Renovation
- 10th Mountain Deck Renovation

- Replace or expand Wildwood Smokehouse
- Renovate Eagle's Nest
- 171 acres of previously approved snowmaking coverage
- 64 acres of planned snowmaking coverage

Back Side

- Upgrade Chair 21 (Orient Express) with a six-passenger lift
- Remove or upgrade Chair 22 (Mongolia Platter)
- Upgrade Chair 36 Tea Cup Express to a 6-person lift
- Construct Mongolia Express Chairlift from Two Elk Creek to the ridgeline above Mongolia Platter
- Blue Sky Basin trails
- The creation of a groomable route from Belle's Camp across the ridge to West Earl's Bowl
- Expansion of the administrative boundary in West Earl's Bowl, East Pete's Bowl and Mongolia Bowl
- Conduct previously-approved vegetation management across Vail
- Blue Sky Basin Restaurant

b) Summer

In summary, proposed summer projects include:

- Restrooms at the top of Forest Flyer Mountain Coaster
- Additional hiking and biking trails

The net result of implementing all planned projects would not increase Vail's Manage-To threshold of 19,900 guests per day, nor are they intended to increase visitation.[3] These improvements would improve circulation and guest experience at Vail Mountain Resort.

[3] *Manage-To* is a planning tool developed by Vail, the Town of Vail and the Forest Service to evaluate impacts to ski area operations at Vail when daily visitation exceeds 19,900 guests. Vail consults with Forest Service representative at the end of any day that exceeds the threshold to evaluate health, safety and quality welfare considerations of the day's operation. Manage-To actions may be implemented as warranted by the review of the subject day's operational impacts. These include, but are limited to, restrictions on employee and dependent passes, stop issuance of complimentary tickets, manage ticket pricing and restrict student and merchant passes.

F. VISION AND DESIGN PHILOSOPHY

Clarifying a vision and design philosophy is essential in the mountain planning process, as it helps to establish an overall theme and direction for all projects. Vail has always provided a high-quality experience for guests in a way that develops awareness of the mountain environment and the incredible natural resources that are found within and surrounding the resort. More recently, Vail has expanded its offerings to summer and multi-season activities to meet the needs and desires of visitors who are looking for an experience in the natural environment.

Winter recreation at Vail is the primary reason the resort is a premier destination for guests not just from around the state, but from around the world. The Vail experience remains one of the key reasons international and regional guests visit the Eagle Valley. With more than 5,000 skiable acres and a suite of related activities, Vail has created a comprehensive winter recreation experience for guests of the WRNF. Vail strives to continue to deliver a high-quality winter experience. They do this by managing the resort in a way that ensures plenty of capacity on the mountain and guest service facilities. A detailed discussion of capacity analysis and design is in Chapter 2 of this MDP.

Summer recreational opportunities popular in mountain resort communities have evolved in the past several decades beyond "traditional" activities, such as hunting, fishing and camping, to include a significant variety of activities that allow guests to experience the natural environment while still feeling comfortable in their surroundings, such as mountain biking, mountain coaster, ziplines, hiking, and other activities. NFS lands managed under ski area SUP's are well-situated to provide these forms of recreation due to their existing infrastructure, base area facilities, and dedicated staffing. Vail's approach is to provide a sense of adventure and interaction with the setting while eliminating some of the barriers that often prevent guests from participating in outdoor recreational activities.

Vail offers the "Experience of a Lifetime" to guests of the WRNF. Integrating Vail's six values: Serve Others, Do Right, Drive Value, Do Good, Be Safe, and Have Fun, in union with Forest Service policy and management direction, this planning document has been designed to produce an exemplary comprehensive year-round recreation experience for guests of Vail and the WRNF.

G. STATEMENT OF GOALS AND OBJECTIVES

This MDP is designed to be a supplement to the current planning documents for Vail. This document will help define the resort's goals and objectives, as well as address the resort's opportunities and constraints. This MDP is designed to serve as guide to providing a high-quality recreational experience that is appealing to guests of all ages and ability levels. This document respects the natural resources of the study area and incorporates key skier preferences.[4]

The principal goal for Vail, which is supported by this MDP, is to maintain its position in the skier marketplace. Vail was rated in the top four ski resorts in North America by Forbes Magazine in 2018 and is consistently ranked in the top 10 by readers of Ski Magazine.[5] Vail takes pride in delivering a consistently great skier experience by providing a wide variety of terrain with exceptional snow conditions, minimal lift lines, cutting edge educational techniques, a constantly updated range of alternative activities, high quality food service, and friendly and responsive front-line employees. Offering additional recreation opportunities alongside exceptional resort amenities adds to Vail's attractiveness as a premier destination.

However, with ever-increasing industry competition and the ever-changing needs and expectations of its current and future guests, Vail will need to continue its evolution as a resort. The following objectives have been identified as part of Vail's future growth strategy:

- Continue to improve upon the world class all-season recreation opportunities made possible through the partnership between Vail Resorts and the WRNF.
- Provide high quality on-mountain conditions to keep guests returning year-to-year and to stay competitive in the industry.
- Upgrade year-round activities and facilities for non-snow sports participants and to provide recreational offerings for guests in the off hours and non-winter months.
- Upgrade chairlifts to improve circulation, create redundancy, and increase reliability.
- Provide consistent, reliable snow conditions throughout the winter season.
- Focus terrain upgrades on improving circulation, minimizing congestion, and adding to the guest experience.
- Provide a range of terrain and snowmaking that is appropriate for all segments of the skier population.
- Continue to upgrade the village lodging, shopping and dining offerings, as well as provide activities for periods when the mountain is not open.

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

5 https://www.forbes.com/sites/christophersteiner/2017/11/14/the-top-10-ski-resorts-in-north-america-for-2018/2/#63ad5f1d749c

H. ACCEPTANCE BY THE FOREST SERVICE

This MDP was created using an iterative and collaborative process between Vail planners, Forest Service personnel at the Eagle-Holy Cross Ranger District who administer the SUP, and SE Group. Forest Service "acceptance" of this MDP is consistent with the requirements of the Vail's SUP and updates the *2018 Vail Resort MDP Update.*

Acceptance of this document as a planning tool for Vail does not imply authorization to proceed with implementation of any of the projects that are identified herein. Therefore, all projects identified within this MDP that have not been previously approved will require appropriate review and approval by the Forest Service prior to implementation.

I. AMENDMENTS TO THE MDP

1. AMENDMENTS

This MDP is intended to be a dynamic document, which may be amended periodically to reflect innovations in facilities and recreation. It outlines Vail's strategies for maintaining a quality recreational facility on NFS lands while allowing flexibility in achieving these goals due to an evolving skier market and technological innovations.

Periodic amendments, conducted in partnership with the Vail and the Forest Service, may occur to this MDP to reflect existing conditions, changes in guest expectations, new technology, or other project influences. Typical amendments that would not warrant a complete update of the MDP could include realignments of lifts, relocation of trail systems, vegetative treatments, road improvements, changes in the location and capacity of facilities, or new projects that were not anticipated at the time this document was created.

2. PROCESS

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

Proposals requesting enlargement of the permit boundary or a substantial increase in users may require an updated MDP. Assembly of an interdisciplinary team may be required to prepare requisite NEPA documentation for such projects if, for example: 1) additional acres of NFS land outside the SUP are requested to be included within a new permit boundary; 2) the proposed changes will exceed approved facility or use capacities; or 3) new uses not disclosed in the original MDP are proposed. It is the responsibility of the Forest Supervisor to appoint the interdisciplinary team needed to prepare the environmental assessment. The cost of the interdisciplinary study is generally the responsibility of the Permittee (Vail).

If proposed revisions and/or amendments to the MDP: 1) do not change the basic development concept; 2) are not a request to increase the Manage-To threshold; or 3) in the judgment of the Forest Supervisor, do not constitute a significant deviation from the existing MDP; the proposed amendment may be accepted followed by initiation of the appropriate NEPA analysis and review.

CHAPTER TWO

DESIGN CRITERIA

Design criteria is an important concept in resort master planning. The following describe the types of destination mountain resorts, and the principal base lands and mountain design criteria that lead to the development of a successful resort. More specifically pertaining to Vail, each of these descriptions details how Vail's design contributes to its niche.

A. DESTINATION RESORTS

Vail's current and future niche in the ski industry is best defined by diverse guest opportunities serving a spectrum of visitors. As stated in Chapter 1, Vail serves a broad range of guests from the Front Range, Denver, and Eagle Valley day skiers and families, as well as guests from around the world. To accommodate these users of varying ability levels, Vail strives to provide opportunities relative to each guest's demographic. For example, a beginner skier's experience will be as high of quality as the guest desires, through guest accommodations, mountain facilities, Vail Ski and Snowboard School experience, and terrain offerings. Likewise, an expert skier may focus on Vail's world-famous Back Bowls. Currently, Vail provides a diversity of recreation offerings to a wide range of guests; this capability will be further enhanced through the projects included in this MDP. Since Vail caters to the national spectrum, its distribution of guests tends to match the wide ability range of the national guests who ski in the central Rocky Mountains (refer to Table 3).

Based on Vail's visitation data and trends, the ski area maintains a 60:40 destination-to-day skier ratio. Thus, destination guests that visit the resort and stay within the Vail area overnight (at Vail lodging or lodging within the area) account for approximately 60 percent of Vail's annual visitation. Day skiers, which are guests primarily traveling to and from the resort over the course of a day and not staying overnight (this includes guests local to Eagle and Summit counties and other surrounding areas), account for the remaining 40 percent of Vail's annual visitation.

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. At regional destination resorts, lodging typically is a component, but due to the average length of stay, and perhaps guests' vacation budgets, lodging and related services and amenities are usually less extensive than what might be expected at a larger destination resort that attracts national and international visitors. 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 appeal and cater to a significant "fly-in" market, due to a combination of the unique character and level of services offered by either or both of the mountain facilities and base village (or the Town of Vail). Vail national/international guest expectations are higher than for many Vail 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 season, and hence the appetite for varied experiences will be great. In addition to a weeklong visit, guests may also hope to participate in the resort and community on a more regular or permanent basis (through ownership of real estate and part-time residency).

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

National and international destination resorts, including Vail and the Town of Vail, offer a wide variety of lodging types, including hostels, motels, hotels, inns, bed and breakfast inns, townhomes, condominiums, and single-family chalets. Visitor participation in the real estate market has diversified substantially in the last two decades and includes ownership—either whole or fractional—as well as "usage," which comes in forms like timeshare and club participation. Typically, where the mountain facility is a primary driver for visitation, lodging is clustered at or near the mountain's base area. Amenities can include a wide variety of restaurants, lounges, shops, conference facilities, theatres or concert venues, recreation centers (e.g., swimming, fitness equipment, and indoor courts), etc. Aside from alpine skiing, recreational activities may include snow tubing, Nordic skiing, snowshoeing, sleigh rides, snowmobiling, mountain and road biking, walking, golf, tennis, horseback riding, angling, swimming, spa treatments, etc.

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

B. BASE AREA DESIGN

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

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

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

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

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

Vail has four arrival portals, Golden Peak, Vail Village, Lionshead, and Cascade, with varying degrees of lifts access and infrastructural support. The base areas are connected by the Town of Vail public transportation system and various hotel shuttle systems. Visitors staying at the four base areas walk to their desired lift and guests staying in outlying areas may utilize the public transportation system or the shuttle services offered by many lodging properties.

1. OVERALL LAYOUT

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 resort character. There may be a desire to create vitality and animation (e.g., Mont Tremblant Resort) or conversely to create serenity (e.g., Utah's Sundance Mountain Resort). The manner in which resort elements are both 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 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. Table 2 shows general gradients used to classify the skier difficulty level of the mountain terrain.

TABLE 2. TERRAIN GRADIENTS BY SKIER ABILITY LEVEL

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

TABLE 3. SKIER MARKET BY SKIER ABILITY LEVEL

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

The distribution of terrain by skier ability level and slope gradient is compared with the market demand for each ability level. It is desirable for the available ski terrain to be capable of accommodating the full range of ability levels reasonably consistent with market demand. The market breakdown for the Rocky Mountain skier market is shown in Table 3, illustrating that intermediate skiers comprise the bulk of market demand.

b) Trail Density

The calculation of capacity for a ski area is based in part on the target number of skiers that can be accommodated, on average, on a typical acre of ski terrain at any one given time. The criteria for the range of trail densities for North American ski areas are listed in Table 4.

TABLE 4. SKIER DENSITY PER ACRE

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

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

Recent trends in trail density design criteria tend to provide for a less crowded skiing experience. 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.[6] Demand is increasing for alpine open bowls, glades, and other similar types of terrain. Skier 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 like on a traditional ski run. However, skiers are attracted to these areas for the un-crowded feel, and the experience and challenge that it affords. 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. Guests of Vail desire this type of un-crowded experience as evidenced by the popularity of the Back Bowls.

c) Trail System

A resort's trail system should be designed to provide a wide variety of terrain to meet the needs of the entire spectrum of ability levels as well as the resort's particular market. Each trail should provide an interesting and challenging experience within the ability level for which the trail is designed. Optimum trail widths vary depending upon topographic conditions and the caliber of the skier/rider being served. The trail network should provide 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. This means providing developed runs for all ability levels: some groomed on a regular basis and some not—bowl, trees, and terrain parks and pipes.

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

d) Terrain Parks

Terrain parks have become a vital part of most mountain resorts' operations, and are now considered an essential mountain amenity. The presence of terrain parks has changed various operational and design elements. The demand for grooming can increase, as terrain parks often require specialized or dedicated operators, grooming machines, and equipment (such as half-pipe cutting tools). Terrain parks typically require significant quantities of snow, either natural or man-made, often increasing snowmaking demand. Terrain parks can also affect circulation on the mountain, as the parks are often points of destination.

[6] "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.

2. LIFT DESIGN

The goal for lift design is to serve the available ski terrain in an efficient manner, while being sensitive to environmental considerations. A myriad of factors are considered including wind conditions, visual impacts, wetlands, round-trip skiing, access needs, connectivity between other lifts and trails, and the need for circulation space at the lower and upper terminal sites. The vertical rise, speed and length of ski lifts for a particular mountain are important measures of overall attractiveness and marketability of a ski area.

3. ON-MOUNTAIN GUEST SERVICES

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

D. CAPACITY ANALYSIS AND DESIGN

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

This MDP discusses capacity in terms of comfortable carrying capacity (CCC), as well as Manage-To threshold (both are described in detail below). Vail is unique in the ski industry in that the resort's CCC is purposefully higher than typical winter daily visitation. While the Manage-To threshold of 19,900 provides the goal for the resort as a whole and is used to manage daily visitation numbers, the ski area's CCC continues to represent the mountain facility's comfortable capacity. Vail desires to maintain a CCC in excess of the Manage-To threshold in order to ensure a high-quality guest experience. Managing the resort in this way results in shorter lift lines (particularly during morning access periods), terrain variety that provides a challenge for the majority of the ski/snowboard market, and lift, terrain, and guest service levels that provide a consistently great guest experience for all levels of guests. This is consistent with the resort's goal of remaining the industry leader in quality.

1. COMFORTABLE CARRYING CAPACITY

Comfortable Carrying Capacity (CCC) is defined as a level of utilization for the ski area (the number of visitors that can be comfortably accommodated at any given time) that guarantees a pleasant recreational experience, without overburdening the resort infrastructure. It is commonly referred to as "comfortable carrying capacity," "skier carrying capacity," "skiers at one time," and other ski industry-specific terms. Accordingly, the design capacity does not normally indicate a maximum level of visitation, but rather the number of visitors that can be "comfortably" accommodated on a daily basis.

The calculation of the CCC of a mountain is a complex issue and is an important planning tool for the resort. Related skier service facilities can be planned, including on-mountain seating, mountain restaurant requirements, sanitary facilities, parking, and other skier services with proper identification of the mountain's true capacity. The CCC figure is based on a balance of the uphill capacity of the lift system and the downhill capacity of the trail system.

2. MANAGE-TO PROCESS

The Manage-To process allows Vail and the Forest Service to manage for health, safety and welfare considerations, and a high-quality skier experience based on calculated planning numbers (threshold). Manage-To is a flexible process developed by Vail, the Town of Vail and the Forest Service to evaluate impacts to ski area operations at Vail when skier numbers exceed 19,900, and outline steps to manage skier numbers on subsequent days if it is likely that the subsequent day's skier numbers may exceed the Manage-To threshold.

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

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

- Restrictions on employee and dependent passes
- Stop issuance of complimentary tickets
- Manage ticket pricing
- Restrict student and merchant passes

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

E. BALANCE OF FACILITIES

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

F. MULTI-SEASON RECREATION ACTIVITIES

Throughout the ski industry, resorts are reimagining the capabilities and duration of their operation. To elongate the traditional six-month winter operating window, winter-oriented resorts are pursuing a more sustainable fiscal and economic outlook via the development of multi-season recreation activities. The multi-season recreational activities also tend to attract a more diverse range of new guests than the traditional winter activities offered at resorts. This master planning process assesses the best approach and program for adding multi-season activities and facilities in order to showcase the unique characteristics that define Vail.

A strategic approach must be taken to identify reasonable and realistic opportunities for multi-season recreation elements that have the greatest likelihood for success. This MDP will examine the suitability of available land for recreation facilities; consistency with regional, state and national administration's policies and plans; initial fiscal considerations; and visitation potential. Undertaking such a comprehensive exercise should lead to a multi-season recreation program that is suitable for implementation and will align with operational goals and performance expectations.

As a four-season recreation destination, Vail has the opportunity to both provide and promote interactive, educational, natural resource-based recreation activities for all ages and demographics. As a permittee on the WRNF who can provide access to NFS lands, Vail can facilitate exciting, challenging, and appropriate use of NFS lands, and in the process, introduce new user groups to the range of recreational opportunities that exist within their National Forests.

The multi-season recreation experience at Vail is designed to utilize existing ski area infrastructure (e.g., chairlifts and guest services facilities) for both existing snow sports activities as well as year-round activities. In doing so, these activities will improve utilization of ski area infrastructure and ensure the long-term, year-round viability of Vail and the local economy, most evident in the summer months. Snow sports are, and will continue to be, the primary use of NFS lands within the Vail SUP area and are the primary economic driver for the greater region.

At a site-specific level, this MDP takes the existing setting, combined with the anticipated use of the area, to establish value-oriented and strategic prescriptions. There are five summer activity zone designations that are considered in the planning process. Zone designations are developed utilizing four characteristics similar to the Recreation Opportunity Spectrum:

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

Each of these characteristics is to be considered within the context of Vail as a developed ski area. Existing summer recreation and maintenance requirements, pertaining to Vail's operation and NFS standards, occur throughout the ski area; therefore, no area within Vail's SUP is off limits to administrative access, maintenance and master planning analysis. Vail's existing summer activity zones may be reviewed in Chapter 4.

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

> *Low – The valued landscape character "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect, and pattern of natural openings, vegetative type changes or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.*
>
> *Very Low – The valued landscape character "appears heavily altered." Deviations may strongly dominate the valued landscape character. They many not borrow from valued attributes such as size shape, edge effect, pattern or natural openings, changes in vegetation type, or architectural styles within or outside the landscape being viewed. However, deviations must be shaped by the blend with the natural terrain so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition.*

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

Chapter 3 provides a brief overview of the some of the unique characteristics of the SUP area that were taken into consideration when assembling this MDP.

PETZL

CHAPTER THREE

SITE INVENTORY

A. PHYSICAL RESOURCES

1. TOPOGRAPHY

Vail's terrain is divided into three distinct areas by the ridges and drainages within the SUP: Front Side, Back Side, and Blue Sky Basin. Vail averages 350 inches of snowfall each season and 300 plus days of sunshine each year.

The Front Side is the north facing terrain off the predominately east west ridge, which runs from the Eagle's Nest area to the Two Elk Restaurant. Its peak elevation, at PHQ is 11,250 feet above sea level. The base areas range in elevation from 8,050 feet at Cascade Village to 8,220 feet at Golden Peak. Every ability level can be served on the Front Side. The Back Side—the location of Vail's famous Back Bowls—is located on the south side of the main east to west ridge down to Two Elk Creek. The Bowls, from east to west, include Mongolia, Siberia, China, Tea Cup, Sun Up, and Sun Down. Game Creek Bowl, while on the south side of the main ridge, is generally considered part of the Front Side. The highest elevation on the Back Side is the top of the Orient Express Lift at 11,390 feet, the lowest elevation is 9,394 feet at the bottom of the Chair 5 (High Noon Express). Terrain exposure ranges from east facing, through south facing to west facing.

Blue Sky Basin is on the south side of Two Elk Creek and the terrain is predominantly north facing but ranges from east to west facing. The terrain is made up of open bowls, conventional trail and groomable gladed trails. Blue Sky Basin's top elevation is 11,577 feet at the top of Chair 39 (Pete's Express) down to 9,555 feet at the bottom of the Chair 37 (Skyline Express).

2. SLOPE GRADIENTS

As discussed in Chapter 2, terrain ability level designations are based on slope gradients and terrain features associated with the varying terrain unique to each mountain. Regardless of the slope gradient for a particular trail, if it feeds into a trail that is rated higher in difficulty, its ability level must be rated accordingly. Conversely, if a trail is fed only by trails of a higher ability level than the maximum slope of the trail would dictate, it also must be rated accordingly.

Slope gradients at Vail are depicted on Figure 3.

- 0 to 8% (0 to 5 degrees): too flat for skiing and riding, but ideal for base area accommodations, and other support facility development.
- 8 to 25% (5 to 15 degrees): ideal for Beginners and Novices, and typically can support some types of development.
- 25 to 45% (15 to 25 degrees): ideal for Intermediates, and typically are too steep for development.
- 45 to 70% (25 to 35 degrees): ideal for Advanced and Expert skiers/riders, and pose intermittent avalanche hazards.
- >70% (>35 degrees): too steep for all but the highest level of skiing/riding. These areas are typically allocated as Expert only and are closely managed by the resort operator for avalanche control.

3. SOLAR ASPECT

Vail is ideally located with predominantly northern, eastern, and western exposures. The Back Side does have south-facing slopes.

Slope aspect plays an important role in snow quality and retention. The variety of exposures present opportunities to provide a range of slope aspects that can respond to the changes in sun angle, temperature, wind direction, and shadows. Typical constraints in relation to the various angles of exposure are discussed below.

Aspect at Vail is depicted on Figure 4.

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

B. AVALANCHE HAZARDS

Vail Mountain is made up of bowls, ridges, and faces. Because of the main aspects of these slopes, varied terrain features, and the roughly 3,500 feet total vertical relief, a wind or storm from any direction can result in an avalanche hazard. Many of the slopes at Vail have been classified as "low intermittent hazard" (indicates occasional exposure to avalanches of dangerous size) because of the protective mitigation measures that are routinely applied.

CHAPTER FOUR

EXISTING CONDITIONS

Chapter 4 contains an examination and analysis of existing conditions at Vail. Completion of a thorough resort inventory is the first step in the master planning process and involves the collection of data pertaining to the resort's existing attributes. This inventory includes lifts, trails, the snowmaking system, base area and on-mountain structures, guest services, other resort functions/activities, day-use parking, operations, and utilities/infrastructure. The analysis of the inventoried data involves the application of industry standards to existing conditions at the resort. This process allows for the comparison of Vail's existing facilities to those facilities commonly found at resorts of similar size and composition.

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

The examination of existing facilities presented in this chapter correlates with Figures 5 through 11.

A. SUMMARY OF THE WINTER GUEST EXPERIENCE

Determining the capacities of the resort is an important first step in evaluating the overall guest experience because it enables planners to understand the overall balance of the recreational facility. Empirical observations and a close examination of Vail's principal components reveal the existing mountain is fairly well balanced, indicating that any opportunities for expansions should address the full spectrum of facilities and skier ability levels, while focusing on particular areas to correct some small existing imbalances.

Vail's lift capacity is computed by analyzing the resort's supply of, and demand for, vertical lift transport. Vail's lift capacity was determined to be approximately 23,820 guests. The lift capacity is one of serval capacities that determine the overall resort capacity. From a terrain standpoint, the resort's trail network has significantly higher capacity than the calculated lift network capacity, resulting in skier densities that are on the low side of industry averages. This is a desirable situation at Vail and generally ensures a high-quality experience.

Over the past decade, Vail has continued to improve on-mountain and base area facilities. These facilities are well-maintained and have improved the overall guest experience by increasing guest service space and increasing uphill capacity in popular areas. On all but the busiest days, actual daily visitation levels at the resort are below calculated capacities of the resort., meaning that long lift lines are uncommon.

The goals of Vail are to continue operating at less than full capacity, but add lifts and lift capacity where needed in order to improve circulation, ease congestion, spread skiers out, more fully utilize underutilized terrain and keep wait times at lifts at a comfortable level and, therefore, maintain a high-level ski experience for guests.

Although the calculated capacity exceeds the current skier utilization, Vail wants to continue to invest in replacing aged infrastructure and updating facilities to provide a quality experience for a diverse range of guest on National Forest Service lands. The goals of Vail are to continue operating at less than full capacity, but add lifts and lift capacity where needed in order to improve circulation, ease congestion,

spread skiers out, more fully utilize underutilized terrain and keep wait times at key lifts and during the morning staging period at a comfortable level and, therefore, maintain a high-level ski on-mountain experience for guests.

Although the terrain capacity exceeds the current skier utilization, Vail wants to make upgrades to aged infrastructure, add previously-approved lifts, add lifts to spread out skiers and improve circulation and expand and improve restaurant and guest service facilities that will contribute to the resort's ability to capture and retain market share and offer an exceptional guest experience.

B. EXISTING LIFT NETWORK

There are 34 existing lifts at Vail, consisting of 2 gondolas, 4 detachable six-passenger chairlifts, 14 detachable quad 'express' chairlifts, 1 fixed-grip quad chairlift, 2 fixed-grip triple chairlifts, 4 platter or T-bar surface lifts and 7 carpets. The lift system is well organized and provides good circulation and connectivity, other than the daily congestion that occurs on Flap Jack and around Chair 11 (Northwoods Express) during the afternoon east-to-west skier migration from Blue Sky Basin to Lionshead and Vail Village. The overall capacity of the lift network is 23,690 guests.

The original installations of the first detachable quad chairlifts at Vail—Chair 4 (Mountain Top Express), Chair 7 (Game Creek Express), Chair 11 (Northwoods Express), and Chair 16 (Vista Bahn)—occurred in 1985. All of these original quads have been upgraded. Chair 2, Chair 4, and Chair 11 have been upgraded to six-passenger detachable chairlifts, and Chair 16 has been upgraded to a 10-passenger gondola, now known as Gondola One. Chair 17 (Sun Up Express) and Chair 7 (Game Creek Express) were replaced with detachable quads, and Sun Up Express was renumbered to Chair 9. The recently constructed Sun Down Express is now Chair 17.

Chair 12 (Gopher Hill Lift) and Chair 15 (Little Eagle)—both fixed-grip triple chairlifts—are used in beginner teaching terrain areas. Chair 12 was upgraded in 2013 and Chair 15 in 2007. Both of these chairlifts are functioning well. However, detachable lifts would provide an easier loading experience for beginners.

Chair 5 (High Noon Express) was upgraded to a detachable quad in 2013 in a similar alignment as the previous lift and is functioning well, although at times, its capacity is overwhelmed. This lift serves almost 900 acres of terrain and, due to the terrain, does not provide convenient access to the western portion of Sun Down Bowl. The Sun Down Express was constructed in 2022 to provide access and egress for Sun Down Bowl.

Chair 21 (Orient Express) is approaching thirty years of service and is nearing the end of its useful life. The capacity could be increased.

Chair 3 (Wildwood Express) functions well but is aging and may be replaced during the life of this plan.

Chair 26 (Pride Express) ascends from the bottom of the Pride trail up to the Eagle's Nest. The lift functions well, but is nearing the end of its mechanical lifespan at 30 years old. It may be replaced during the life of this plan.

Chair 8 (Born Free Express) and the Chair 6 (Riva Bahn Express) are approaching the end of their useful life and could be replaced during the life of this plan. Their alignments are sufficient, but their capacities could be increased.

Gondola 19 (Eagle Bahn Gondola) is approaching twenty-five years of service, and given its year-round, day and night operations, freight hauling duties, and limited capacity, the gondola will need a major overall or potentially an upgrade during the life of this plan. The Eagle Bahn Gondola is technically a 12-person gondola; however, Vail has operated the gondola effectively as an 8-passenger gondola.

The lifts associated with Blue Sky Basin—Chair 38 (Earl's Express), Chair 37 (Skyline Express), Chair 39 (Pete's Express) and Chair 36 (Tea Cup Express)—were installed in 1999 and 2000 and are functioning well. However, the lift line mazes at Chair 36 and Chair 37 often exceed what Vail considers to be acceptable.

Chair 20 (Cascade Village) is thirty years old, has adequate capacity, and generally functions well. It is mainly used to transfer skiers to and from Cascade Village. Given its age, it may need to be replaced during the life of this plan.

The Mongolia Bowl Platter (Chair 22) is approaching thirty years of service and is nearing the end of its useful life. The platter services the eastern most part of Vail's SUP, Mongolia Bowl. This area is currently challenging to reach due to the amount of traversing required to get to and from the area. Replacement of Chair 22 during the life of this MDP is recommended, or removal if Mongolia Bowl Express is constructed.

The remaining lifts and carpets are well maintained and provide adequate capacity.

Specifications for the existing lifts are in Table 5 and Lift Capacity is detailed in Table 6.

TABLE 5. LIFT SPECIFICATIONS – EXISTING CONDITIONS

Lift Number + Name/ Lift Type	Top Elev. (ft)	Bottom Elev. (ft)	Vert. Rise (ft)	Plan Length (ft)	Slope Length (ft)	Avg. Grade (%)	Actual Design Capacity (pph)	Rope Speed (fpm)	Carrier Spacing (ft)	Manufacturer/ Year Installed
1 – Gondola One / G10	10,197	8,200	1,997	8,894	9,115	22%	3,600	1,200	200	POMA/2012
2 – Avanti Express / D6	10,596	9,131	1,465	6,423	6,588	23%	3,600	1,000	100	Doppelmayr/2015
3 – Wildwood Express / D4	10,988	10,155	833	3,369	3,470	25%	2,400	984	98	CTEC/1995
4 – Mountain Top Express / D6	11,256	10,155	1,101	4,112	4,280	27%	3,600	1,000	100	Doppelmayr/2013
5 – High Noon Express / D4	11,251	9,394	1,857	5,179	5,552	36%	2,400	1,100	110	POMA/2010
6 – Riva Bahn / D4	9,750	8,220	1,530	8,900	9,031	17%	2,800	984	84	CTEC/1996
7 – Game Creek Express / D4	10,981	9,800	1,181	4,195	4,384	28%	3,000	1,000	120	LPOA/2022
8 – Born Free Express / D4	9,713	8,120	1,593	5,863	6,076	27%	2,800	1,000	86	Doppelmayr/1988
9 – Sun Up Express / D4	11,235	10,135	1,100	3,735	3,894	29%	2,400	1,000	100	POMA/2016
10 – Highline Express / D4	11,024	9,262	1,762	6,572	6,728	27%	2,400	1,000	100	POMA/2007
11 – Northwoods Express / D6	11,259	9,715	1,544	5,573	5,783	28%	3,000	1,000	120	POMA/2017
12 – Gopher Hill / C3	8,376	8,230	146	918	937	16%	1,600	400	45	Doppelmayr/2013
14 – Sourdough Express / D4	11,230	10,713	517	2,318	2,347	22%	2,400	1,000	100	POMA/2007
15 – Little Eagle / C3	10,341	10,230	111	822	1,012	14%	1,358	400	53	Doppel Yan/2007
16- Golden Peak T-Bar	10,052	9,360	692	2,188	2,320	32%	1,200	591	59	Doppelmayr/2019
17- Sun Down Express/D4	10,986	9,498	1,586	5,783	6,087	27%	2,400	1,000	100	POMA/2022
18 – Lightning Coyote Carpet / C	10,290	10,254	36	358	360	10%	600	157	16	Magic Carpet/2002
19 – Eagle Bahn Gondola / G8	10,324	8,120	2,204	8,865	9,135	25%	2,000	1,200	288	CTEC/1996
20 – Cascade Village / C4	9,328	8,050	1,278	3,243	3,486	39%	1,800	450	60	CTEC/1987

TABLE 5. LIFT SPECIFICATIONS – EXISTING CONDITIONS (CONT.)

Lift Number + Name/ Lift Type	Top Elev. (ft)	Bottom Elev. (ft)	Vert. Rise (ft)	Plan Length (ft)	Slope Length (ft)	Avg. Grade (%)	Actual Design Capacity (pph)	Rope Speed (fpm)	Carrier Spacing (ft)	Manufacturer/ Year Installed
21 – Orient Express / D4	11,390	9,825	1,565	7,496	7,658	21%	2,400	1,000	100	Doppelmayr/1988
22 – Mongolia Platter / P	11,477	11,165	312	1,580	1,611	20%	503	412	49	Doppelmayr/1986
24 – Wapiti Platter / P	11,237	11,220	17	710	710	2%	701	413	35	POMA/1992
25 – Elvis Bahn Carpet / C	8,305	8,250	55	391	395	14%	600	157	16	Magic Carpet/2002
26 – Pride Express / D4	10,342	9,140	1,202	5,263	5,399	23%	2,400	984	98	CTEC/1993
27 – Black Forest Platter / P	9,726	9,325	401	1,877	1,919	21%	650	650	60	Doppelmayr/1995
28 – Adventure Ridge Carpet / C	10,410	10,310	100	452	463	22%	600	160	16	Sunkid/2010
29 – Rips Ride Carpet / C	8,254	8,230	24	300	301	8%	600	160	16	Sunkid/2005
33 – Golden Peak Carpet / C	8,270	8,250	20	200	201	10%	600	60	6	Magic Carpet/1994
34 – Lionshead Carpet / C	8,120	8,110	10	100	100	10%	600	160	16	Magic Carpet/2005
35 – Thunder Cat Cave Carpet / C	10,290	10,280	10	100	100	10%	600	80	8	Sunkid/1998
36 – Tea Cup Express / D4	11,244	9,580	1,664	6,494	6,704	26%	2,400	1,100	110	POMA/1999
37 – Skyline Express / D4	11,479	9,555	1,924	8,167	8,391	24%	2,400	1,100	110	POMA/1999
38 – Earl's Express / D4	11,482	10,125	1,357	4,640	4,834	29%	1,200	1,100	220	POMA/1999
39 – Pete's Express / D4	11,577	9,995	1,582	6,487	6,677	24%	1,800	1,100	147	POMA/2000

Source: Vail Mountain Resort

Key:
C = carpet
P = platter
C3 = fixed-grip triple chairlift
C4 = fixed-grip quad chairlift
D4 = detachable quad chairlift
D6 = detachable six-person chairlift
G8 = eight-passenger gondola
G10 = ten-passenger gondola

TABLE 6. LIFT NETWORK CAPACITY - EXISITING CONDITIONS

Lift Number + Name/ Lift Type	Slope Length (ft)	Vert Rise (ft)	Actual Capacity CCapacity (persons/ hr.)	Oper. Hours (hrs.)	Up- Mtn. Access Role (%)	Misloading/ Lift Stoppages (%)	Adj. Hourly Capacity (persons/hr.)	VTF/ Day (000)	Vertical Demand (ft./day)	Daily Lift Capacity
1 – Gondola One / G10	9,115	1,997	3,600	7.50	70	5	900	13,480	16,217	830
2 – Avanti Express / D6	6,588	1,465	3,600	7.00	5	10	3,060	31,380	14,232	2,200
3 – Wildwood Express / D4	3,470	833	2,400	7.00	5	5	2,160	12,595	13,196	950
4 – Mountain Top Express / D6	4,280	1,101	3,600	7.00	15	5	2,880	22,196	14,932	1,490
5 – High Noon Express / D4	5,552	1,857	2,400	6.00	5	5	2,160	24,067	24,044	1,000
6 – Riva Bahn / D4	9,031	1,530	2,800	7.50	45	5	1,400	16,065	13,925	1,150
7 – Game Creek Express / D4	4,434	1,181	3,000	7.00	0	10	2,700	22,321	14,859	1,500
8 – Born Free Express / D4	6,076	1,593	2,800	7.50	60	5	980	11,709	19,283	610
9 – Sun Up Express / D4	3,894	1,100	2,400	6.00	10	5	2,040	13,464	19,088	710
10 – Highline Express / D4	6,728	1,762	2,400	7.00	25	5	1,680	20,721	26,211	790
11 – Northwoods Express / D6	5,783	1,544	3,000	7.00	0	10	2,700	29,182	14,533	2,010
12 – Gopher Hill / C3	937	146	1,600	7.50	0	20	1,280	1,402	2,128	660
14 – Sourdough Express / D4	2,347	517	2,400	6.50	15	10	1,800	6,049	11,907	510
15 – Little Eagle / C3	1,012	111	1,358	7.00	0	15	1,154	897	1,640	550
16- Golden Peak T-Bar	2,320	692	1,200	5.00	50	5	540	1,868	18,815	100
17- Sun Down Express/D4	6,087	1,586	2,400	5.50	5	5	2,160	18,842	21,381	880
18 – Lightning Coyote Carpet / C	360	36	600	7.00	0	5	570	144	1,471	100
19 – Eagle Bahn Gondola / G8	9,135	2,204	2,000	7.50	40	10	1,000	16,530	16,641	990

TABLE 6. LIFT NETWORK CAPACITY - EXISITING CONDITIONS (CONT.)

Lift Number + Name/ Lift Type	Slope Length (ft)	Vert Rise (ft)	Actual Capacity CCapacity (persons/ hr.)	Oper. Hours (hrs.)	Up- Mtn. Access Role (%)	Misloading/ Lift Stoppages (%)	Adj. Hourly Capacity (persons/hr.)	VTF/ Day (000)	Vertical Demand (ft./day)	Daily Lift Capacity
20 - Cascade Villade / C4	3,486	1,278	1,800	7.50	100	0	-	0	18,823	-
21 - Orient Express / D4	7,658	1,565	2,400	6.50	10	5	2,040	20,752	14,849	1,400
22 - Mongolia Platter / P	1,611	312	503	6.00	30	5	327	612	8,556	70
24 - Wapiti Platter / P	710	12	701	6.00	100	0	-	0	809	-
25 – Elvis Bahn Carpet / C	395	55	600	7.50	0	10	540	223	2,111	110
26 – Pride Express / D4	5,399	1,202	2,400	7.00	0	5	2,280	19,184	14,532	1,320
27 – Black Forest Platter / P	1,919	401	650	6.00	0	10	585	1,408	4,312	330
29 – Rips Ride Carpet / C	301	24	600	7.50	0	10	540	97	1,133	90
33 – Golden Peak Carpet / C	201	20	600	7.50	0	10	540	81	780	100
34 – Lionshead Carpet / C	100	10	600	7.50	0	10	540	41	792	50
35 – Thunder Cat Cave Carpet / C	100	10	600	7.50	0	10	540	41	656	60
36 – Tea Cup Express / D4	6,704	1,664	2,400	5.50	5	5	2,160	19,768	20,201	90
37 – Skyline Express / D4	8,391	1,924	2,400	5.50	0	5	2,280	24,127	21,589	1,120
38 – Earl's Express / D4	4,834	1,357	1,200	5.00	5	5	1,080	7,328	26,295	280
39 – Pete's Express / D4	6,677	1,582	1,800	5.00	0	5	1,710	13,526	18,080	750
Total			**60,412**				**44,166**			**23,960**

Source: Vail Mountain Resort

Key:
C = carpet
P = platter
C3 = fixed-grip triple chairlift
C4 = fixed-grip quad chairlift
D4 = detachable quad chairlift
D6 = detachable six-person chairlift
G8 = eight-passenger gondola
G10 = ten-passenger gondola

C. EXISTING TERRAIN NETWORK

1. TERRAIN VARIETY

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

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

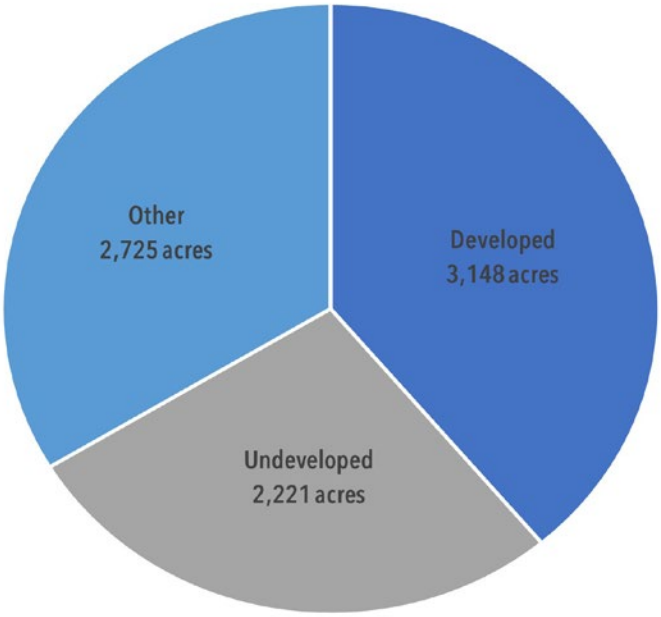
As such, this analysis accounts for three separate types of terrain at Vail, totaling over 8,000 acres (refer to Table 7, Chart 1, and Appendix A):

- Lift-accessed, developed trails, bowls and glades for beginner, intermediate, and expert skiers and riders—accounting for 3,148 acres.
- Lift-accessed, undeveloped or lightly modified terrain such as glades and bowls that are routinely skied within the ski area boundary. This consists primarily of the natural forested areas or bowls between the defined and/or maintained ski runs—these areas are primarily located in the Back Bowls and total 2,221 acres of terrain.
- The remaining terrain within the administrative boundary, 2,725 acres, accounts for tree islands between developed runs on the Front Side, and glades and bowls in the Back Bowls and Blue Sky Basin that are not modified or maintained.

TABLE 7. TERRAIN BREAKDOWN – EXISTING CONDITIONS

Terrain Type	Acreage
Developed	3,148
Undeveloped	2,221
Other	2,725
Total	8,094

CHART 1. TERRAIN BREAKDOWN – EXISTING CONDITIONS



With the exception of Ptarmigan Ridge (northwest ridge of Sun Down Bowl), South Game Creek Bowl, and West Earl's Bowl, all terrain within the SUP area can be accessed by the existing lift infrastructure (i.e., without hiking to access the terrain).

2. DEVELOPED ALPINE TERRAIN

The existing developed alpine terrain network at Vail is depicted on Figures 5 and 6. This developed, or formalized, terrain network consists of the resort's named, defined, lift-serviced, maintained trails, bowls, and glades. Despite the importance of undeveloped, alternate-style terrain, formalized runs represent the baseline of the terrain at any resort, as they are where the majority of guests ski/ride. Additionally, developed terrain is usually the only place to ski/ride during the early season, periods of poor or undesirable snow conditions, avalanche closures, and in certain weather conditions. As such, the developed trail network represents an accurate picture of the acreage utilized by the average skier/rider on a consistent basis, as well as that used by virtually all guests during the aforementioned conditions. Therefore, the full capacity of the resort must be accommodated by the total acreage of the developed terrain network, rather than relying on undeveloped terrain (which is not always available). The capacity of the developed terrain network at Vail is 35,150 guests. It is typical for ski resorts to have a terrain network capacity well above the lift network capacity, and indicates that the terrain can easily accommodate the lift network capacity.

At Vail (particularly in the Back Bowls) it can be difficult to differentiate between conventional developed terrain (i.e., ski trails) and undeveloped terrain (i.e., gladed areas)—both of which are generally open, maintained within the administrative boundary and skiable. Since there are not distinct edge to trails in the bowls, it is difficult to define a fixed area for these trails. In quantifying the acreage of developed terrain on the Front Side, a distinct area can be used where trails are defined by tree edges.

In the Back Bowls where the trails are not defined by tree edges, generally much of the area is considered developed, skiable terrain.

Based on the above rationale, and for the purposes of this analysis, the developed trail network is calculated by accounting for defined trails, as well as numerous bowls and developed glades within Vail's SUP boundary. This developed trail network is the basis for the trail acreage calculations, skier/rider classification breakdown, trail capacity, and density formulas.

The developed trail network accommodates beginner through expert-level guests on 204 lift-served, named trails, bowls, and managed glades spanning 3,148 acres. Most beginner and select/high-traffic intermediate runs are groomed on a regular basis. A number of the advanced intermediate/expert trail and runs in the bowls are routinely groomed.

a) Terrain Distribution by Ability Level

The terrain distribution analysis considers the 3,148 acres within the developed terrain network at Vail. Table 8 and Chart 2 show the terrain classification breakdown. The terrain distribution through the full range of ability levels shows lower than optimal market levels on beginner through intermediate terrain and higher on advanced intermediate and expert terrain. The last column in this table represents what can be considered the skill level distribution in the relevant skier/rider market and provides a comparison with the existing skier/rider distribution at Vail.

Chart 2 illustrates the deficiency and excesses of the terrain distribution. The deficiency of true beginner terrain is reflected by the limited amount of terrain accessed by the Gopher Hill Lift at Golden Peak and the base area carpet conveyors, and the limited beginner terrain located at Eagle's Nest. Novice, and advanced intermediate terrain are somewhat closer than the optimal market distribution levels. There is a noticeable deficiency of low intermediate terrain, due to Vail's topography and a general terrain slope consistent with advanced intermediate terrain. Advanced intermediate and expert ability level terrain is exceeding the market demand; however, it is important to note, prior to the 2007 Vail Resort MDP Update, a guest survey was performed by Vail asking the desired terrain breakdown. The results of the survey identified that there is a demand for 'extreme' steep terrain that is currently lacking at Vail.[7]

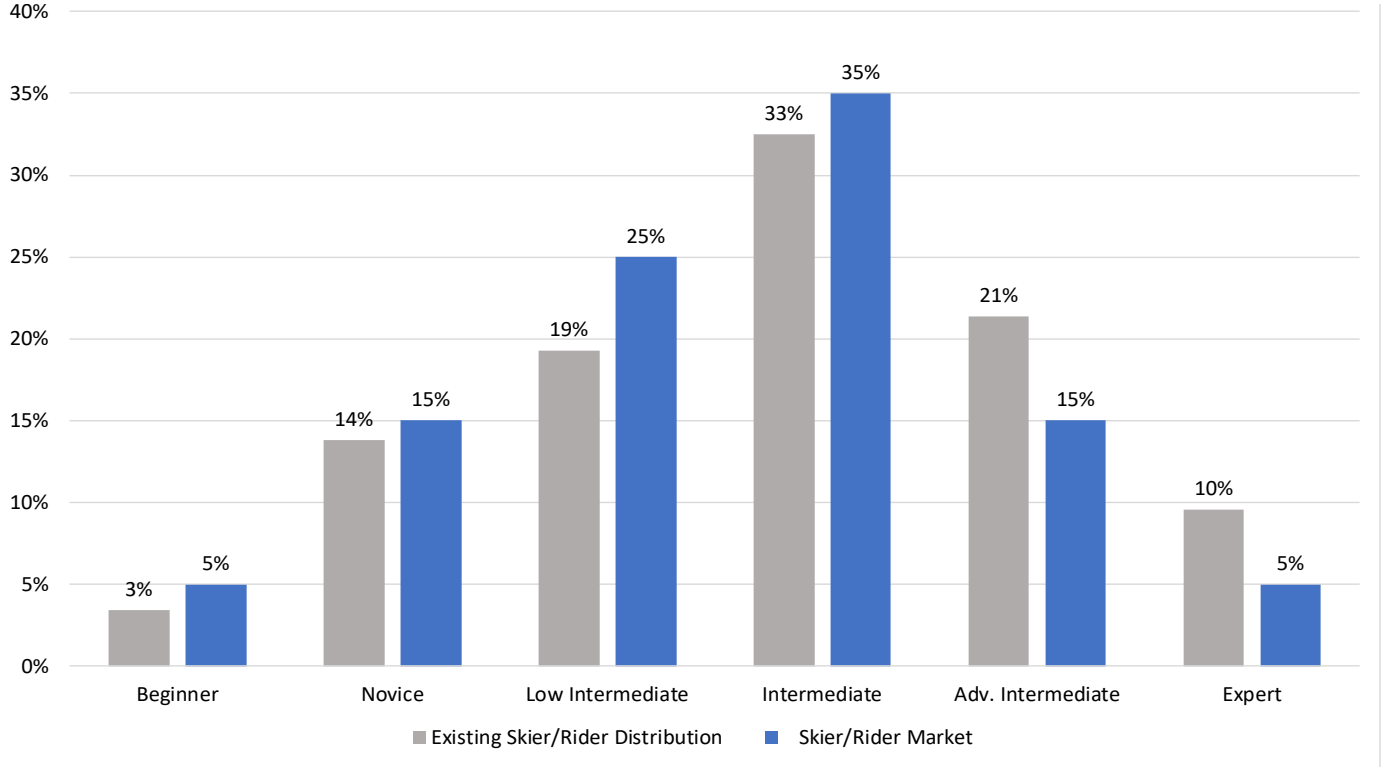
TABLE 8. TERRAIN DISTRIBUTION BY ABILITY LEVEL – EXISTING CONDITIONS

Skier/Rider Ability Level	Trail Area (acres)	Skier/Rider Capacity (guests)	Actual Skier/Rider Distribution (%)	Relevant Skier/Rider Market (%)
Beginner	29	737	3	5
Novice	163	2,954	14	15
Low intermediate	296	4,126	19	25
Intermediate	696	6,961	33	35
Advanced	1,144	4,576	21	15
Expert	819	2,048	10	5
Total	3,148	21,402	100	100

Source: SE Group

7 "RRC, 2007. While Vail has close to adequate amounts of expert terrain, that terrain is at the lower end of the expert range and the area has virtually no extreme terrain.

CHART 2. TERRAIN DISTRIBUTION BY ABILITY LEVEL – EXISTING CONDITIONS



3. UNDEVELOPED AND GLADED TERRAIN

There are 2,221 acres of maintained, undeveloped terrain at Vail, spanning 43 named areas; the topography within the SUP area includes steeps, a plethora of bowls, and glades intermingled within, and outside of, the developed and maintained terrain network. This terrain is monitored by Vail ski patrol to control access in the early season, periods of poor or undesirable snow conditions, avalanche closures, and in certain weather conditions. All other terrain within Vail's administrative boundary accounts for tree islands between developed runs on the Front Side that are not routinely skied, and glades and bowls in the Back Bowls and Blue Sky Basin that are not modified or maintained and are not skied regularly. This area is 2,725 acres.

4. TERRAIN PARKS

There are three terrain parks at Vail: Golden Peak, Avanti and Pride. The Golden Peak Terrain Park, located under the Riva Bahn Express Lift, contains two half pipes, pro-style jumps, rails and hits, and jib park. Many of these terrain park features utilize recycled snowmaking pipes and other unique repurposed items. The Avanti Terrain Park is located on under Chair 2 and features a combination of small and medium hits, rails, and boxes designed for freestyle progression. The Pride Terrain Park is located on Pride trail below Chair 26. The Pride Terrain Park contains snow features and a milled log slide. The Pride and Avanti Terrain Parks offer a progressive array of features for beginner to intermediate guests.

5. COMPETITION VENUES

There is a growing demand for competition venues to support community and international associations. Ski and Snowboard Club Vail, local high schools, Masters, foreign ski clubs, and corporate groups are some of the organizations requesting increased competition venues and supplemental amenities. It is Vail's intent to continue to host International Ski Federation (FIS) sanctioned events.

Vail's training area is located on the eastern edge of Golden Peak. This area allows for separation between racers and the general skiing public.

D. EXISTING DENSITY ANAYSIS

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

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

The active skier/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 people on each lift is the product of the number and capacity of uphill carriers. The remainder of the skier/rider population (the lift capacity minus the number of guests using guest facilities, milling in areas near the ski area portals, waiting in lift mazes, and actually riding lifts) is assumed to be descending.

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

Again, it is important to point out that the trail density analysis considers only the acreage associated with the developed trail network. Since Vail attracts a large number of advanced- and expert-level skiers, it is typical to see a large portion of the skiers at the resort utilizing the undeveloped terrain. However, it is important for a resort to have enough developed terrain to accommodate the full capacity of the resort, as there are many days that skiing the undeveloped terrain is undesirable due to snow and/or weather conditions. As a result, the density analysis presented here looks at the capacity of the developed terrain at Vail (3,148 acres).

The density analysis for Vail is illustrated in Table 9. This table shows that the average trail density at Vail is 5 skiers/riders-per-acre, a density that is below the industry standard range.[8] This situation is certainly desirable from the perspective of the recreational experience, as low skier/rider densities are a defining factor in the quality of the recreational experience.

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

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

In terms of the guest dispersal percentages, Vail is in a comfortable position of having a higher percentage of guests on the trails than in lift lines and on the lifts. This implies that the lift system is efficient. This concept is discussed further below.

TABLE 9. DENSITY ANALYSIS – EXISTING CONDITIONS

Lift Number + Name/ Lift Type	Daily Lift Capacity	Guest Distribution					Density Analysis			
		Support Fac./Milling (guests)	Lift Lines (guests)	On Lift (guests)	On Terrain (guests)	Terrain Area (acres)	Terrain Density (guests/ac)	Desired Density (guests/ac)	Diff (+/-)	Density Index (%)
1 – Gondola One / G10	830	208	30	114	478	237.9	2	6	-4	35%
2 – Avanti Express / D6	2,200	550	357	336	957	195.5	5	11	-6	44%
3 – Wildwood Express / D4	950	238	180	127	405	134.9	3	10	-7	32%
4 – Mountain Top Express / D6	1,490	373	240	205	672	130.7	5	10	-5	51%
5 – High Noon Express / D4	1,000	250	180	182	388	107.3	4	4	0	91%
6 – Riva Bahn / D4	1,150	288	70	214	578	95.6	6	14	-8	44%
7 – Game Creek Express / D4	1,500	375	225	200	700	182.9	4	6	-2	62%
8 – Born Free Express / D4	610	153	33	99	325	94.5	3	5	-2	64%
9 – Sun Up Express / D4	710	178	170	132	230	65.8	3	4	-1	74%
10 – Highline Express / D4	790	198	56	188	348	88.3	4	5	-1	77%
11 – Northwoods Express / D6	2,010	503	315	260	932	335.0	3	6	-3	48%
12 – Gopher Hill / C3	660	264	213	50	133	8.0	17	18	-1	94%
14 – Sourdough Express / D4	510	128	60	70	252	52.1	5	14	-9	36%
15 – Little Eagle / C3	550	193	192	49	116	14.0	8	18	-10	44%
16- Golden PeaK T-Bar	100	25	18	35	22	32.0	1	12	-11	8%
17- Sun Down Express/D4	880	220	180	219	261	147.9	2	3	-1	67%
18 – Lightning Coyote Carpet / C	100	45	19	22	14	0.8	17	25	-8	68%
19 – Eagle Bahn Gondola / G8	990	248	117	127	498	79.5	6	8	-2	71%
20 – Cascade Village / C4	0	0	0	0	0	3.1	0	10	-10	0%

TABLE 9. DENSITY ANALYSIS – EXISTING CONDITIONS (CONT.)

Lift Number + Name/ Lift Type	Daily Lift Capacity	Guest Distribution					Density Analysis			
		Support Fac./Milling (guests)	Lift Lines (guests)	On Lift (guests)	On Terrain (guests)	Terrain Area (acres)	Terrain Density (guests/ac)	Desired Density (guests/ac)	Diff (+/-)	Density Index (%)
21 – Orient Express / D4	1,400	350	170	260	620	212.9	3	9	-6	32%
22 – Mongolia Platter / P	70	18	11	21	20	31.7	1	5	-4	20%
23 – Wapiti Platter / P	0	0	0	0	0	0.0	0	0	0	0%
25 – Elvis Bahn Carpet / C	110	50	18	23	19	1.0	19	25	-6	76%
26 – Pride Express / D4	1,320	330	76	208	706	109.2	6	7	-1	83%
27 – Black Forest Platter / P	330	83	20	29	198	19.2	10	12	-2	84%
29 – Rips Ride Carpet / C	90	36	18	17	19	1.9	10	25	-15	40%
33 – Golden Peak Carpet / C	100	45	18	30	7	0.3	22	25	-3	88%
34 – Lionshead Carpet / C	50	23	18	6	3	0.2	16	25	-9	64%
35 – Thunder Cat Cave Carpet / C	60	27	18	11	4	0.2	22	25	-3	88%
36 – Tea Cup Express / D4	980	245	180	219	336	131.4	3	3	0	95%
37 – Skyline Express / D4	1,120	280	190	290	360	320.9	1	4	-3	25%
38 – Earl's Express / D4	280	70	36	79	95	141.1	1	4	-3	24%
39 – Pete's Express / D4	750	188	143	173	246	171.9	1	5	-4	18%
Total	23,690	6,182	3,571	3995	9,942	3,147.6	5	9	-4	51%

Source: Vail Mountain Resort
Key:
C = carpet
P = platter
C3 = fixed-grip triple chairlift
C4 = fixed-grip quad chairlift
D4 = detachable quad chairlift
D6 = detachable six person chairlift
G8 = eight passenger gondola
G10 = ten passenger gondola

1. LIFT AND TERRAIN NETWORK EFFICIENCY

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

a) Lift Network Efficiency

Within the context of ski area design efficiency, the term "Lift Network Efficiency" refers to the amount of effort and cost required to operate and maintain the lift network, as compared to the number of guests served by the lift network. The energy and costs related to the lifts include, but are not limited to: power use, operational labor, maintenance costs and labor, increased indirect administrative costs, and various direct and indirect costs associated with higher staff levels to perform these tasks. From this standpoint, the most efficient scenario is to have the fewest number of lifts possible that can comfortably and effectively serve the capacity and circulation requirements of the resort.

One way to analyze Lift Network Efficiency is to calculate the average capacity per lift at a given resort. While this calculation does not relate to the overall capacity of the resort, it can indicate if: 1) the resort is not getting maximum utilization out of its lifts; or 2) if there are more lifts than necessary for the capacity levels of the resort. When calculating this average, conveyors used for teaching, as well as lifts that are used for access only, are not included. Optimally, and in general, the average capacity per lift would likely be close to 1,000 guests. Industry-wide, the average capacity per lift is approximately 650. The average capacity per lift at Vail is 928. This rating is well above the industry-wide average, indicating that overall, Vail's lift network is efficient and functioning well. However, portions of the lift network do not efficiently serve the available terrain. Mongolia and Siberia bowls are primarily served by the Mongolia Platter; Born Free Express that is a redundancy to the Eagle Bahn Gondola; and Chair 14 (Sourdough Express) is a short lift that primarily provides access to Two Elk Lodge.

b) Terrain Network Efficiency

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

From this standpoint, the most efficient scenario is to have a quantity of terrain that closely meets the target density requirements. This can be easily achieved by reviewing the density analysis above. A terrain density index of 100 percent would imply that the resort had exactly the right amount of terrain to match target densities. Vail has an index of 51 percent, meaning that densities are 51 percent that of target densities. It is important to note that only the developed terrain network is used in these calculations, because it is largely the developed terrain that incurs the highest operational and maintenance costs. The Back Bowls and large portions of Blue Sky Basin do not incur these costs and are, therefore, included in the undeveloped portion of the terrain network. As a result, it can be assumed that the Terrain Network Efficiency is likely higher than the 51 percent would indicate. The lower-than-target number also reflects Vail's policy to intentionally maintain lower trail densities than industry standards to ensure the higher quality experience expected by its destination guests.

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

1. GUEST SERVICES

Vail provides skier services at four base areas and eleven on-mountain facilities. Additional services, particularly food service, equipment rental/repair, and retail are provided in several village locations by third party entities. On-mountain services are provided at Eagle's Nest, Mid Vail, The 10th, Buffalo's, Henry's Hut, Two Elk Lodge, Wildwood, Belle's Camp, Dawg Haus, Game Creek Restaurant and The Coop. With the exception of Henry's Hut, all other facilities have food and beverage sales. Dawg Haus only has outdoor seating. The following table summarizes the existing guest service facilities at Vail. Existing guest service facilities are shown on Figures 5 and 6.

TABLE 10. EXISTING GUEST SERVICE FACILITIES

Service Function	Base Area				On-mountain							
	Golden Peak	Vail Village	Lionshead	Cascade Village	Eagle's Nest	Mid-Vail / The 10th	Patrol HQ / Buffalos / Henry's Hut	Two Elk Lodge	Wildwood	Belle's Camp / Dawg Haus	Game Creek Restaurant	The Coop
Ticket Sales	X	X	X	X								
Public Lockers	X	X	X	X	X	X	X	X	X			
Rentals/Repair	X	XO	XO	O	X		X					
Retail Sales	X	XO	XO	O	X	X	X	X	X	X	X	
Bar/lounge	XO	O	O	O	X	X		X			X	
Adult Ski School	X	X	X		X	X						
Kid's Ski School	X		X		X							
Restaurant Seating (Indoor)	XO	XO	XO	O	X	X	X	X	X	X	X	X
Restrooms	X	X	X	X	X	X	X	X	X	X	X	
Ski Patrol					X	X	X	X	X	X		
Administration	X	X	X		X	X						

Key:
X = operated by Vail Mountain Resort; O = operated by others

2. SPACE-USE ANALYSIS

Sufficient guest service space should be provided to accommodate the existing Manage-To number of 19,900 guests – with some additional capacity to handle peak day visitation. Vail's current guest services spaces at the base and on the mountain function well. At base area facilities, available space exceeds recommended values in most cases. Third-party vendors are also located in the base area to offer additional services. On-mountain facilities space-use generally functions well. Space can be constrained at Two Elk and Buffalo's during busy times, but generally function sufficiently.

Vail's base areas are key to the overall resort function and guest experience, and provide guests with services they need. The four base areas (Golden Peak, Vail Village, Lionshead, and Cascade Village) and Town of Vail seamlessly function to provide visitors lodging, restaurants, retail and other amenities during the mountain operational hours. These businesses provide additional guest services to skiers and riders, as well as a large number of guests visiting Vail who choose not to ski or ride. Since the 2007 Vail Resort MDP Update, the Lionshead and Vail Village base areas have seen significant investment and renovations. An estimated $1 billion worth of renovations have been completed in the Lionshead area including the Arrabelle, Ritz-Carlton, Four Seasons, and Gore Creek Place. In Vail Village, a $250 million redevelopment project of the Crossroads was completed in 2009. Solaris is now a mix of condos, retail space, and restaurants. The large plaza at Solaris is often the site for winter and summer concerts, markets, and festivals.

TABLE 11. GUEST SERVICE SPACE - EXISTING CONDITIONS

Location	Exisiting Square Footage	Reccommend Range	
		Low	High
Golden Peak Base	98,517	37,890	47,180
Vail Village Base	97,000	60,400	76,320
Lionshead Base	8,244	65,420	82,690
Cascade Base	800	4,800	6,060
Mid Vail/The 10th	49,000	34,330	43,380
Buffalo's/PHQ	6,500	8,060	10,190
Two Elk	34,000	38,350	48,440
Eagles Nest/WH	44,020	14,160	17,890
Game Creek Club	11,287	2,270	2,880
Belle's Camp/D H	2,637	1,300	1,620
Wildwood	10,520	11,880	15,040
TOTAL SQUARE FEET	362,525	278,860	351,690

3. FOOD SERVICE SEATING

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

The following table summarizes the existing indoor and outdoor restaurant seating at Vail, as well as the "nice day" and "adverse day" seating capacities. These capacities are based on the assumption that outdoor seating may be utilized when the weather is fair (i.e., nice day), while guests are limited to indoor seating during adverse weather days (i.e., adverse day).

On-mountain restaurant seating was analyzed in detail for the space use analysis. On-mountain adverse day guest seating is lower than recommended values. Table 12 illustrates the current on-mountain restaurant seats and demand for seats at each facility based the capacity model.

TABLE 12. EXISTING RESTAURANT FACILITIES SEATING AND DEMAND

Restaurant	Indoor Seating	Outdoor Seating	Total Seating	Average Seat Turnover	Nice Day Capacity	Adverse Day Capacity	Lunchtime Demand
Eagle's Nest	590	185	775	4.0	3,100	2,360	2,107
Wildwood	240	184	424	4.0	1,696	960	1,981
Buffalo's/Henry's	94	160	254	4.0	1,016	376	1,343
Two Elk Lodge	1,100	600	1,700	3.5	5,950	3,850	6,390
Belle's Camp/Dawg House	30	96	126	3.5	441	105	215
Mid Vail/10th	1,500	445	1,945	3.5	6,808	5,250	5,469
The Coop	65	150	215	4.0	860	260	330
Game Creek Club	194		194	2.5	485	485	378
TOTAL	3,813	1,820	5,633		20,356	13,646	18,214

As shown in Table 12, the demand at each restaurant facility generally meets supply. The area with the biggest discrepancy between adverse day capacity and lunchtime demand is Buffalo's at the top of Chair 4, Chair 11 and Chair 5. This is a logical meeting place for groups and families. On adverse days when seating on the deck is not available, facilities are limited. Henry's Hut, a yurt located 100 feet from Buffalo's, is a backup option; however, no restrooms, food or beverage services are offered. Two Elk Lodge is another facility that sees high demand and a has a discrepancy between adverse day capacity and lunchtime demand. Two Elk Lodge is the farthest east facility on the mountain (with the exception of the Dawg Haus in Blue Sky Basin), and services skiers and riders in Mongolia, Siberia, China, and Sun Up bowls and Blue Sky Basin, as well as Front Side terrain around Chair 10 and Chair 14. On adverse

days, when outside seating is not available, Two Elk Lodge experiences higher lunchtime demand than is available.

Table 12 further illustrates that on nice days, Vail has a capacity for 20,356 guests. On an adverse weather day, the capacity is 13,646 and lunchtime demand is 18,346. Given the Manage-To threshold of 19,900 guests, there is adequate seating on busy days when the outdoor decks can be utilized but lacks on-mountain seating during adverse days and lunchtime during high visitation days. The Vail and Lionshead villages also provide seating capacity in base area restaurants operated by other entities. These base area restaurants are generally thought to self-regulate based on market demand.

F. ARCHITECTURAL THEMES

The architectural theme for the existing facilities on Vail Mountain may be characterized as being reminiscent of the influences of high, alpine design techniques while reflecting the western heritage of the Rocky Mountains. The current Vail Design Guidelines have been used to create a consistent architectural theme across the mountain.

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

Materials are natural and indigenous; such as stone, log timber, wood or stucco. Synthetic materials which simulate natural materials have been used. Detailing has been hewn, rugged and less refined. The exterior and interior use of materials conveys simplicity and craftsmanship. Use of materials expresses mass at the base of the building, with lighter materials occurring toward the top of the structure.

G. EXISTING PARKING CAPACITY

Parking demand is affected by day and overnight skiers arriving in their personal vehicles, as well as the mountain's employees, the village's non-mountain employees, village shoppers, and construction workers. The majority of visitors park in the two Town of Vail parking structures, Vail Village and Lionshead. These two structures account for nearly 60 percent of all parking available in Vail, excluding hotel and private residence parking. On most days the existing parking lots are adequate and the supply meets the demand. When all parking areas are completely full, overflow parking occurs on the South Frontage Road. An agreement between the Town of Vail and Colorado Department of Transportation sets a goal of 15 days or less per season or 30 days per year of parking on the South Frontage Road.[9]

During the 2022-2023 season, the Town of Vail began a new parking program to encourage public transit use and carpooling. Vail started charging higher rates on peak days (Fridays, Saturdays, Sundays, and a number of holidays) at main parking locations. Parking at Red Sandstone, Ford Park, and the Soccer Lot was made available for a fee. Areas slightly further away serviced by the bus system remain free. The Town of Vail and the resort will continue to collaborate to increase public transit ridership and carpooling.[10]

9 Town of Vail. 2009. Vail Transportation Master Plan Update. March 2009. Town of Vail. 2016. Town of Vail Town Council Parking Update Memorandum. October 18, 2016.

10 Town of Vail. 2022. Town of Vail Town Council Parking and Mobility Task Force Recommended Winter 2022-2023 Parking Program Memorandum. October 4, 2022.

TABLE 13. EXISTING PARKING

Parking Area	Public	Employees	Total
Golden Peak			
Passport Garage */GP Lot	150	6	156
Manor Vail Public	30		30
Soccer Field	58	2	60
GP Drop Off		5	5
Vail Village			
Village Structure	1,267		1,267
Solaris	100		100
Ford Park	186	8	194
Vail Mountain Club Parking *	89		89
Founders Garage *	116		116
Mountain Plaza Employee		40	40
Lionshead			
Lionshead Structure	1,065		1,065
Arrabelle Club Parking *	65		65
West Lot	60		60
Holy Cross Lot		213	213
North Day Lot		29	29
Cascade			
Cascade Structure	112		112
Administration Building		45	45
Outlying			
East Vail Park and Ride	12		12
West Vail Park and Ride	180		180
Donovan Park and Ride	90		90
Parks and Trailheads	40		40
Red Sandstone Park	109	5	114
TOTAL SPACES	3,729	353	4,082

Assuming average vehicle occupancies of 2.7 persons, 4,082 parking spaces would provide parking for 11,021 users, including employees. The periodic deficiency of parking at Vail is offset by skiers within walking distance of base area lifts, Vail's free bus systems, the Eagle County bus system, and the parking associated with lodging and private residences. Within a quarter mile of base area lifts, approximately 5,000 visitors can be accommodated.[11] During busy weekend and holidays, this number could be much bigger depending on unit occupancy. The Town of Vail bus system provides rides for over three million riders per year.[12] Recent changes to parking have increased ridership since the beginning of the 2022-2023 season. The Town of Vail estimates 95 percent of Town of Vail residents live within a half mile of a bus stop.[13] With the existing parking, lodging and Town of Vail bus system (20,848) the Manage-To threshold (19,900) would be exceeded. Although parking and access capacity is higher than the Manage-To threshold, it is a limiting factor due to the fact that guests simply cannot access the resort if parking and local accommodations are full and guests are not staying in accommodations within a reasonable distance of a Town of Vail bus stop.

H. EXISTING RESORT OPERATIONS

1. OTHER WINTER ACTIVITIES

Adventure Ridge is the on-mountain activity center. It is located at the top of the Eagle Bahn Gondola. It operates during normal winter hours and stays open until 7:00 p.m. most evenings during the winter months.

In addition to the lift and terrain network for snow sliding sports, the following programs and activities are a part of Vail's winter resort operations:

- Alpine skiing, snowboarding, telemark skiing, snowshoeing, ski biking, and other snow sports activities supported by chairlifts
- Learning activities and lessons for all activities listed above
- Construction and maintenance of terrain parks for all levels of skiers and snowboarders
- Racing and special events/competitions in all of the above program uses
- A wide variety of children's programs including kids snowmobiling and adventure zones
- Nature tours inside ski area boundaries
- On-mountain food service, retail opportunities, and performance centers

11 Town of Vail, 2015. Year in Review. Town of Vail. 2018. Personal communication with Sean Koenig, Town of Vail GIS Specialist. July 3rd. Note: 3,942 condo and single-family home bedrooms are located within a quarter mile of base area lifts. An additional 5,476 hotel pillows are located in the Town of Vail. Assuming half of the units are within a quarter mile of base area lifts and a 75 percent occupancy rate, 5,010 visitors per day can be attributed to walking to base area lifts

12 Town of Vail. 2009. Vail Transportation Master Plan Update. March 2009. Town of Vail. 2017. Year in Review. Town of Vail. 2018. Personal communication with Joyce A. Rihanek, Town of Vail Transit and Parking Department. March 30, 2018. Note: Base on data from the 2016/2017 ski season, the In Town, East Vail and West Vail loops averaged 16,088 riders a day during the ski season. Assuming 30 percent of these riders were staying at residences farther than a quarter mile from base area lifts, 4,826 visitors per day can be attributed to riding the bus to ski at Vail.

13 Town of Vail. 2023. Engage Vail. https://www.engagevail.com/govail2045

- Concerts and festivals on private lands (additional review per Forest Service Manual [FSM] 2340 required for such activities on NFS lands)
- Nighttime activities and dining opportunities at on-mountain facilities with access via lifts
- Snowmaking and snow grooming activities
- Vehicle and lift maintenance activities
- On-mountain alternate activities including snow shoeing, winter tubing, scenic gondola rides, mountain coaster, observation deck

2. SKI PATROL/FIRST AID

Vail Ski Patrol's six on-mountain facilities are located at Two Elk Lodge, the Golden Peak Terrain Park, Wildwood, Eagle's Nest, Belle's Camp, and PHQ located at Buffalo's. These facilities are stand alone or located within guest service facilities. Toboggans and other medical equipment are stored across Vail to attend to guests as needed. Approximately forty patrollers are on duty each day. They respond to inbounds calls, perform avalanche control, and conduct safety checks.

3. SNOWMAKING

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

Vail's snowmaking system has the capacity to make snow on 592 acres of terrain, as shown on Figure 7. Water for snowmaking is withdrawn from the diversion points on Gore Creek adjacent to the Vail Valley Waste Water Treatment Plan and the Dowd Junction infiltration gallery located at the confluence of Gore Creek and the Eagle River. Water storage is located at Snow Central with a capacity of 6 million gallons. Vail has five pump stations (Glen Lyon-Gore Creek, Dowd Junction, Snow Central, Snow Summit and Golden Peak) and two compressed air locations (Snow Summit and Golden Peak). The Snow Summit pump station and compressed air are located in the same building, while the Golden Peak pump station and compressed air are located in two separate buildings.

Vail recently invested significant capital into its snowmaking system based on a 2016 assessment in the Vail Snowmaking Master Plan.[14] In summer of 2019, Vail installed over 400 new snow guns and 19 miles of new snowmaking pipe. There is potential to expand the existing snowmaking pond to increase storage capacity as well. Vail's goal with the investment is to provide a proportional balance between snowmaking coverage and total skiable acreage; provide early season beginner, egress to both villages and top to bottom skiing; provide consistent opening by Thanksgiving; and take advantage of higher elevation, lower temperature areas of Mid Vail and the upper mountain.

14 Sno.matic Controls and Engineering, Inc. 2016. Vail Mountain Snowmaking Master Plan

a) Water Sources

Vail has a number of water supplies to support its domestic and snowmaking operations. The available water supplies and water facilities have been sufficient to provide for Vail's water needs. Vail does not own any Original Water Rights as defined in paragraph F.3.a(2) of clause D-30, the Ski Area Water Clause Final Directive. The following are Vail's water supplies:

- Vail has a lease to use water from Tourist Trap Spring and Plow Spring for restaurants and other facilities within the permit boundary. The sources for the two springs are the Mill Creek alluvium and Mill Creek. Each water supply allows for 0.133 and 0.013 cubic feet per second (cfs), respectively. The water rights to these springs are owned by the Eagle River Water & Sanitation District (ERWSD). Vail also receives potable water produced by ERWSD's wells outside of the permit boundary. The primary purpose of this water is for domestic uses at on-mountain restaurant and facilities.
- Vail owns the "Vail Mountain Snowmaking Pipeline" which diverts from the confluence of Gore Creek and the Eagle River outside of the permit boundary to supply water for snowmaking. The amount and source of the water is 4.5 cfs from the Eagle River. The primary purpose of this water is for snowmaking and domestic uses.
- Vail obtains contract water from ERWSD for snowmaking from Gore Creek Snowmaking Pt B which is owned by ERWSD and located outside of the permit boundary. The amount and source of the water is 4.5 cfs and 603 acre-feet from the Gore Creek. The primary purpose of this water is for snowmaking.
- Vail obtains contract water from two sources to augment out-of-priority diversions: (a) Vail owns shares in the Eagle Park Reservoir Company which entitles it to take water from Eagle Park Reservoir, and (b) Vail obtains contract water from the Bureau of Reclamation for water services out of Green Mountain Reservoir. The sources for the water supply are the East Fork of the Eagle River and the Blue River, respectively. Each water supply allows for 600-acre-feet of water. The water supplies from Green Mountain Reservoir and Eagle Park Reservoir are not additive because the use of Green Mountain Reservoir releases for augmentation by exchange is limited to times when the Eagle River stream flow exceeds the instream flow water rights appropriate by the Colorado Water Conservation Board. The Eagle Park Reservoir and Green Mountain Reservoir sources may also be used at the Beaver Creek Ski Area and at other developments. The primary purpose of this water is for snowmaking and augmentation.

Snowmaking is a key part of Vail's operations. The current snowmaking water uses at Vail do not exceed the yield of the water rights Vail owns or holds by contract, even in a very dry year such as occurred in 2012-2013. U.S. Fish and Wildlife Section 7 consultation has been completed on 1,316 acre-feet of water for snowmaking at Vail. In addition, Vail completed its water clause sufficiency analysis in 2016.

4. GROOMING

Vail is dedicated to providing the best possible grooming experience for its guests. During the 2017/18 season, Vail increased grooming operations in the Back Bowls to provide a more consistent and reliable surface. Vail grooms approximately 1,600 acres of terrain nightly. The resort's fleet includes 31 cats dedicated to grooming and 10 haul cats.

5. MAINTENANCE FACILITIES

Vail's Lift Maintenance department has facilities at the top of the Eagle Bahn Gondola in the Eagle's Nest building, as well as in a stand-alone building near the top of Chair 14.

Snowcats are maintained in the Snow Summit Shop located on the Mid Vail/Eagle's Nest Road.

The primary vehicle lifts and warehouse is located within the Town of Vail on private land between Lionshead and Cascade Village on the South Frontage Road.

Mountain operations offices are located in Lionshead. The lower patrol room is located in Vail Village. Ski School has facilities at Vail Village, Golden Peak and Lionshead.

6. INFRASTRUCTURE AND UTILITIES

a) Waste Water

Wastewater generated on Vail Mountain is piped to and treated by the Eagle River Water and Sanitation District at their plants in the Town of Vail and the Town of Avon. Onsite septic systems are utilized at Belle's Camp, the Chair 14 Shop, and the Snow Summit Shop.

b) Domestic Water

Domestic water is supplied to the base area facilities by the Eagle River Water and Sanitation District. Domestic water is supplied to the on-mountain facilities from a combination of on-mountain wells and the Eagle River Water and Sanitation District. The spring water is of an extremely high quality, and is chlorinated at the Plow Springs Tourist Trap Pump House and at Belle's Camp.

c) Communication Sites

In addition to Vail Mountain Resort, the following agencies have a presence at the communication site on Vail northeast of PHQ.

- National Law Enforcement Center (NLEC)
- Colorado State Patrol
- Forest Service
- Eagle County Search and Rescue

d) Power

Electric power is supplied to Vail by Holy Cross Energy.

e) Mountain Roads

A network of existing mountain roads provide access across Vail's SUP. These roads are critical for mountain operations and maintenance of existing infrastructure. Figures 8 and 9 show the location of mountain roads on the Front Side and Back Side of Vail.

7. BOUNDARY MANAGEMENT

Vail's SUP boundary is 12,353 acres while the administrative boundary is 8,179 acres. The 4,174-acre difference is primarily comprised of the South Game Creek Bowl, West Earl's Bowl, and East Pete's Bowl. These areas are not patrolled but are routinely skied. West Earl's Bowl, East Pete's Bowl and portions of the South Game Creek Bowl are within Vail's SUP boundary but outside the administrative boundary. East Vail Chutes and Mushroom Bowl are also routinely accessed from Vail's lift network, but are outside the SUP boundary.

a) South Game Creek Bowl

Accessed from the top of Ptarmigan Ridge or the Lost Boy trail, South Game Creek is routinely skied by up to 200 people per day. Users ski the bowl to an old logging road that leads to Minturn. On average, two search and rescue operations are conducted annually for skiers who venture into this area.

This backcountry area is within the Vail SUP, but outside of the administrative boundary. Vail has not initiated nor completed any planning for the South Game Creek Bowl area and has no immediate plans to pursue lift-served skiing in this area.

The South Game Creek Bowl area is extremely suitable for the development of lift-served skiing and would provide excellent east to west facing intermediate to expert terrain. The area is not patrolled, and no avalanche control work is currently performed there.

Further study of the South Game Creek Bowl area would be necessary prior to meaningful inclusion in a future MDP.

b) West Earl's Bowl and East Pete's Bowl

West Earl's Bowl is accessed by skiing west down the ridge from the top of the Chair 37 (Skyline Express) at Belle's Camp. East Pete's Bowl is accessed by skiing east off of Grand Review trail from the top of Chair 39 (Pete's Express). Both areas are within the SUP area, but outside of the administrative boundary. The access routes are currently a narrow track connecting a series of meadows. The track is not wide enough for mechanized travel and is un-maintainable.

West Earl's and East Pete's bowls are a combination of chutes and glades that are routinely round trip skied from the Chair 38 (Earl's Express) and Chair 39 (Pete's Express), respectively. Its proximity to lift service is what drives its heavy use. Both areas do not currently have adequate access to be included within Vail's administrative boundary, due to the difficulty in getting rescue equipment into these areas. If the access route could accommodate mechanized travel and/or rescue equipment, the administrative boundary would be relocated to include West Earl's and East Pete's. Lift access in these areas would facilitate normal ski area management to this currently heavily skied area.

c) East Vail Chutes and Mushroom Bowl

The East Vail Chutes and Mushroom Bowl are outside of the SUP area, but are heavily skied throughout the winter season. Vail estimates that 75 percent of skiers accessing these areas are skiing the East Vail Chutes, with the remainder skiing Mushroom Bowl.

The East Vail Chutes is an extremely steep, avalanche prone bowl that drains down to Interstate 70 or to East Vail. In using this area, skiers hike from the top of the Mongolia Platter, ski the Chutes, and then return to the ski area via the Town of Vail bus system. It is assumed that this area has become very popular due to the lack of extreme terrain within the SUP area.

Mushroom Bowl is an intermediate to advanced bowl that drains back to the ski area at the bottom of Chair 10 (Highline Express). Some users take a warm up run in Mushroom Bowl before skiing down the East Vail Chutes.

Ski area personnel do not maintain, patrol, or perform avalanche control work in either of these areas.[15]

8. VEGETATION MANAGEMENT

Natural processes, in conjunction with approved treatment practices will continue to affect the health and diversity of forests in the Vail Valley. Notably, the recent mountain pine beetle outbreak has had a drastic impact on the local forests. Large numbers of lodgepole pine trees in the Vail Valley were infected and killed by the mountain pine beetle. Between the Lionshead and Dowd Junction area alone over 75,000 infected trees are visible from I-70. Although the outbreak has subsided since its peak in the late 2000s, the Vail area is still managing the loss of hundreds of thousands of trees.

In 2011, the Vail Ski Area Forest Health Project Environmental Assessment was completed. The project approved removing dead and dying trees, regenerating lodgepole pine and aspen where they occur, and perpetuating mixed conifer and aspen stands on approximately 984 acres of NFS lands within the Vail SUP area. This included 439 acres of clearcutting, 453 acres of small clearcutting with some thinning, and 92 acres of partial cutting. A range of silvicultural prescriptions were approved to best treat the tree stand conditions at the time of implementation. Identifying and treating areas of concern are treated as a high priority for Vail's annual summer construction and will continue to be. Refer to Figures 2-1 and 2-2 in Appendix B (the Vail Ski Area Forest Health Project EA) for exact locations of stand treatments within Vail's SUP.

15 The Mill Creek Road is maintained under an agreement with the Eagle County Sheriff's Department to facilitate emergency access for search and rescue.

I. RESORT CAPACITY BALANCE AND LIMITING FACTORS

The mountain master planning process emphasizes the importance of balancing recreational facility developement. The analysis (discussed above in each section) includes balancing lift network, terrain network, guest service spaces, parking and other resort amenities and operations. The Manage-To threshold is 19,900 guests per day, but many of Vail's capacities exceed that number. This indicates that Vail's facilities can comfortable accomodate beyond the Manage-To threshold. Since the Manage-To number is not often reached, these higher capacities provide a higher-quality experience for guests even on peak days.

With regards to the terrain and lift network, Vail has a low trail density (terrain index is 51 percent) and highly efficient lift network (928 lift network efficiency). This low trail density and high lift network efficiency appears imbalanced; however, it creates a desirable skier experience with shorter lift lines and plenty of acres to ski. The apparent imbalance of the terrain and lift network can also be attributed to the portions of the ungroomed, alternative terrain that is typical of the Back Bowls and Blue Sky Basin, being included in the terrain analysis.

Two limiting factors at Vail include on-mountain restaurant seating and parking. Vail's on-mountain lunchtime demand is close to 18,000 (with the remaining guests are eating in the base areas). Vail has sufficient on-mountain restaurant seating if outdoor seats are included (i.e., nice day capacity), but insufficient seating if only indoor seats are included in the analysis (i.e., adverse day capacity). This deficiency of on-mountain indoor seating should be addressed. Guest service spaces in the various base areas are adequate if third-party rental shops, restaurants, and other guest service spaces are included. While parking and resort access combined is not a limiting factor, parking alone is the most limiting factor. There are enough parking spaces for about half of the skiers on the mountain (10,914). The rest of the access capacity is provided by Town of Vail buses, lodging shuttles and other drop-offs, accommodations that are within walking distance of lifts, and a limited number of ski-in/ski-out properties. Like many ski resorts, parking remains a constant issue at Vail and will continue to be addressed by working with all stakeholders.

J. SUMMER OPERATIONS

1. SUMMARY OF THE SUMMER GUEST EXPERIENCE

When guests visit Vail in the summer, they can experience the outdoor environment through a variety of of both active and passive recreational activities. Out of the both of the Vail Village and Lionshead base areas, visitors can hike, bike, take scenic gondola rides, and play mini-golf. However, the majority of summer activities at the resort take place at Adventure Ridge, which is located at the top of the Eagle Bahn Gondola. Activities at Adventure ridge include 4x4 vehicle tours, zipline tours, adventure courses, summer tubing, mountain coaster rides, rock climbing (via a climbing wall), disc golf, and bungee trampolines.

Existing summer activities and facilities are shown on Figures 10 and 11.

2. SUMMER FACILITIES

a) Lift Operations

Vail operates the Eagle Bahn and Gondola One gondolas to transport guests to Adventure Ridge and Mid-Vail areas. These gondolas typically operate from early June through September, depending on conditions. Gondola operations are scheduled seven days a week from the second week in June through Labor Day, with weekend-only operations occurring before and after this period. During the summer season, the Eagle Bahn Gondola operates from 9:30 a.m. until 6:00 p.m. Monday through Thursday, and until 9:00 p.m. Thursday through Saturday, as weather allows. Gondola One operates from 9:30 a.m. to 4:00 p.m. daily during the summer season, as weather allows.

b) Guest Service Facilities

During the summer season, Vail's guest service facilities are open to support it summer operations. Ticket offices, rental shops, and guide services are located in both Lionshead and Vail Village. There are five on-mountain restaurants open during the summer to offer a variety of food and beverage options to guests—Sarge's Shelter BBQ and The 10th at Mid-Vail; and Talon's Deck, Bistro Fourteen, and Game Creek Restaurant at Adventure Ridge.

3. SUMMER ACTIVITIES

a) Hiking, Biking, and Multi-Use Trails

Hiking, biking and multi-use trails are located across the Front Side of Vail. There are 17 miles of hiking trails, 40 miles of biking trails, and 9 miles of multi-use trails.

b) Mini-Golf

Located adjacent to the bottom terminal of Eagle Bahn Gondola, a 9-hole mini-golf course provides a convenient recreation activity for all ages.

c) Mountain Top 4x4 Tours

The Mountain Top 4x4 Tour is an open-air adventure in a guided off-road vehicle offering views of Vail's Back Bowls, the Gore Range, and Mount of the Holy Cross. Guides share information about the surrounding landscape, ecosystems, geology, and the WRNF. The tours begin at Adventure Ridge, navigate along the mountain roads and ridge lines, then return back to Adventure Ridge.

d) Game Creek Aerial Adventure

Located in Game Creek Bowl, a series of seven ziplines and aerial bridges comprise this nearly 2-mile-long canopy tour. Guides share information about the surrounding landscape, ecosystems, and geology of the WRNF.

e) Adventure Courses

Gore Range, Pine Cone and Holy Cross adventure courses, each with varying ability levels (including a kids' course), are located at Adventure Ridge. Guests, while wearing a safety harness and helmet, navigate a series of aerial features such as ropes, bridges, and logs.

f) Summer Tubing

Two tubing areas are located adjacent to Eagle's Nest. The Eagle's Nest Tubing is a 550-foot-long summer tubing hill, while the Marmot Mini Tubing is a shorter track with bank turns designed for kids. Guests can ride the adjacent carpets back to the top.

g) Forest Flyer Mountain Coaster

The Forest Flyer Mountain Coaster is a gravity-driven ride with carts traveling on a fixed track for a total descent of 3,400 feet. The ride is located in the tree island separating the Bwana and Simba trails, and is accessed via the Eagle Bahn Gondola and a 5-minute walk west of the Adventure Ridge area.

h) Golden Eagle Zipline

The Golden Eagle Zipline is a 1,200-foot, four-line zipline. It is located next to the Eagle's Nest Tubing Hill.

i) Little Eagle Zipline

The Little Eagle Zipline is a 200-foot-long single-line kids zipline. It is located near the top terminal of Little Eagle Lift.

j) Paramount Peak Climbing Wall and Bungy Trampoline

The Paramount Peak Climbing Wall and bungy trampoline are both located near Eagle's Nest. The climbing wall is 36 feet tall and designed for all ability levels. On the bungy trampoline, kids and adults of all ability levels can bounce and flip 25 feet in the air while harnessed to two bungy cords.

k) Disc Golf Course

The 18-hole disc golf course is offered as a free activity. It is located at the top of the mountain near Eagle's Nest. Guests may choose to hike to the course or ride the Eagle Bahn Gondola.

l) Nature Discovery Center

Located in a yurt at Adventure Ridge, the Nature Discovery Center is a series of natural history exhibits about wildlife and plants. The Center is operated in association with Walking Mountain Science Center and offers a variety of programs throughout the year.

m) Other Activities and Programs

A variety of other activities are offered at Vail, including scenic gondola rides, observation deck, multi-use decks and on-mountain dining. Vail also offers guided hike and bike tours and an interpretive trails program in conjunction with Walking Mountains.

4. MULTI-SEASON RECREATION; SUMMER "ACTIVITY ZONES"

a) Recreation Zone Designations

As discussed in Chapter 2, four characteristics (*access*, *remoteness*, *naturalness*, and *infrastructure*) are used to define the summer and multi-season setting and guest experience within different landscapes across the SUP area at Vail.

The first step in the zone designation process was a careful consideration of the setting and the proximity to infrastructure supporting snow sports. Features such as watersheds, topography, vegetation structure, level of existing disturbance, and existing infrastructure were considered in establishing zone boundaries across the entire SUP area. The exercise resulted in the creation of 27 areas, unique in their location and/or features. The second step of the zone designation process was applying a score for each characteristic on a scale of 1 to 5, with 1 being the most disturbed and 5 being the least disturbed. Figure 12 illustrates the recreation zone designations within the Vail SUP area.

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

Zone 1

Setting

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

- Road access and roads are prevalent;
- Considerable human activity (people recreating and/or resort operations) occurs within and proximate to this setting—there is little to no feeling of remoteness;
- Terrain modifications (ground disturbance and vegetation removal) dominate the area; and
- Infrastructure, including chairlifts and buildings, are present.

Three areas (Areas 6, 14, and 15)—the PHQ/Buffalo's mid-mountain area, the Mid-Vail mid-mountain area, and the Eagle's Nest/Adventure Ridge area—have been designated as Zone 1.

Desired Experiences

Within Zone 1, guests are expected to encounter a high concentration of other guests. The level of development will reflect the current setting and function of these areas as hubs of activity and portals to other activities across the ski area. Most guests visiting Zone 1 will access it existing and planned trails from the base areas or by the Eagle Bahn Gondola. Within Zone 1, the concepts in the Forest Service's Built Environment Image Guide will be followed to ensure that appropriate design guidelines for both landscape architecture and built architecture are followed. Zone 1 abuts Zone 2 on the fringes of developed on-mountain areas. This allows guests to experience a gradual transition between the built environment (Zone 1) and more-natural areas that still contain activities and facilities blending with the area's natural setting (Zone 2). Zone 1 could offer interpretive opportunities in a developed setting, with goals of enhancing guests' understanding of the natural environment as they prepare to venture into less-developed areas. The educational focus will continue to leverage existing partnerships with Vail and other organizations.

Compatible Activities and Facilities

Services and activities within a Zone 1 setting may include food and beverage operations,

special event venues, shelter and emergency services, restroom facilities, landscaped areas, and other activities. At Vail, on-mountain Zone 1's serve as the activity hub from which guests will access surrounding activities and refuel between activities. Typically, guests will first access these on-mountain areas after riding the Eagle Bahn Gondola; however, guests may also access a Zone 1 located on-mountain under their own power from the surrounding trails network. Adventure Ridge already hosts several multi-season recreational activities, including hiking, a mountain coaster, summer tubing, biking, and special events.

Activities on NFS lands within a Zone 1 may include an alpine coaster, challenge/aerial adventure courses, canopy tours, biking trails, a biking skills park, hiking trails, special events and access pathways to ziplines, summer tubing, fishing, temporary activities (such as outdoor concerts and kid's playground), and other natural resource-based recreation activities. The activities will not compromise the existing skiing, which occurs in Zone 1 during winter months. Furthermore, the activities will be compatible with the surrounding level of development and built environment, including structures, parking lots, etc.

Zone 2

Setting

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

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

Seven areas within Vail's operating boundary have been designated as Zone 2. These areas act as a buffer between the built environment and a more natural forest setting.

Desired Experiences

Most guests will access Zone 2 from the Vail Village and the Lionshead base areas via lift infrastructure or the extensive trail network. Guests choosing to utilize the summer operation of Eagle Bahn Gondola to access existing on-mountain trailheads, will transition from a Zone 1 into a Zone 2. In moving between these zones, guests will transition from the built environment to a setting characterized by both developed and passive activities proximate to existing infrastructure and facilities, but still offering a more natural feel. For many guests of Vail, this may be their first real experience in the mountains, and providing a safe, comfortable environment for exploration is critical to the success of Zone 2 and the overall plan. Zone 2 provides the initial opportunity for guests to learn about and engage in their natural surroundings through hands-on recreational, interpretive, and educational offerings. In addition to hosting activities such as guided hikes, a zipline/canopy tour, and various trails, Zone 2 serves as a buffer between higher levels of development within Zone 1 and private lands, and the more natural settings of Zones 3 and 4.

Compatible Activities and Facilities

Passive activities within Zone 2 include educational/interpretive opportunities, sightseeing and light hiking, or simply visiting with friends and family. Zone 2 will provide enhanced sightseeing opportunities when compared to Zone 1, as these areas typically occur at higher elevations and are located further within the mountain landscape. Activity offerings include access to ziplines and canopy tours, guided hikes and interpretative opportunities, extended hiking trails, biking trails, challenge/aerial adventure courses, fishing, and other natural resource-based activities.

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

Zone 3

Setting

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

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

Nine areas within Vail's operating boundaries were designated as Zone 3. For Vail, Zone 3's are adjacent to Zone 2's through Zone 5's as guests move further away from the built environment and into the natural forest setting. These nine areas share very similar characteristics of minimal ski area infrastructure and are higher in elevation providing views of the Eagle Valley, Holy Cross, and the surrounding landscape.

Desired Experiences

The majority of guests will access Zone 3 from private lands via the existing trails network and/or on-mountain activity hubs such as Eagle's Nest and Mid-Vail area. Once in Zone 3, guests will have a variety of opportunities to engage in their surroundings in a more natural and remote environment.

The desired experience in Zone 3 will be achieved through the activities offered there. Guests will enjoy nature hikes with interpretive signage that will provide education on their biological, cultural, and historical surroundings. Guests will hike to locations with views up and down the mountain. Opportunities for self-guided tours, or dispersed travel also exist. Guests will ride biking trails through forested settings and learn the importance of forest health and stewardship. Biking trails would be less developed trails (i.e., few constructed features) and the trail network would be less dense compared to Zone 2. In Zone 3, guests may also ride ziplines and canopy tours over and through the canopy to experience views of Mount of the Holy Cross and its natural surroundings.

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

Compatible Activities and Facilities

Activities include biking trails, scenic chairlift rides, hiking trails, multiple-use trails, canopy tours, challenge/aerial adventure course and other similar natural resource-based activities. Select activities such as interpretive tours and canopy tours may occur on a year-round basis. Activities within Zone 3 will not require substantial modifications to natural topography to facilitate construction. Existing ski area development (ski trails and chairlifts) exist to varying degrees within Zone 3, and potential

seasonal and year-round facilities and activities will be consistent with the level of existing development for the ski area operation.

Zone 4

Setting

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

- Little to no road access occurs;
- Human activity (people recreating and/or resort operations) is distant or out of sight facilitating a high degree remoteness;
- The area is completely natural or has limited disturbance; and
- Infrastructure is present, including a chairlift and small buildings.

Five areas within Vail's SUP area were designated as Zone 4. These areas contain a variety of biological and topographical characteristics: dense/large tree islands, challenging/isolated topography, minimal trail access, negligible ski resort development, "closed" areas, void of notable infrastructure/facilities, and are predominately located on the furthest and most isolated extents of this SUP area. Even though there is minimal infrastructure and industrialization in these areas, they are classified as a Zone 4 due to the existing disturbance such as visibility of nearby infrastructure/environment modifications, ski area roads, and the proximity to adjacent highly used recreation areas. Overall, natural characteristics and features are dominant in these areas beyond all ski area modifications.

Desired Experiences

In Zone 4, guests connect with the more natural setting in a relatively undisturbed environment. Dispersed hiking opportunities allow guests to experience and interpret areas where natural processes are more evident, allowing for educational opportunities that are not available in more developed zones. Maintaining a more remote setting with opportunities for solitude is crucial to maintaining guests' expectations for this zone.

Compatible Activities and Facilities

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

Zone 5

Setting

The setting in Zone 5 is undisturbed by ski area activities. Zone 5 includes high alpine environments and large, intact vegetation habitats. Very few people recreate in these areas of the SUP boundary and adjacent private lands. No ski area roads or infrastructure are present in Zone 5. Within the context of the overall SUP area, the following summarizes the setting in Zone 5:

- No ski area roads are present;
- Human activity (people recreating and/or resort operations) is predominately out of sight, so one would feel completely remote;
- Area is undisturbed by ski area activity; and
- Ski area infrastructure is only visible at a distance.

Zone 5 is the least developed of all zones. Three areas within the Vail SUP area and adjacent private lands have been classified as Zone 5.

Desired Experiences

In Zone 5, guests connect with the more natural setting in a disturbed environment. Dispersed hiking opportunities allow guests to experience and interpret areas where natural processes are more evident, allowing for educational opportunities that are not available in more developed zones. Maintaining a remote setting

where guests can experience a feeling of remoteness and solitude within the natural environment.

Compatible Activities and Facilities

Compatible activities promote the natural surroundings and inform guests of similar environments throughout the National Forest. Activities include slower-moving actions to match the setting and character, which provide even greater opportunities for environmental education and exposure to unique environments. Activities within Zone 5 will require minimal or no site modification to maintain the current level of naturalness. In this zone, the low density of guests is expected to maintain the feeling of remoteness.

Table 12 describes the characteristics of each zone and the resulting scoring of each condition. Table 13 summarizes the zone designation of each area at Vail.

TABLE 14. ZONE CHARACTERISTICS

Zone Characteristics	Scores
Access	
Road Access within Area	1
Limited Road Access/Trails	2
No Road Access	3
Remoteness	
Proximate to Human Activity	1
Distant Sight of Human Activity within SUP	2
Out of Sight of Human Activity within SUP	3
Naturalness	
Heavily Disturbed by Ski Area Activity	1
Moderately Disturbed by Ski Area Activity	2
Undisturbed by Ski Area Activity	3
Infrastructure	
Adjacent to 2 or More Ski Area Infrastructure	1
Ski Area Infrastructure in Area	2
Out of Sight Ski Area Infrastructure	3
Minimum Score Possible	*4*
Maximum Score Possible	*12*

Zones	Score Range
1	4
2	5 to 6
3	7 to 9
4	10 to 11
5	12

TABLE 15. VAIL SUMMER USE ZONES – EXISTING CONDITIONS

Area Boundaries	Score	Appropriate Zone
Area 1		
Access	3	
Remoteness	3	
Naturalness	3	
Infrastructure	3	
Total Score	12	Zone 5
Area 2		
Access	2	
Remoteness	2	
Naturalness	3	
Infrastructure	3	
Total Score	10	Zone 4
Area 3		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3
Area 4		
Access	2	
Remoteness	2	
Naturalness	1	
Infrastructure	1	
Total Score	6	Zone 2
Area 5		
Access	1	
Remoteness	2	
Naturalness	2	
Infrastructure	1	
Total Score	6	Zone 2

Area Boundaries	Score	Appropriate Zone
Area 6		
Access	1	
Remoteness	1	
Naturalness	1	
Infrastructure	1	
Total Score	4	Zone 1
Area 7		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	3	
Total Score	9	Zone 3
Area 8		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	1	
Total Score	7	Zone 3
Area 9		
Access	3	
Remoteness	3	
Naturalness	3	
Infrastructure	3	
Total Score	12	Zone 5
Area 10		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3

TABLE 15. VAIL SUMMER USE ZONES – EXISTING CONDITIONS (CONT'D)

Area Boundaries	Score	Appropriate Zone
Area 11		
Access	1	
Remoteness	1	
Naturalness	2	
Infrastructure	2	
Total Score	6	Zone 2
Area 12		
Access	1	
Remoteness	1	
Naturalness	2	
Infrastructure	1	
Total Score	5	Zone 2
Area 13		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	3	
Total Score	9	Zone 3
Area 14		
Access	1	
Remoteness	1	
Naturalness	1	
Infrastructure	1	
Total Score	4	Zone 1
Area 15		
Access	1	
Remoteness	1	
Naturalness	1	
Infrastructure	1	
Total Score	4	Zone 1

Area Boundaries	Score	Appropriate Zone
Area 16		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3
Area 17		
Access	2	
Remoteness	2	
Naturalness	3	
Infrastructure	3	
Total Score	10	Zone 4
Area 18		
Access	2	
Remoteness	2	
Naturalness	3	
Infrastructure	3	
Total Score	10	Zone 4
Area 19		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3
Area 20		
Access	2	
Remoteness	1	
Naturalness	2	
Infrastructure	1	
Total Score	6	Zone 2

TABLE 15. VAIL SUMMER USE ZONES – EXISTING CONDITIONS (CONT'D)

Area Boundaries	Score	Appropriate Zone
Area 21		
Access	3	
Remoteness	2	
Naturalness	3	
Infrastructure	3	
Total Score	11	Zone 4
Area 22		
Access	3	
Remoteness	2	
Naturalness	3	
Infrastructure	3	
Total Score	11	Zone 4
Area 23		
Access	3	
Remoteness	3	
Naturalness	3	
Infrastructure	3	
Total Score	12	Zone 5
Area 24		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3
Area 25		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3

Area Boundaries	Score	Appropriate Zone
Area 26		
Access	1	
Remoteness	2	
Naturalness	2	
Infrastructure	1	
Total Score	6	Zone 2
Area 27		
Access	1	
Remoteness	2	
Naturalness	2	
Infrastructure	1	
Total Score	6	Zone 2

CHAPTER FIVE

PREVIOUSLY APPROVED PROJECTS

The projects detailed in this section have been previously approved, but have not yet been implemented. Refer to Figures 12 and 13 for previously approved, not yet implemented project locations. It is anticipated that the majority of these projects will ultimately be implemented as capital for on-mountain improvements becomes available. Prior to project implementation the Forest Service will review project consistency with the 2002 Forest Plan standards and guidelines and determine if additional analysis is warranted due to changed environmental and social conditions, and/or new planning and regulatory guidance Applicable approvals are contained in the following documents:

- 1996 Category III Environmental Impact Statement, Record of Decision
- 2006 Vail Ski Area West Lionshead Lift Environmental Assessment, Decision Notice and Finding of No Significant Impact
- 2009 Vail Ski Area Improvements Project Environmental Impact Statement, Record of Decision
- 2011 Vail Ski Area Forest Health Project Environmental Assessment, Decision Notice and Finding of No Significant Impact
- 2012 Vail Mountain Resort Summer Improvements Categorical Exclusion, Decision Memo
- 2014 Vail Mountain Recreation Enhancements Project Environmental Impact Statement, Record of Decision
- 2019 Vail Mountain Resort Golden Peak Improvements Project Enviornmental Impact Statement, Record of Decision.
- 2019 Vail Mountain Resort Snowmaking Project Environmental Assessment, Decision Notice and Finding of No Significant Impact.

A. LIFTS

1. WEST LIONSHEAD LIFT

As part of the 2006 Vail West Lionshead Lift Environmental Assessment, Decision Notice and Finding of No Significant Impact (2006 DN and FONSI), a lift was planned to originate in West Lionshead adjacent to the Eagle River Water and Sanitation District building on S Frontage Road and terminate just above and west of Chair 26 (Pride Express). The Decision approved the installation of either a high-speed detachable chairlift or a gondola, not to exceed the hourly capacity of 2,600 pph. The lift or gondola will provide out of valley transport from proposed transit, parking, and lodging facilities.

B. TERRAIN

1. GOLDEN PEAK IMPROVEMENTS

As part of the 2019 Golden Peak Improvements Projects, 42 acres of new ski trails were approved. To date, approximately 34.4 acres of terrain and snowmaking coverage has been constructed, with 7.6 acres of previously approved terrain not yet constructed.

C. SNOWMAKING

1. SNOWMAKING INSTALLATION ON SIMBA

As part of the Vail Improvements Project Environmental Impact Statement and 2009 ROD, the Forest Service approved the installation of snowmaking infrastructure to provide 33 areas of coverage to the middle and upper portions of *Simba*. These areas of *Simba* have long presented maintenance problems due to snowcat/skier wear on the snow surface, especially during early season conditions and in lean snow years. Installation of snowmaking infrastructure would require 4.8 acres of temporary ground disturbance. The middle face of *Simba*, just above the bottom of the Chair 26 (Pride Express), had snowmaking installed during the summer of 2016.

2. SNOWMAKING INSTALLATION ON FRONT SIDE OF VAIL

As part of the 2019 Snowmaking Project Environmental Assessment, 262 acres of expanded snowmaking coverage, 32.5 miles of new or upgraded snowmaking pipe and 14 new valve stations were approved. The majority of the approved snowmaking coverage is located on the upper portion of the Front Side of Vail with the new and upgraded snowmaking pipe needed across Vail's Front Side to improve pressures and overall operational efficiency within the snowmaking system. The previously approved snowmaking coverage is shown on Figure 14. To date, 81 acres of snowmaking coverage of the 262 previously approved acreage has been constructed, resulting in 181 acres previously approved for snowmaking coverage, but not yet constructed.

D. FACILITIES

1. WEST LIONSHEAD LIFT MAINTENACE FACILITY

A gondola cabin storage and maintenance facility at the top of the West Lionshead Lift was approved in the 2006 DN and FONSI for the Proposed West Lionshead Lift Environmental Assessment. The building can be no larger than 3,600 square feet and would be approximately as tall as the terminal building (25 feet). It would be located near the West Lionshead Lift top terminal. A precise location was not determined at the time of approval; however, adequate space is available on the edge of the Simba trail that would allow this structure to be constructed in a previously disturbed area. The purpose of this building is to extend the lives of individual gondola cabins by storing them when not in use and thereby reducing the visual impact to summer visitors. This facility will only be built if the West Lionshead Lift is constructed.

2. SNOWCAT MAINTENANCE FACILITY

In the 2009 ROD, a new 6,000-square foot snowcat maintenance garage was approved. It is planned to be located adjacent to, and uphill of, the existing facility located between Eagle's Nest and Mid Vail. The structure will be screened by vegetation and sited below ridgelines so the Scenic Integrity Objective of very low can be maintained. The existing Snow Summit Cat Garage will be retrofitted to provide a more centrally-located, on-mountain facility for lift maintenance.

3. GOLDEN PEAK FACILITIES IMPROVEMENTS

As part of the 2019 Vail Golden Peak Improvements Project, composite toilet restrooms, a race building, two race start houses, an underground diesel fuel storage tank, and snowcat maintenance shop were approved.

The restrooms were approved at the top of the Golden Peak Surface Lift to be two separate structures roughly 8 feet by 8 feet in size). The restrooms would include composting toilets, which require 500-gallon water tanks for efficient operation.

A race building was approved to provide space for coaching, and storage for safety fencing and other equipment is proposed near the bottom of the proposed mogul course, with an approximate area of 1,500 square feet (30 feet by 50 feet).

Two race start houses were approved, each approximately 75 square feet. They were approved to be constructed at the top of the Downhill course and at the top of the slalom course.

A new underground diesel fuel storage tank and snowcat maintenance shop was approved on the southwest side of the Riva Bahn Express (Chair 6) mid-station. The fuel tank would have a capacity of up to 30,000 gallons and would store fuel for use on Golden Peak for the maintenance of competition areas and terrain parks. The maintenance building would be approximately 3,000 square feet (50 feet by 60 feet), large enough to accommodate one snowcat and maintenance operations.

E. SUMMER ACTIVITIES

1. 2014 VAIL MOUNTAIN RECREATION ENHANCEMENTS PROJECT

As part of the *2014 Vail Recreation Enhancements Project Environmental Impact Statement, Record of Decision* (2014 ROD), the Forest Service approved a suite of summer projects. The following projects were approved, but have not yet been implemented.

a) Front Side Canopy Tour

The Front Side Canopy Tour was approved to be located from Mid-Vail to the base of Gondola One. It would consist of ten interconnected ziplines over 3.2 miles. The longest segment (between towers 5 and 6) is planned to be approximately 3,300 feet long, carrying riders over 500 feet above the ground. A shelter is approved to be constructed halfway along the canopy tour for use during inclement weather. Construction of the Front Side Canopy Tour would result in approximately 6 acres of disturbance (including grading and/or vegetation removal).

b) Riparian Experience

The Forest Service approved the intended Riparian Experience to be a "hands-on" interpretive and educational experience for children. It is designed to be a 2,250-square foot natural area located on the east side of Eagle's Nest, just west of the top of Little Eagle Express. It would allow children to observe, investigate and deepen their understanding of the basic hydrologic processes in a natural-

looking setting. The Riparian Experience would be constructed using a mix of materials including stone, metal, and wood. This constructed water feature may include check dams and water wheels in braided, in-ground streams. A self-contained water recirculating system that ties into the existing system at Eagle's Nest will minimize water usage associated with this approved project.

c) Modified Horse Trail in Game Creek Bowl

Currently, guided horseback tours take guests from Adventure Ridge through the Game Creek Bowl and back using mountain roads. In order to provide a more natural and engaging experience, a singletrack trail is approved adjacent to the existing roads. The modified equestrian trail would be approximately 4 feet wide and would require approximately 1 mile of new trail construction, creating approximately 0.5 acre of ground disturbance.

d) Aerial Adventure Course

An aerial ropes and zipline course was approved in a forested area north and west of Eagle's Nest. This project would be located on 0.5 acre. This aerial course would include a variety of features suitable for children, such as small towers, bridges, slides and ziplines. Primarily natural materials and colors would be used. After being outfitted with equipment and an orientation session, children would be able to act independently to overcome obstacles in a natural environment.

F. VEGETATION MANAGEMENT

As part of the 2011 Vail Ski Area Forest Health Project Environmental Assessment, Decision Notice and Finding of Significant (2011 DN and FONSI), vegetation treatment was approved on 984 acres across Vail. Tree stands were broken into four types and possible silvicultural prescriptions were described as five different types, based on the amount of lodgepole pine and degree of mortality in each stand. Vail Mountain has been following up on vegetation management, hazard tree removal, and their healthy forest plan as a part of their summer construction plan, through identifying and working on areas of high priority. In addition to their on-mountain efforts, Vail has completed 34 acres of mitigation on private land in the Game Creek Bowl. Vail intends to continue to prioritize vegetation management. Refer to Figures 1-1, 2-1 and 2-2 in Appendix B (Vail Ski Area Forest Health Project EA) for exact locations of stand treatments within Vail's SUP.

G. PREVIOUSLY CONSIDERED PROJECTS

While the below two projects were analyzed within the 1996 Category III Environmental Impact Statement Record of Decision, Vail and the Forest Service both acknowledge the need for new environmental analysis prior to project implementation due to the amount of time which has lapsed between the project's consideration and Vail's desire to implement them.

1. PETE'S STASH

As part of the 1996 Vail Category III Ski Area Development Environmental Impact Statement Record of Decision (1996 ROD), 597 acres of ski terrain were approved to be constructed in Blue Sky Basin. Of that, 460 acres have been constructed to date, leaving approximately 135 acres to be constructed. Given that 27 years have lapsed since the original approval of this project, Vail realizes that the NEPA science needs to be revisited regarding changes in wildlife habitat in the area. While Vail does not have plans to construct this previously considered terrain in the immediate future, they may choose to do so during the lifespan of this MDP. This terrain expansion would create a positive impact on the guest experience by spreading guests out on underutilized terrain within Vail's permit area through a mix of intermediate runs and natural gladed areas. The trail alignments are shown on Figure 13. Vail will consult with the Forest Service to determine additional review needed prior to construction of these trails.

2. BLUE SKY BASIN RESTAURANT

A 20,000-square foot restaurant was considered adjacent to Two Elk Creek just west of Pete's Bridge. Vail may construct the Blue Sky Basin restaurant in the future, but has no plans to construct this restaurant during the life of this MDP. There is existing demand for this facility and will be discussed in Chapter 6.

TABLE 16. MASTER DEVELOPMENT PLAN: PREVIOUS NEPA APPROVALS TRACKING MATRIX

Project	Date and Title of Approving Document	Year Implemented
Lifts		
West Lionshead Lift	2006 DN and FONSI	
Terrain		
Golden Peak Terrain - 12 acres	2019 ROD	
Snowmaking		
Snowmaking Installation on *Simba - 33 acres*	2009 ROD	
Snowmaking Installation on Golden Peak - 12 acres	2019 ROD	
Snowmaking Installation on Front Side of Vail - 171 acres	2019 DN and FONSI	
Facilities		
West Lionshead Lift Maintenance Facility	2006 DN and FONSI	
Snowcat Maintenance Facility	2009 ROD	
Golden Peak Facilities Improvements	2019 ROD	
Activities		
Eagle's Nest Zip Adventure	2012 DM	
Front Side Canopy Tour	2014 ROD	
Riparian Experience	2014 ROD	
Modified Horse Trail In Game Creek Bowl	2014 ROD	
Aerial Adventure Course	2014 ROD	
Vegetation Management		
Vegetation treatment on 984 acres	2011 DN and FONSI	
Previously Considered		
Terrain: Blue Sky Basin - 135 acres	1996 ROD	
Blue Sky Basin Restaurant	1996 ROD	

CHAPTER SIX

UPGRADE PLAN

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

The Upgrade Plan is depicted on Figures 12 through 16.

A. SUMMARY

This Upgrade Plan focuses on the continual evolution of Vail through a number of improvement and enhancement projects. Vail has been recognized as a world class resort and continually strives to deliver an extraordinary experience for those visiting the resort. These upgrade projects were identified through the planning process as areas in need of improvement or that would enhance the guest experience. With this MDP, Vail wishes to continue meeting those same goals and objectives by completing the remaining far-reaching development plans envisioned as part of the 2007 Vail Resort Master Development Plan Update and 2018 Vail Resort Master Development Plan Update. This Upgrade Plan includes the following elements, which will be discussed at length throughout this chapter.

- Three new lifts are planned at Vail. On the Front Side of Vail, the Trans Montane chairlift is planned from the ABC parking lot adjacent to Gondola One bottom terminal to the Trans Montane ski run and the previously approved West Lionshead is planned. One new chairlift is planned in the Back Bowls: Mongolia Express is planned to extend from a bottom terminal near Two Elk Creek to the ridgeline above the existing Mongolia Platter.
- Eleven chairlifts are planned to be replaced to improve reliability and transport across the mountain. The chairlifts planned for replacement include Chair 2 (Avanti Express), Chair 3 (Wildwood Express), Chair 4 (Mountain Top Express), Chair 6 (Riva Bahn Express), Chair 8 (Born Free Express), Chair 15 (Little Eagle), Chair 19 (Eagle Bahn Gondola), Chair 20 (Cascade Village), Chair 21 (Orient Express), and Chair 36 (Teacup Express). If the Mongolia Express is constructed, the Mongolia Platter would be removed, otherwise it would be upgraded to a newer surface lift.
- Approximately 160 acres of new developed terrain is planned in the Back Bowls and Blue Sky Basin. Of this, 135 acres of this terrain are previously-approved trails in Pete's Bowl and Earl's Bowl. The remainder are skiways intended to improve circulation at the base of Skyline Express and Teacup Express and a groomed traverse off of Earl's Express. With the installation of Mongolia Express, aproximately 195 acres of terrain are recategorized from undeveloped to developed terrain. Minor trail improvements and grooming may occur on these existing trails that are less utilized due to the lack of lift service in the area.
- The creation of a new low intermediate run served by Chair 26 to facilitate progression from novice terrain. The new run will largely absorb existing terrain, but approximately 10 acres will need to be constructed.
- Expansion of the administrative boundary within the existing SUP boundary to include: West Earl's Bowl, East Pete's Bowl, and Mongolia Bowl. These areas together would add 925 acres to the administrative boundary.

- New snowmaking coverage is planned on 171 acres of trails.
- Three new structures are planned to be constructed or renovated: a 10,000-square foot restaurant west of the top terminal of Chair 9; a 12,000-square foot mountain operations facility at Snow Summit (6,000 square feet have been previously approved); and an Umbrella Bar structure at Mid Vail; Four guest service facilitiy improvements are planned: a renovation of Eagle's Nest with the planned replacement of Gondola 19, expanding guest service space at Wildwood; a permanent structure to replace the temporary 10th Deck structure; and a 120-square foot restroom facility at the top of the Forest Flyer Mountain Coaster.
- Construct the Minturn Mile Bypass around the top of Chairs 4, 5, 11 and Buffalo's Restaurant. A bypass route around the summit area will allow for mountain operations to continue fall preparation of the mountain while snowmaking is underway in the early season. The existing steep section of road needs modification to reduce sedimentation and improve access to this area from Eagle's Nest.
- Waterline from PHQ to Two Elk and electrical line from the top terminal of Chair 21 (Orient Express) to the top terminal of the planned Mongolia Express.
- Miscellaneous grading on 23 acres across Vail to improve skier circulation.
- Additional hiking and biking trails are planned across the mountain (9 miles of hiking trails, 37 miles of biking trails, and 3 miles of multi-use trails).

The net result of implementing all planned projects would not increase Vail's Manage-To number of 19,900 guests per day. These improvements would improve circulation and guest experience at Vail Mountain Resort.

B. UPGRADED LIFT NETWORK

The planned upgrades to the lift network would increase the existing lift network capacity at Vail from 23,690 guests (refer to Chapter 4 for details regarding existing calculation) to 25,420 guests. The increase in lift capacity helps to determine where guests are on the mountain at-one-time and is not necessarily a reflection of the daily visitation. As mentioned in Chapter 2 (refer to Chapter 2, Section D for detailed discussion of capacity and Manage-To numbers), Vail desires to maintain certain capacities, particularly the lift network capacity, in excess of the Manage-To threshold in order to ensure a high-quality guest experience. Managing the resort in this way results in shorter lift lines (particularly during morning access periods), terrain variety that caters to the majority of the ski/snowboard market, and lift, terrain, and guest service levels that provide a consistently great guest experience for all levels of guests. This is consistent with the resort's goal of remaining the industry leader in quality. Table 17 details the calculated lift network capacity under upgrade conditions.

1. NEW LIFT INSTALLATIONS

Three new chairlifts are planned at Vail: The Trans Montane Lift and West Lionshead Lift on the Front Side; and Mongolia Express in the Back Bowls.

The Trans Montane Llift is planned to originate from the ABC lot in Vail Village. From the lot, it will ascend to the area where Riva Ridge and Trans Montane runs merge. This lift will provide a new access point from the base area, relieving pressure on Gondola One and Chair 6. It will also facilitate access to Chair 11 (Northwoods Express). Its primary function is to transfer guests and as a result, so it does not greatly contribute to an increase in capacity.

Previously approved in the 2006 DN/FONSI, the West Lionshead Lift/Ever Vail Gondola would originate in the West Lionshead area near the old Amoco Gas Station site and terminate slightly uphill from the bottom of Chair 26. The lift would create a new access point, enhancing access to the western portion of the mountain especially during the morning staging period. Guests staying in the West Lionshead area as well as guests riding public transit could access the mountain directly without traveling to another base area. Providing a lift in this area would decrease congestion at Lionshead and Cascade Village base areas, as well as increase utilization of Pride Express. Since this lift would be used primarily for transporting guests rather than repeat skiing, there would be little impact to Vail's lift capacity.

Since the DN/FONSI, Vail has considered a two-stage gondola as an alternative option that would replace Chair 26. The lift would begin in the same area as the original option and ascend to the location of the bottom terminal of Chair 26. From here, there would be a turn-station, allowing guests to load, unload, or continue riding the gondola to Eagle's Nest. This option has not been previously approved. Analyses in this document focus on the previously approved option.

A new chairlift is planned in Mongolia Bowl, the eastern most part of Vail's SUP. The Mongolia Express alignment would start near Two Elk Creek and end on the ridgeline above Mongolia Platter, not on the peak. Placing the top terminal on the ridge instead of the summit allows guests to avoid excessive winds, as well as negate viewshed concerns looking back to the highway and East Vail. The new lift design capacity is planned to be 2,400 pph. Mongolia Bowl is currently challenging to reach due to the amount of traversing required to get to and from the area. As a result, the terrain is underutilized. The chairlift would provide better access to more than 650 acres of skiable terrain in both Mongolia and Siberia bowls. Grading and terrain modifications may be necessary. With the construction of the Mongolia Express, the existing Mongolia Platter is planned to be removed. Otherwise, it would be replaced with a newer surface lift.

2. LIFT REPLACEMENTS

Eleven chairlifts are planned to be replaced to improve reliability and transport across the mountain.

Chair 2 (Avanti Express), currently a detachable six-person lift, is planned to be replaced with a detachable eight-person lift. Chair 2 services popular intermediate terrain and is located up-mountain between the Vail Village and Lionshead base areas. Increasing its capacity will reduce crowding and lift lines and help improve cross mountain circulation.

Chair 3 (Wildwood Express) is planned to be replaced with a detachable quad or six-person lift with a capacity of 2,400 pph. If the chair is replaced with a six-person lift, one option may be to replace it with the existing Chair 4 (Mountain Top Express) after its replacement. The existing detachable quad chairlift is over twenty years old. Chair 3 is one of two chairlifts in the high traffic Mid Vail zone. Reliable service is critical in this area.

Chair 4 (Mountain Top Express) is planned to be replaced with a new detachable eight-person lift. Chair 4 is located adjacent to Mid Vail and regularly sees consistent traffic throughout the day from skiers

and riders circulating across the mountain, using Mid Vail for guest services or repeat skiing the popular novice and intermediate terrain. Installing an eight-passenger chairlift will reduce lift lines and improve the learning experience for novice to intermediate skiers in that area.

Chair 6 (Riva Bahn Express) is planned to be replaced with a gondola. The existing detachable quad chairlift is over twenty years old. Chair 6 is the only chairlift out of the Golden Peak base area. Reliable service is critical in this area. The new gondola will be extended up to Two Elk Lodge and have a mid-station near the top of Whippersnapper at the existing mid-station. Due to the extended alignment, it will have an enhanced role in transporting guests to the back bowls rather than having guests access this terrain using Chair 11.

Chair 8 (Born Free Express) is planned to be replaced with a new detachable six person lift. The existing detachable quad chairlift is over thirty years old. This chairlift serves as uphill access to the lower Lionshead area and adds redundancy in the lift network to the Eagle Bahn Gondola.

Chair 15 (Little Eagle) is planned to be replaced with a new detachable chairlift of the same capacity and a slightly different alignment to better serve the existing beginner terrain area and reduce crowding near the Thunder Cat Cave Carpet and Lightning Coyote Carpet. This would likely displace the existing Eagle's Nest Tubing Hill and Golden Eagle Zipline.

Gondola 19 (Eagle Bahn Gondola) is planned to be replaced with a new gondola with a capacity of 3,200 pph. The existing Eagle Bahn gondola is nearly thirty years old and nearing the end of its useful life. The replacement gondola will exist in the same alignment. The upper terminal is planned to be expanded to accommodate for additional cabin storage and a food commissary on the lower level.

Chair 20 (Cascade Village) is planned to be replaced with a new detachable quad either in the same alignment or extended. If Chair 26 is removed, then Chair 20 would be realigned to have a mid-station above upper Post Road to provide access to Chair 2with a top terminal adjacent to Eagle's Nest. In this case, the mountain coaster would have to be reconfigured or moved. If Chair 26 is left in place, Chair 20 will be extended to Eagle's Nest with a mid-station on lower Post Road. In both scenarios, Chair 20 would have a download. The existing detachable quad chairlift is over 30 years old. The lift's primary function is to connect Cascade Village to the rest of the terrain and lift network.

Chair 21 (Orient Express) is planned to be replaced with a new detachable six person lift. The existing detachable quad chairlift is over thirty years old. This chairlift is the only access to Mongolia, Siberia, and Oriental bowls, so reliable service is critical to access the back bowls of the resort.

Chair 26 (Pride Express) is planned to be replaced with a new detachable quad in a similar alignment. The existing detachable quad is thirty years old. As the westernmost chairlift servicing significant terrain, it is important for this lift to function well.

Chair 36 (Teacup Express), currently a detachable quad, is planned to be replaced with a new detachable six-person lift. This lift provides circulation between Sun Up and Oriental bowls and from Blue Sky Basin to the frontside. The existing chairlift is nearly 25 years old. It is one of the main lifts used to return to the Front Side, so increasing its capacity will reduce lift lines and crowding at its bottom terminal.

In addition to the eleven lift upgrades, the existing Chair 22 Mongolia Platter is planned to be replaced with a new surface lift prior to the construction of the Mongolia Express. When the Mongolia Express is constructed, the Mongolia Platter would be removed. The existing platter surface lift is over thirty years old. Mongolia Platter is one of the most eastern lifts and the only lift to service Vail's eastern most terrain, Mongolia Bowl. Refer to Figures 12 and 13 for location and acres of each improvement area.

TABLE 17. LIFT SPECIFICATIONS – UPGRADE PLAN

Lift Number + Name/ Lift Type	Top Elev. (ft)	Bottom Elev. (ft)	Vert. Rise (ft)	Plan Length (ft)	Slope Length (ft)	Avg. Grade (%)	Actual Design Capacity (pph)	Rope Speed (fpm)	Carrier Spacing (ft)	Manufacturer/ Year Installed
1 – Gondola One / G10	10,197	8,200	1,997	8,894	9,115	22%	3,600	1,200	200	POMA/2012
2 - Avanti Express/D8	10,596	9,131	1,465	6,423	6,588	23%	3,600	1,000	133	Upgrade
3 – Wildwood Express / D6	10,988	10,155	833	3,369	3,470	25%	2,400	984	148	Upgrade
4 - Mountain Top Express/D8	11,256	10,155	1,101	4,112	4,280	27%	3,600	1,000	133	Upgrade
5 – High Noon Express / D4	11,251	9,394	1,857	5,179	5,552	36%	2,400	1,100	110	POMA/2010
6 – Riva Bahn / G8	11,215	8,221	2,994	15,499	16,134	19%	3,600	984	131	Upgrade
7 - Game Creek Express/D6	10,981	9,800	1,181	4,195	4,434	28%	3,000	1,000	120	LPOA/2022
8 – Born Free Express / D6	9,713	8,120	1,593	5,863	6,076	27%	3,000	1,000	120	Upgrade
9 – Sun Up Express / D4	11,235	10,135	1,100	3,735	3,894	29%	2,400	1,000	100	POMA/2016
10 – Highline Express / D4	11,024	9,262	1,762	6,572	6,728	27%	2,400	1,000	100	POMA/2007
11 – Northwoods Express / D6	11,259	9,715	1,544	5,573	5,783	28%	3,000	1,000	120	POMA/2017
12 – Gopher Hill / C3	8,376	8,230	146	918	937	16%	1,600	400	45	Doppelmayr/2013
14 – Sourdough Express / D4	11,230	10,713	517	2,318	2,347	22%	2,400	1,000	100	POMA/2007
15 - Little Eagle/D4	10,395	10,207	188	1,294	1,314	15%	1,358	1,000	177	Upgrade
16 - Golden Peak T-Bar	10,052	9,360	692	2,188	2,320	32%	1,200	591	59	Doppelmayr/2019
17 - Sun Down Express/D4	10,986	9,498	1,586	5,783	6,087	27%	2,400	1,000	100	POMA/2022
18 – Lightning Coyote Carpet / C	10,290	10,254	36	358	360	10%	600	157	16	Magic Carpet/2002
19 - Eagle Bahn Gondola/G12	10,324	8,120	2,204	8,865	9,135	25%	3,600	1,200	160	Upgrade
20 - Cascade Village/D4	10,322	8,050	2,272	7,791	8,236	29%	1,800	1,000	133	Upgrade
21 – Orient Express / D4	11,390	9,825	1,565	7,496	7,658	21%	3,000	1,000	120	Upgrade

TABLE 17. LIFT SPECIFICATIONS – UPGRADE PLAN (CONT.)

Lift Number + Name/ Lift Type	Top Elev. (ft)	Bottom Elev. (ft)	Vert. Rise (ft)	Plan Length (ft)	Slope Length (ft)	Avg. Grade (%)	Actual Design Capacity (pph)	Rope Speed (fpm)	Carrier Spacing (ft)	Manufacturer/ Year Installed
22 – Mongolia Platter / P	11,755	10,180	1,575	5,567	5,786	28%	2,400	1,000	100	Planned
24 – Wapiti Platter / P	11,237	11,220	17	710	710	2%	701	413	35	POMA/1992
25 – Elvis Bahn Carpet / C	8,305	8,250	55	391	395	14%	600	157	16	Magic Carpet/2002
26 - Pride Express/D4	10,342	9,140	1,202	5,263	5,399	23%	2,400	984	98	Upgrade
27 – Black Forest Platter / P	9,726	9,325	401	1,877	1,919	21%	650	650	60	Doppelmayr/1995
28 – Adventure Ridge Carpet / C	10,410	10,310	100	452	463	22%	600	160	16	Sunkid/2010
29 – Rips Ride Carpet / C	8,254	8,230	24	300	301	8%	600	160	16	Sunkid/2005
33 – Golden Peak Carpet / C	8,270	8,250	20	200	201	10%	600	60	6	Magic Carpet/1994
34 – Lionshead Carpet / C	8,120	8,110	10	100	100	10%	600	160	16	Magic Carpet/2005
35 – Thunder Cat Cave Carpet / C	10,290	10,280	10	100	100	10%	600	80	8	Sunkid/1998
36 - Teacup Express/D6	11,244	9,580	1,664	6,494	6,704	26%	3,000	1,100	132	Upgrade
37 – Skyline Express / D4	11,479	9,555	1,924	8,167	8,391	24%	2,400	1,100	110	POMA/1999
38 – Earl's Express / D4	11,482	10,125	1,357	4,640	4,834	29%	1,200	1,100	220	POMA/1999
39 – Pete's Express / D4	11,577	9,995	1,582	6,487	6,677	24%	1,800	1,100	147	POMA/2000
Trans Montane/D6	10,043	8,214	1,829	8,086	8,441	23%	3,000	1,000	120	Planned
Westion Lionshead/G10	8,099	9,290	1,191	3,940	4,190	30%	2,400	1,000	200	Planned

Key:
C = carpet
P = platter
C3 = fixed-grip triple chairlift
C4 = fixed-grip quad chairlift
D4 = detachable quad chairlift
D6 = detachable six person chairlift
G8 = eight passenger gondola
G10 = ten passenger gondola

C. UPGRADED TERRAIN NETWORK

As discussed previously, terrain variety is a key factor in evaluating the quality of the actual skiing and riding guest experience (as opposed to lift quality, restaurant quality, or any other factor). A resort must have a diverse, interesting, and well-designed developed trail system, but also must have a wide variety of alternative terrain, such as mogul runs, bowls, and glades. The reader is referred to Chapter 4 for an in-depth discussion of the importance of terrain variety. With improvements from the upgrade plan, the developed terrain network capacity would be 38,370 guests.

It is anticipated that upgrades to the terrain included In this MDP, primarily in the Back Bowls will complement the existing terrain network, providing additional variety and access to terrain that would otherwise not be routinely skied. This helps improves circulation around the mountain for existing skiers and riders. Refer to Appendix A for detailed specifications of the upgraded terrain network, and Figures 12 and 13 for locations.

TABLE 18. TERRAIN DISTRIBUTION BY ABILITY LEVEL - UPGRADE PLAN

Skier/Rider Ability Level	Trail Area (acres)	Skier/Rider Capacity (guests)	Actual Skier/Rider Distribution (%)	Relevant Skier/Rider Market (%)
Beginner	29	737	3	5
Novice	178	3,204	14	15
Low intermediate	317	4,441	19	25
Intermediate	756	7,561	32	35
Advanced	1,144	4,576	21	15
Expert	852	2,131	9	5
Total	3,512	23,589	100	100

Source: SE Group

1. WEST MOUNTAIN LOWER INTERMEDIATE TERRAIN IMPROVEMENTS

Terrain improvements are planned in the Eagle's Nest area to better utilize terrain accessed off the Chair 26. The area is currently suitable for beginners and novice skiers to learn how to ski using the three existing carpets and the Little Eagle Lift. However, the deficit of low intermediate terrain in the area and the greater resort causes a difficult transition to intermediate for new skiers. If newer skiers do not feel comfortable progressing to higher ability levels, it can impede retention to the sport. A new low intermediate run is planned off of Chair 26, largely using existing terrain. Approximately 9.3 acres of new terrain will be constructed to complete the run, including tree removal, grading, and some snowmaking infrastructure improvements. It is intended for skiers and riders who have progressed past the Lionshead teaching area terrain and are ready for a new challenge. A low intermediate run in this area will allow the ski school and other lower ability level guests to build skills before exploring the remainder of the mountain.

2. BLUE SKY BASIN

Groomed Access to West Earl's Bowl

Additional terrain improvements in Blue Sky Basin include the provision of groomed access to West Earl's Bowl via Earl's Catwalk. The proposed West Earl's access route will provide a maintainable skiway between the current administrative boundary at Belle's Camp to the chutes and glades of West Earl's Bowl that are currently routinely round trip skied via Earl's Express regularly. The skiway will connect a series of existing meadows across the ridge between Belle's Camp and West Earl's. Currently, a narrow track provides access in a backcountry setting but is not adequate for use by ski area personnel in a day-to-day capacity. Avalanche mitigation and ski patrol operations can be difficult in this area. If constructed, the new route would allow Vail to include West Earl's Bowl within its administrative boundary.. Additionally, a groomed path would allow ski patrol to more easily conduct avalanche mitigation routes as well as end of the day guest sweeps. This route would be 3,700 feet long, with an average width of 25 feet for a total of 2.1 acres. The trail would be categorized as an intermediate ability-level trail.

3. GOLDEN PEAK PREVIOUSLY APPROVED TRAILS

As part of the Golden Peak terrain improvement project, 5.6 acres of terrain adjacent to the Golden Peak Race Course is planned. The area is intended to be used as a mogul course. The project was approved in the 2018 Golden Peak Improvements Project EIS.

4. GRADING PROJECTS

Vail has identified twelve areas it plans to modify to improve flow and operations. The projects include grading in high priority areas such as skiways, chairlift mazes, and cat routes/mountain roads. These areas total 23 acres. Refer to Table 16 and Figures 13 and 14 for location and acreages of each improvement area.

TABLE 19. GRADING PROJECT AREAS – UPGRADE PLAN

Location	Acres
Two Elk Skiway Grading	7.0
Skiway Access to Bottom of Tea Cup	3.0
Bottom Chair 21 Grading	2.3
Gitalong Grading	2.3
Practice Parkway Skiway Grading	2.3
Meadows Grading	1.5
Meadows Grading Skiway	1.3
Mill Creek Grading	0.8
Lionsway Grading	0.7
Eagle's Nest Carpet Grading	0.7
Columbine Grading	0.4
Chair 5 Snowcat Bypass	0.3

5. BOUNDARY MANAGEMENT

Vail's SUP encompasses 12,353 acres of terrain, while the administrative boundary is 8,094 acres. Vail proposes to expand its administrative boundary to include West Earl's Bowl and East Pete's Bowl. This would increase Vail's administrative boundary by 835 acres (West Earl's Bowl by 510 acres, and East Pete's Bowl by 325 acres). With the addition of the Golden Peak administrative boundary area (85 acres), the total administrative boundary would be 9,014 acres. All of these areas are within Vail's existing SUP boundary. Refer to Figures 13 and 14 for the location of these expansions.

South Game Creek Bowl and East Vail Chutes/Mushroom Bowl would continue to be managed as is. Refer to Chapter 4 for a discussion of existing boundary management at Vail.

D. UPGRADED CAPACTIY AND DENSITY ANALYSIS

As discussed in Chapter 4, an important aspect of resort design is the balancing of uphill lift capacitywith downhill trail capacity. Trail densities are derived by contrasting the uphill, at-one-time capacity of each lift system with the trail acreage associated with each lift pod. The trail density analysis considers only the acreage associated with the developed trail network. The density analysis for the Upgrade Plan is illustrated in Table 21. It shows that the overall existing density of 5 skiers-per-acre will remain the same after the upgrades are completed. This indicates that the lift and trail upgrades are balanced well with each other.

1. LIFT TERRAIN NETWORK EFFICIENCY

As discussed in Chapter 4, overall resort efficiency is becoming an increasingly important factor in the industry, relating not only to energy/operational efficiency, but also to efficiency of the design and layout of the resort. The idea behind resort design efficiency is to have a well-balanced lift and trail network (i.e., the uphill lift capacity balances with the downhill trail capacity that it serves) that is served by the fewest number of lifts possible, while maintaining desired capacities, circulation routes, and service to the full spectrum of ability levels and types.

a) Lift Network Efficiency

As discussed in Chapter 4, this document analyzes Lift Network Efficiency by calculating the average capacity per lift. Optimally, and in general, the average capacity per lift would likely be close to 1,000. Industry-wide, the average capacity per lift is approximately 650. The existing average capacity per lift for Vail is well above industry-wide average at 988 meaning that the Vail lift network operates efficiently. With the constructed and upgrade to lift network under the upgrade conditions, the average Lift Network Efficiency would drop slightly to 922. With the planned upgrades, the Vail lift network will continue to operate very efficiently for the amount of terrain it services.

b) Terrain Network Efficiency

As discussed in Chapter 4, Terrain Network Efficiency refers to the amount of effort required to properly maintain a resort's terrain. From this standpoint, the most efficient scenario is to have a quantity of terrain that closely meets the target density requirements. As discussed, Vail has a policy to intentionally maintain lower trail densities than industry standards to ensure the higher quality experience expected by its destination guests. Also, as discussed in Chapter 4, an effective way to review terrain efficiency is to interpret the density analysis. Under the Upgrade Plan Conditions, the overall "Density Index" figure slightly increases to 53%, maintaining an excellent, low density, ski experience. The lower Terrain Network Efficiency percentage also reflects the vast terrain in the Back Bowls and Blue Sky Basin that are classified as "developed" but are not maintained to the same degree as Front Side trails.

TABLE 20. LIFT NETWORK CAPACITY - UPGRADE PLAN CONDITIONS

Lift Number + Name/ Lift Type	Slope Length (ft)	Vert Rise (ft)	Actual Capacity CCapacity (persons/ hr.)	Oper. Hours (hrs.)	Up- Mtn. Access Role (%)	Misloading/ Lift Stoppages (%)	Adj. Hourly Capacity (persons/hr.)	VTF/ Day (000)	Vertical Demand (ft./day)	Daily Lift Capacity
1 – Gondola One / G10	9,115	1,997	3,600	7.50	70	5	900	13,480	16,217	830
2 - Avanti Express/D8	6,588	1,465	3,600	7.00	5	10	3,060	31,380	14,232	2,200
3 – Wildwood Express / D6	3,470	833	2,400	7.00	5	5	2,160	12,595	13,196	950
4 - Mountain Top Express/ D8	4,280	1,101	3,600	7.00	15	5	2,880	22,196	14,932	1,490
5 – High Noon Express / D4	5,552	1,857	2,400	6.00	5	5	2,160	24,067	24,044	1,000
6 – Riva Bahn / G8	16,134	2,994	3,600	7.50	70	5	900	20,210	15,828	1,280
7 - Game Creek Express/D6	4,434	1,181	3,000	7.00	0	10	2,700	22,321	14,859	1,500
8 – Born Free Express / D6	6,076	1,593	3,000	7.50	60	5	1,050	12,545	19,283	650
9 – Sun Up Express / D4	3,894	1,100	2,400	6.00	10	5	2,040	13,464	19,088	710
10 – Highline Express / D4	6,728	1,762	2,400	7.00	25	5	1,680	20,721	26,211	790
11 – Northwoods Express / D6	5,783	1,544	3,000	7.00	0	10	2,700	29,182	14,533	2,010
12 – Gopher Hill / C3	937	146	1,600	7.50	0	20	1,280	1,402	2,128	660
14 – Sourdough Express / D4	2,347	517	2,400	6.50	15	10	1,800	6,049	11,907	510
15 - Little Eagle/D4	1,314	188	1,358	7.00	0	15	1,154	1,519	2,797	540
16 - Golden Peak T-Bar	2,320	692	1,200	5.00	50	5	540	1,868	18,815	100
17 - Sun Down Express/D4	6,087	1,586	2,400	5.50	5	5	2,160	18,842	21,381	880

TABLE 20. LIFT NETWORK CAPACITY - UPGRADE PLAN CONDITIONS(CONT.)

Lift Number + Name/ Lift Type	Slope Length (ft)	Vert Rise (ft)	Actual Capacity CCapacity (persons/ hr.)	Oper. Hours (hrs.)	Up- Mtn. Access Role (%)	Misloading/ Lift Stoppages (%)	Adj. Hourly Capacity (persons/hr.)	VTF/ Day (000)	Vertical Demand (ft./day)	Daily Lift Capacity
18 – Lightning Coyote Carpet / C	360	36	600	7.00	0	5	570	144	1,471	100
19 - Eagle Bahn Gondola / G12										
20 - Cascade Village / D4										
21 - Orient Express / D4	7,658	1,565	3,000	6.50	10	5	2,550	25,940	14,849	1,750
22 - Mongolia Platter / P	5,786	1,575	2,400	5.00	0	5	2,280	17,955	23,084	780
24 - Wapiti Platter / P	710	17	701	6.00	100	0	-	0	809	-
25 - Elvis Bahn Carpet / C	395	55	600	7.50	0	10	540	223	2,111	110
26 - Elvis Express / D4	5,399	1,202	2,400	7.00	0	5	2,280	19,184	14,532	1,320
27 - Black Forest Platter / P	1,919	401	650	6.00	0	10	585	1,408	4,312	330
29 - Rips Ride Carpet / C	301	24	600	7.50	0	10	540	97	1,133	90
33 Golden Peak Carpet / C	201	20	600	7.50	0	10	540	81	780	100
34 - Lionshead Carpet / C	100	10	600	7.50	0	10	540	41	792	50
35 - Thunder Cat Cave Carpet / C	100	10	600	7.50	0	10	540	41	656	60
36 - Teacup Express / C4	6,704	1,664	3,000	5.50	5	5	2,700	24,710	20,201	1,220

TABLE 20. LIFT NETWORK CAPACITY - UPGRADE PLAN CONDITIONS (CONT.)

Lift Number + Name/ Lift Type	Slope Length (ft)	Vert Rise (ft)	Actual	Oper. Hours (hrs.)	Up- Mtn. Access Role (%)	(%)	Adj. Hourly Capacity (persons/ hr.)	VTF/Day (000)	Vertical Demand (ft./day)	Daily Lift Capacity
38 - Earl's Express / D4	4,834	1,357	1,200	5.00	5	5	1,080	7,328	26,295	280
39 - Pete's Express / D4	6,677	1,582	1,800	5.00	0	5	1,710	13,526	18,080	750
Trans Montane / D6	2,320	692	1,200	5.00	50	5	540	1,868	18,815	100
West Lionshead/G10	4,190	1,191	2,400	7.50	100	0	-	0	20,835	-
Total	164,596		73,909				49,219	408,090		25,420

Key:
C = carpet
P = platter
C3 = fixed-grip triple chairlift
C4 = fixed-grip quad chairlift
D4 = detachable quad chairlift
D6 = detachable six person chairlift
G8 = eight passenger gondola
G10 = ten passenger gondola

TABLE 21. DENSITY ANALYSIS - UPGRADE PLAN CONDITONS

Lift Number + Name/ Lift Type	Daily Lift Capacity	Guest Distribution					Density Analysis			
		Support Fac./Milling (guests)	Lift Lines (guests)	On Lift (guests)	On Terrain (guests)	Terrain Area (acres)	Terrain Density (guests/ac)	Desired Density (guests/ac)	Diff (+/-)	Density Index (%)
1 – Gondola One / G10	830	208	30	114	478	237.9	2	6	-4	35%
2 - Avanti Express/D8	2,200	550	357	336	957	195.5	5	11	-6	44%
3 – Wildwood Express / D6	950	238	180	127	405	134.9	3	10	-7	32%

TABLE 21. DENSITY ANALYSIS - UPGRADE PLAN CONDITONS (CONT.)

Lift Number + Name/ Lift Type	Daily Lift Capacity	Guest Distribution					Density Analysis			
		Support Fac./Milling (guests)	Lift Lines (guests)	On Lift (guests)	On Terrain (guests)	Terrain Area (acres)	Terrain Density (guests/ac)	Desired Density (guests/ac)	Diff (+/-)	Density Index (%)
4 - Mountain Top Express/D8	1,490	373	240	205	672	130.7	5	10	-5	51%
5 – High Noon Express / D4	1,000	250	180	182	388	107.3	4	4	0	91%
6 – Riva Bahn / G8	1,280	320	45	246	669	106.4	6	13	-7	47%
7 - Game Creek Express/D6	1,500	375	225	200	700	182.9	4	6	-2	62%
8 – Born Free Express / D6	650	163	35	106	346	94.5	4	5	-1	85%
9 – Sun Up Express / D4	710	178	170	132	230	65.8	3	4	-1	74%
10 – Highline Express / D4	790	198	56	188	348	88.3	4	5	-1	77%
11 – Northwoods Express / D6	2,010	503	315	260	932	325.1	3	6	-3	48%
12 – Gopher Hill / C3	660	264	213	50	133	8.0	17	18	-1	94%
14 – Sourdough Express / D4	510	128	60	70	252	52.1	5	14	-9	36%
15 - Little Eagle/D4	540	189	192	25	134	14.0	10	18	-8	56%
16 - Golden Peak T-Bar	100	25	18	35	22	37.6	1	11	-10	9%
17 - Sun Down Express/D4	880	220	180	219	261	147.9	2	3	-1	67%
18 – Lightning Coyote Carpet / C	100	45	19	22	14	0.8	17	25	-8	68%
19 - Eagle Bahn Gondola/G12	1,070	268	126	137	539	77.4	7	8	-1	83%
20 - Cascade Village/D4	80	20	2	12	46	9.6	5	10	-5	53%
21 – Orient Express / D4	1,750	438	213	325	774	184.9	4	10	-6	40%
22 – Mongolia Platter / P	780	195	152	220	213	258.1	1	4	-3	23%

TABLE 21. DENSITY ANALYSIS - UPGRADE PLAN CONDITONS (CONT'D)

Lift Number + Name/ Lift Type	Daily Lift Capacity	Guest Distribution					Density Analysis			
		Support Fac./ Milling (guests)	Lift Lines	On Lift (guests)	On Terrain (guests)	Terrain Area (acres)	Terrain Density (guests/ ac)	Desired Density (guests/ ac)	Diff (+/-)	Density Index (%)
24 – Wapiti Platter / P	0	0	0	0	0	0.0	0	0	0	-
25 – Elvis Bahn Carpet / C	110	50	18	23	19	1.0	19	25	-6	76%
26 - Pride Express/D4	1,320	330	76	208	706	114.2	6	7	-1	82%
27 – Black Forest Platter / P	330	83	20	29	198	19.2	10	12	-2	84%
29 – Rips Ride Carpet / C	90	36	18	17	19	1.9	10	25	-15	40%
33 – Golden Peak Carpet / C	100	45	18	30	7	0.3	22	25	-3	88%
34 – Lionshead Carpet / C	50	23	18	6	3	0.2	16	25	-9	64%
35 – Thunder Cat Cave Carpet / C	60	27	18	11	4	0.2	22	25	-3	88%
36 - Teacup Express/D6	1,220	305	225	274	416	146.2	3	3	0	88%
37 – Skyline Express / D4	1,120	280	190	290	360	352.2	1	4	-3	23%
38 – Earl's Express / D4	280	70	36	79	95	156.3	1	4	-3	23%
39 – Pete's Express / D4	750	188	143	173	246	255.0	1	7	-6	15%
Trans Montane/D6	110	28	8	21	53	5.8	9	9	0	100%
Westion Lionshead/G10	0	0	0	0	0	0.0	0	0	0	-
Total	25,420	6,613	3,796	4,372	10,639	3,513	5	9	-4	53%

Key:
C = carpet
P = platter
C3 = fixed-grip triple chairlift
C4 = fixed-grip quad chairlift
D4 = detachable quad chairlift
D6 = detachable six person chairlift
G8 = eight passenger gondola
G10 = ten passenger gondola

2. GUEST SERVICES AND FOOD SERVICE SEATING

Five buildings are included in the MDP upgrade, as well as the previously-approved Blue Sky Basin restaurant (refer to Chapter 5 for more details). The Chair 9 (Sun Up Express) Restaurant is a 10,000-square foot restaurant west of the top terminal of Chair 9. The fine dining restaurant would have approximately 130 seats. Water, sewer, and electricity for the restaurant facility would be connected to Two Elk Lodge. Guest surveys over time have indicated a desire for a wide range of dining experiences, including fine dining. The fine dining experience is meant to complement the existing on-mountain dining options allowing for variety in guest's options, a building with a smaller footprint, and therefore less seating, is intended to better fit with the landscape.

A previously-approved restaurant in Blue Sky Basin is also included in the restaurant and space use analysis.All new dining facilities would need utilities installed, including water and electrical. The utilities for Chair 9 restaurant would be connected to Two Elk Lodge, the utilities for the Umbrella Bar would be connected to Mid-Vail, and utilities for Blue Sky Restaurant would run down the lift line of Chair 21. With the construction of both of these restaurants, Vail would increase indoor seating capacity by 2,730 guests during the busy lunchtime demand (see Table 22).

The second building is planned to be a 120-square foot restroom at the top of the Forest Flyer Mountain Coaster. The restroom is designed to have one women's and one men's facility to accommodate the increasing number of visitors in the Eagle's Nest area. Either composting toilets or regular flush toilets (requiring water and sewer spurred from Eagle's Nest) would be installed. Sufficient electricity is available in this location for the facility.

The Mid Vail Umbrella Bar and necessary utilities are planned at Mid Vail, adding approximately 50 indoor and 100 outdoor seats. Mid Vail restaurant is planned to be renovated to improve the existing facility, likely keeping a similar number of seats but adding more space where possible. Lastly, Wildwood Restaurant is planned to be replaced or expanded to accommodate additional skier demand from the newly constructed Sun Down Lift.

TABLE 22. UPGRADE PLAN RESTAURANT SEATING

Restaurant	Indoor Seating	Outdoor Seating	Total Seating	Average Seat Turnover	Nice Day Capacity	Adverse Day Capacity	Lunchtime Demand
Eagle's Nest	590	185	775	4.0	3,100	2,360	3,830
Wildwood	240	184	424	4.0	1,696	960	1,981
Buffalo's / Henry's	94	160	254	4.0	1,016	376	903
Two Elk	1,100	600	1,700	3.5	5,950	3,850	5,760
Belle's Camp / Dawg House	30	96	126	3.5	441	105	215
Mid Vail / The 10th / Umbrella Bar	1,550	645	2,195	4.0	7,683	5,425	5,478
The Coop	65	150	215	4.0	860	260	330
Game Creek Club	194		194	2.5	485	485	387
Chair 9 Restaurant	130		130	3.5	455	455	1,100
Blue Sky Restaurant	650		650	3.5	2,275	2,275	330
TOTAL	4,643	2,020	6,663		23,961	16,551	20,314

With the addition of Chair 9 and Blue Sky restaurants, Vail would be able to better accommodate the lunchtime demand (20,314 guests) when compared to the Manage-To number (19,900 guests). The Vail and Lionshead villages also provide seating capacity in base area restaurants operated by other entities. These base area restaurants are generally thought to self-regulate based on market demand.

3. SPACE USE

Guest services will continue to be provided at Golden Peak, Vail Village, Lionshead and Cascade Village. Additional food service and other guest services are provided in several village locations by third-party entities. In addition to the current on-mountain facilities, two additional restaurants will provide amenities to guests in the Back Bowls. Table 23 shows the planned guest services by facility at the base area and across the mountain.

TABLE 23. GUEST SERVICE SPACE - UPGRADE PLAN

Location	Reccommend Range	
	Low	High
Golden Peak Base	40,440	50,370
Vail Village Base	65,140	82,350
Lionshead Base	70,360	88,920
Cascade Base	5,160	6,500
Mid Vail/The 10th	34,500	43,600
Buffalo's/PHQ	5,420	6,860
Two Elk	34,550	43,680
Eagles Nest/WH	24,600	31,080
Game Creek Club	2,320	2,940
Belle's Camp/D H	1,300	1,620
Wildwood	11,880	15,040
TOTAL SQUARE FEET	295,670	372,960

TABLE 24. UPGRADE PLAN GUEST SERVICE FACILITIES

Service Function	Base Area				On-mountain									
	Golden Peak	Vail Village	Lionshead	Cascade Village	Eagle's Nest	Mid-Vail / The 10th	Patrol HQ / Buffalos / Henry's Hut	Two Elk Lodge	Wildwood	Belle's Camp / Dawg Haus	Game Creek Restaurant	The Coop	Blue Sky Basin Restaurant	
Ticket Sales	X	X	X	X										
Public Lockers	X	X	X	X	X	X	X	X	X					
Rentals/Repair	X	XO	XO	O	X		X							
Retail Sales	X	XO	XO	O	X	X	X	X	X	X	X		X	X
Bar/lounge	XO	O	O	O	X	X		X			X		X	X
Adult Ski School	X	X	X		X	X								
Kid's Ski School	X		X		X									
Restaurant Seating (Indoor)	XO	XO	XO	O	X	X	X	X	X	X	X	X	X	X
Restrooms	X	X	X	X	X	X	X	X	X	X	X		X	X
Ski Patrol					X	X	X	X	X	X				
Administration	X	X	X		X	X								

Key:
X = operated by Vail Mountain Resort; O = operated by others

E. UPGRADED PARKING CAPACITY AND RESORT ACCESS

The Town of Vail and Vail Mountain Resort are working together to address current and future parking demands. A number of initiatives have been proposed or implemented to address this future planning challenge and to limit the number of vehicles parked on the South Frontage Road. These initiatives include increasing parking rates for short term and overnight parking at the Vail Village and Lionshead parking structures and for parking pass holders, and expanding Vail bus service to include an express bus from West Vail and expanded summer service.[16] All of these initiatives aim not to increase visitation, but rather to reduce the number of vehicles parked on the South Frontage Road throughout the year and accommodate demand.

F. UPGRADED RESORT OPERATIONS

1. SNOWMAKING

The snowmaking upgrade plan is intended to expand coverage and enhance the reliability and consistency of the skiing surface in response to specific operational concerns, including below average natural snowfall, high snow wear areas, critical circulation routes, and areas with high wind and/or solar exposure. With the upgrade to the snowmaking system, Vail wants to address the low proportion between snowmaking coverage and total skiable acreage; early season beginner terrain, egress to both villages and top to bottom skiing; consistent opening by Thanksgiving; and maximizing coverage in higher elevation, lower temperature areas of Mid Vail and the upper mountain. The snowmaking upgrade also addresses improving the snowmaking infrastructure to operate more efficiently.

The existing snowmaking pond off Gitalong Road is planned to be expanded by raising and reinforcing the snowmaking pond to accommodate additional water storage. The additional available water would allow Vail to increase pump capacity during critical snowmaking windows, allowing them to operate more guns at one time. Site specific design and engineering is planned prior to environmental review. Approximately 262 acres of snowmaking on the Front Side were approved in the 2019 ROD and 33 were approved in the 2009 ROD. Of these, 124 acres have been constructed. The remaining acreage includes 12 acres in the Golden Peak area, 23 acres on Simba, and 136 acres across Vail's Front Side.

In addition to the previously approved snowmaking, approximately 64 acres of snowmaking are planned in the Eagle's Nest area as part of the low intermediate terrain progression improvements to ensure lower ability level runs have consistent snowpack. Additional runs include Lodgepole, Safari, Berries, Ledges, and between Chair 19 and Chair 26. It will tie into the existing snowmaking system.

16. Town of Vail. 2017. Year in Review.

2. MAINTENANCE FACILITIES

In the 2009 ROD, a new 6,000-square foot snowcat maintenance garage adjacent to, and uphill of, the existing facility located between Eagle's Nest and Mid Vail was approved. Since this approval, an additional 6,000 square feet of maintenance space is now needed to maintain the fleet of cats required to groom the terrain at Vail. Vail plans to construct a 12,000-square foot maintenance building in the same location as approved in 2009 ROD.

3. INFRASTRUCTURE AND UTILITIES

Four infrastructure and utility projects are planned at Vail within the life of this MDP. They include the following:

- A waterline from PHQ near Buffalo's Restaurant to Two Elk Restaurant is planned. The line would be buried along the ridgeline between these two locations. It would provide water supply for Two Elk and the planned restaurant west of the top terminal of Chair 9 (Sun Up Express).
- An electrical line from the top terminal of Chair 21 (Orient Express) to the top terminal of the planned Mongolia Express is planned. Electricity is needed for the Mongolia Express. This location and tie-in is logical based on current plans. As additional site-specific details are determined, the location may be modified.
- The construction of a mountain road bypass near Buffalo's Restaurant. The existing Minturn Mile access road is on an approximate 22 percent slope near the top, which makes it difficult to maintain, is a source of excess sedimentation, and in wet or icy weather is challenging to navigate. The top section of this road also gets covered by early season snowmaking which cuts off rubber tired wheel access to mountain operations looking to do fall maintenance on lifts and other resort infrastructure. The proposed bypass road would allow for mountain operations to continue work in the back bowls until natural snow eliminates access. Therefore, an approximate 1,800-foot segment of the Minturn Mile access road will be closed and revegetated west of the top terminal of Chair 5 (High Noon Express). A new segment of road will be constructed, bypassing the revegetated segment of road. Constructed at a more reasonable slope (approximately 12 percent), this will improve summer and fall access for trucks, and better enable snowcat deliveries to the PHQ, Buffalo's Restaurant, Two Elk Restaurant, and the proposed restaurant near the top terminal of Chair 9. To construct this new road, the existing bomb cache location will be relocated outside of the proposed route. Due to how critical early season operations are, Vail views the construction of this road as a top priority.
- All new food and beverage facilities would require utilities, including water, sewer, and electrical, to be installed at the new buildings. This includes the Chair 9 Restaurant, Mid-Vail Umbrella Bar, and Blue Sky Restaurant. Additional electrical would be required near the top of Chair 9 to support demand.

G. RESORT CAPACITY AND LIMITING FACTORS

The overall balance of the upgrade plan is evaluated by calculating the capacities of the resort's various facilities. The upgrade capacities are discussed above in each section. Based on the planned upgrades, the lift network capacity is 25,420 guests per day, increased from existing lift network capacity of 23,690 guests per day. However, the Manage-To number will remain the same, at 19,900. The increase in lift network capacity can be attributed to lift upgrades and an increase in uphill capacity that will improve upon the guest experience.

Vail intentionally sets certain resort capacities higher than a typical winter daily visitation level. The desire is not to increase daily capacity at Vail, but improve the overall operation and efficiency of mountain operations in order to ensure a high-quality guest experience. Managing the resort in this way results in shorter lift lines (particularly during morning access periods), terrain variety that provides a challenge for the majority of the ski/snowboard market, and lift, terrain, and guest service levels that provide a consistently great guest experience for all levels of guests. This is consistent with the resort's goal of remaining the industry leader in quality.

One of Vail's goals is to maintain high quality on-mountain conditions for their guest. To do so, a lower than average trail density is desirable with plenty of uphill capacity to reduce lift lines, especially during busy times of day and season. In recent years, investments have been made to address high traffic area, such as Chair 2 (Avanti Express) and Chair 4 (Mountain Top Express); however, investments will continue to be made to improve the mountain circulation.

The addition of the two new on-mountain restaurants and expansion at Mid Vail would address the existing restaurant seating imbalance that is found at Vail, particularly in the Back Bowls. Reducing demand at Two Elk would improve the guest experience on the eastern portion of the Back Bowls. These restaurants would increase the on-mountain seating capacity to the point that it would balance with the lift capacity for those areas.

When combined, parking and resort access capacity remains above the Manage-To threshold with an increase in parking under the upgrade plan. However, it remains a limiting factor because guests simply cannot access the resort when parking and local accommodations are full, or transit is reduced. On days that parking, accommodations, and transit allow visitation to exceed the Manage-To threshold, the resort will take steps to lower that number.

Another limiting factor for Vail is providing reliable, consistent snow conditions during low or late snowfall years or warm springs. During these early and late months of the season, the challenge for Vail is to provide reliable opening and closing dates, beginner terrain, egress to villages, top to bottom skiing and consistent snow surface in high traffic areas. The snowmaking upgrading plan is intended to expand coverage and enhance the reliability and consistency of the skiing surface.

H. UPGRADED SUMMER AND MULTI-SEASON OPERATIONS

1. SUMMER AND MULTI-SEASON ACTIVITIES AND FACILITIES

Summer activities at ski resorts have expanded and evolved over the last decade. Vail's offerings have followed trend. Additionally, Vail recognizes that it must cater to a slightly different demographic than in the winter. Summer activities provided by Vail are a combination of activities that can enjoyed by all ages and ability levels.

Adventure Ridge is the existing hub of summer activities at Vail and will continue to be a major portal for summer activities. Over the life of the plan, utilization of Mid Vail as a summer portal will increase—providing a starting point for activities, as well as food and guest service.

There are a number of previously approved, unimplemented summer activities projects that Vail would like to implement over the life of this MPD. Refer to Chapter 5 for more details. These activities include the Front Side Canopy Tour, riparian experience, modified horse trail and aerial adventure course. Figures 16 and 17 show the previously approved and upgrade plan summer activities.

a) Hiking, Biking and Multi-Use Trails

Following the adoption of the 2018 MDP, hiking and biking has continued to grow in popularity further emphasizing the need to for more trail options. As a result, Vail plans to construct additional biking, hiking and multi-use trails to supplement Vail's existing trail network.

Trails are planned to provide a number of opportunities for popular and growing outdoor recreation at Vail. The biking trail network will expand primarily in the Lionshead area and the Front Side, a heavily utilized summer zone. Six new bike trails include a new segment adjacent to the popular Radio Flyer with two options to the base area, a segment from Mid Vail toward Vail Village that connect to Gitalong Road, three segments from Wildwood to Mid Vail and one segment to through the serene Northwood Bowl.

Hiking and multi-use trails are planned from Vail Village to Buffalo's and the top of Chairs 4, 5 and 11, via Mid Vail. The four trail segments are planned to provide connectivity from major hubs of Eagles Nest to Mid Vail to Buffalo's and to Game Creek Restaurant. Additional hiking trails are needed to alleviate the heavily used Berry Picker trail from Vail Village/Lionshead to Adventure Ridge. The current Northeast Rim hiking trail from Wildwood to Mid-Vail will also be reclassified as multi-use.

To help guest develop their biking skills, two bike skills parks are planned at Eagle's Nest and at Mid Vail. These areas would include features typically found on trails at Vail, such as log and rock features, ramps, bank turns and dirt rollers. Eagle's Nest and Mid Vail are the on-mountain hubs and an ideal location for riders to test their skills before riding the trails. Prior to constructing any trails, Vail intends to thoughtfully consider which alignments will work best to enhance the summer on-mountain recreation experience for the public and intends to work closely with the USFS on studying alternative alignments to decrease resource impacts.

Due to the nature of trail layout and design requiring extensive field fitting, all trails presented are conceptual and are designed to illustrate network connectivity. Site specific trail planning will be needed prior to environmental review.

b) Pride Express Mountain Coaster

Vail plans to cater to the growing summer market with an additional mountain coaster adjacent to the existing mountain coaster. The Pride Express Mountain Coaster was originally proposed as part of the 2014 Vail Recreation Enhancements Project Environmental Impact Statement. It would be longer than then existing mountain coaster, the Forest Flyer. The track would be roughly 12,000 feet of track descending approximately 1,200 vertical feet. This coaster was not approved in the 2014 ROD as further site specific and resource specific analysis was required; however, the close proximity to Eagle's Nest and the potential use of existing winter infrastructure still makes this location ideal to expand the summer guest experience and for providing a diverse summer experience a wide range of guests can enjoy.

c) Observation Deck and Multi-Use Deck

Vail also plans to construct an observation deck on the ridge between Game Creek and Sun Down bowls. The deck would be similar design to the observation deck in the Eagle's Nest area with views of the Back Bowls and Holy Cross. This would give guests who are hiking and biking the Grand Traverse or Kloser's Klimb a destination and a chance to take in the scenery. Educational signage and materials could be developed to further engage guests with their surroundings. The deck would be constructed in accordance with the Build Environmental Image Guide and Vail Design Guidelines.

A multi-use deck is planned in a similar location as the existing temporary multi-use deck in the Mid Vail area at The 10th Restaurant. The deck would allow for additional programming to be held on the mountain in a forested setting. The deck would be constructed in accordance with the Build Environmental Image Guide and Vail Design Guidelines.

d) Aerial Adventure Course at Adventure Ridge

A previously-approved aerial adventure course is planned between the Eagle's Nest Building and the planned Pride Express Mountain coaster. The new course is intended to be for children, with small features such as towers, bridges, slides, and ziplines. Its installation will provide additional activities suitable for children, expanding upon Vail's family-friendly offerings.

e) Riparian Experience

A previously approved "Riparian Experience" area is planned east of the Eagle's Nest. It is an educational experience targeted towards children. Using natural materials, it will provide a "hands-on" experience in a controlled setting. As described in Chapter 5, it would be a small area with man-made streams, dams, and other features powered by a water recirculation system.

2. RECREATION ZONES AMENDED BY THE MASTER DEVELOPMENT PLAN

The majority of the existing zones would not change. The zone that does change is due to lift and trail development in Mongolia Bowl. Figure 16 shows the Front Side upgrade plan summer zones. The Back Side zones were not included due to limited summer activity allowed in this area. Below is a summary of the changes between the existing and upgrade summary zones:

- With the construction of the Mongolia Bowl Express, zone characteristic would change from a Zone 4 to a Zone 3 due to the development of the lift infrastructure.

Table 14 in Chapter 4 describes the characteristics of each zone characteristic. Table 25 summarizes the zone designations pending the approval and implementation of the Upgrade Plan.

TABLE 25. VAIL SUMMER USE ZONES - UPGRADE PLAN CONDITIONS

Area Boundaries	Score	Appropriate Zone
Area 1		
Access	3	
Remoteness	2	
Naturalness	3	
Infrastructure	3	
Total Score	11	Zone 4
Area 2		
Access	2	
Remoteness	2	
Naturalness	3	
Infrastructure	2	
Total Score	9	Zone 3
Area 3		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3
Area 4		
Access	1	
Remoteness	1	
Naturalness	1	
Infrastructure	1	
Total Score	4	Zone 1
Area 5		
Access	2	
Remoteness	1	
Naturalness	1	
Infrastructure	2	
Total Score	6	Zone 2

Area Boundaries	Score	Appropriate Zone
Area 6		
Access	1	
Remoteness	1	
Naturalness	1	
Infrastructure	1	
Total Score	4	Zone 1
Area 7		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	3	
Total Score	9	Zone 3
Area 8		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	1	
Total Score	7	Zone 3
Area 9		
Access	3	
Remoteness	3	
Naturalness	3	
Infrastructure	3	
Total Score	12	Zone 5
Area 10		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3

TABLE 25. VAIL SUMMER USE ZONES - UPGRADE PLAN CONDITIONS

Area Boundaries	Score	Appropriate Zone
Area 11		
Access	1	
Remoteness	1	
Naturalness	2	
Infrastructure	2	
Total Score	6	Zone 2
Area 12		
Access	1	
Remoteness	1	
Naturalness	2	
Infrastructure	1	
Total Score	5	Zone 2
Area 13		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	3	
Total Score	9	Zone 3
Area 14		
Access	1	
Remoteness	1	
Naturalness	1	
Infrastructure	1	
Total Score	4	Zone 1
Area 15		
Access	1	
Remoteness	1	
Naturalness	1	
Infrastructure	1	
Total Score	4	Zone 1

Area Boundaries	Score	Appropriate Zone
Area 16		
Access	2	
Remoteness	2	
Naturalness	2	
Infrastructure	2	
Total Score	8	Zone 3
Area 17		
Access	2	
Remoteness	2	
Naturalness	3	
Infrastructure	3	
Total Score	11	Zone 4
Area 18		
Access	2	
Remoteness	1	
Naturalness	2	
Infrastructure	2	
Total Score	7	Zone 3
Area 19		
Access	2	
Remoteness	1	
Naturalness	3	
Infrastructure	3	
Total Score	6	Zone 2
Area 20		
Access	2	
Remoteness	1	

TABLE 25. VAIL SUMMER USE ZONES - UPGRADE PLAN CONDITIONS

Area Boundaries	Score	Appropriate Zone
Area 21		
Access	3	
Remoteness	2	
Naturalness	3	
Infrastructure	3	
Total Score	11	Zone 4
Area 22		
Access	3	
Remoteness	3	
Naturalness	3	
Infrastructure	3	
Total Score	11	Zone 4
Area 23		
Access	3	
Remoteness	3	
Naturalness	3	
Infrastructure	3	
Total Score	12	Zone 5
Area 24		
Access	1	
Remoteness	1	
Naturalness	2	
Infrastructure	2	
Total Score	6	Zone 2
Area 25		
Access	1	
Remoteness	1	
Naturalness	2	
Infrastructure	2	
Total Score	6	Zone 2

Area Boundaries	Score	Appropriate Zone
Area 26		
Access	1	
Remoteness	1	
Naturalness	1	
Infrastructure	1	
Total Score	4	Zone 1

APPENDICES

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
01 Bear Tree	8,962	8,341	620.9	2,615.3	290	17.4	24%	40%	Intermediate
01 Front Side Chutes	9,200	8,600	600.0	1,818.8	817	34.1	33%	70%	Expert
01 Giant Steps	9,337	8,210	1,127.2	3,971.5	299	27.3	28%	56%	Expert
01 Gitalong Road	10,152	8,364	1,788.6	22,062.6	40	20.3	8%	18%	Novice
01 Gondola One Line Upper	10,200	10,000	200.0	761.7	87	1.5	26%	30%	Low Intermediate
01 Head First	8,449	8,211	237.6	557.2	322	4.1	43%	62%	Expert
01 International	9,338	8,196	1,142.4	3,815.4	235	20.6	30%	60%	Expert
01 Lionsway Cutoff	9,070	9,000	70.0	318.8	70	0.5	22%	23%	Novice
01 Lower Lionsway	9,335	9,040	295.0	1,989.0	30	1.4	15%	17%	Novice
01 Mid Vail Milling Area	10,174	10,155	19.1	463.4	265	2.8	4%	12%	Beginner
01 Mill Creek Road	8,760	8,568	191.8	2,840.5	31	2.0	7%	14%	Novice
01 Mud Slide Chutes	9,430	8,700	730.0	1,585.1	1,474	53.6	46%	70%	Expert
01 Pump House Chutes	9,770	8,850	920.0	2,990.1	601	41.2	31%	65%	Expert
01 Spruce Face	10,103	9,867	236.0	958.1	273	6.0	25%	32%	Low Intermediate
01 Upper Lionsway	10,140	9,800	340.0	3,450.8	50	4.0	10%	12%	Beginner
01 Vail Village Catwalk	8,465	8,241	223.9	2,562.8	30	1.8	9%	16%	Novice
01 Villages Catwalk	8,685	8,525	159.8	1,529.4	40	1.4	10%	18%	Novice
02 Avanti Lower	9,824	9,315	510.0	2,890.3	367	24.3	18%	34%	Low Intermediate
02 Avanti Upper	10,750	10,083	667.3	2,862.9	368	24.2	23%	36%	Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
02 Avanti-Cookshack	10,083	9,824	258.2	703.1	221	3.6	37%	47%	Advanced Intermediate
02 Berries	10,585	10,120	465.7	2,175.1	208	10.4	21%	38%	Intermediate
02 Berries-Cookshack	10,120	9,746	373.4	1,321.7	204	6.2	28%	48%	Advanced Intermediate
02 Chair 2 Lift Line	10,067	9,739	327.2	1,308.6	98	2.9	25%	44%	Intermediate
02 Chair 2 Lift Line	10,067	9,739	327.2	1,308.6	98	2.9	25%	44%	Intermediate
02 Chaos Canyon	9,850	9,667	182.9	1,928.7	40	1.8	9%	20%	Novice
02 Cold Feet	10,088	9,992	95.8	798.7	25	0.5	12%	21%	Novice
02 Columbine	9,957	9,338	618.8	3,093.5	16	1.1	20%	41%	Intermediate
02 Cookshack	10,169	9,879	290.6	828.0	149	2.8	35%	50%	Advanced Intermediate
02 Coyote Crossing	10,220	10,050	170.0	1,559.3	35	1.3	11%	12%	Beginner
02 Eagles Nest Expressway	10,624	10,579	45.4	601.2	44	0.6	8%	13%	Novice
02 Ledges Upper	10,467	9,599	867.8	4,370.0	3	0.3	20%	40%	Intermediate
02 Lodgepole	10,537	9,307	1,229.5	5,778.3	226	30.0	21%	37%	Intermediate
02 Mid Vail Express	10,760	10,169	590.5	2,677.0	315	19.3	22%	35%	Intermediate
02 Minni Ha Ha	9,834	9,659	175.5	867.6	259	5.2	20%	27%	Low Intermediate
02 Minnie's Cutoff	9,825	9,727	97.7	869.0	922	18.4	11%	19%	Novice
02 Minnie's Mile Upper	9,927	9,642	284.6	1,892.2	35	1.5	15%	31%	Low Intermediate
02 Minnies Mile Upper Face	10,209	9,927	281.9	938.6	318	6.8	30%	45%	Intermediate
02 Overeasy	10,567	10,237	330.1	1,794.3	238	9.8	18%	31%	Low Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
02 Pickeroon	10,710	10,111	598.7	2,652.0	279	17.0	23%	40%	Intermediate
02 Pickeroon Lower	9,790	9,700	90.1	701.8	240	3.9	13%	17%	Novice
02 Pickeroon-Cookshack	10,111	9,790	321.4	926.4	215	4.6	35%	50%	Advanced Intermediate
02 Practice Pkwy	10,413	9,926	487	4,037.3	43	4.0	12%	24%	Novice
03 Challenge	10,659	10,297	361.2	1,276.3	426	12.5	28%	56%	Expert
03 Hunky Dory	10,980	10,469	510.8	2,082.8	505	24.1	25%	46%	Advanced Intermediate
03 Kangaroo Cornice	10,840	10,640	200.0	655.3	736	11.1	31%	46%	Advanced Intermediate
03 Lookma	10,526	10,180	345.7	1,046.3	395	9.5	33%	70%	Expert
03 Ridge Route	10,990	10,330	660.0	6,612.1	209	31.8	10%	21%	Novice
03 South Lookma	10,443	10,170	273.1	1,213.1	392	10.9	23%	54%	Advanced Intermediate
03 The Meadows	10,768	10,156	612.1	3,967.9	324	29.5	15%	31%	Low Intermediate
04 Christmas	10,801	10,160	641.8	2,674.3	24	1.5	24%	34%	Low Intermediate
04 Expresso	10,944	10,305	639.1	2,199.1	169	8.5	29%	42%	Intermediate
04 Mountain Top Lift Line	11,078	10,398	679.9	2,075.0	157	7.5	33%	73%	Expert
04 Powerline Glade	11,202	10,731	470.2	2,100.8	438	21.1	22%	31%	Low Intermediate
04 Powerline Trees	10,830	10,425	405.0	1,017.1	360	8.4	40%	65%	Expert
04 Ramshorn	11,238	10,461	777.0	3,421.6	269	21.1	23%	43%	Intermediate
04 Ramshorn Glade	11,126	10,726	400.2	1,763.1	200	8.1	23%	44%	Intermediate
04 Slifer Express	10,897	10,484	413.1	1,431.9	164	5.4	29%	37%	Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
04 Swingsville	10,908	10,237	671.7	2,601.5	262	15.6	26%	37%	Intermediate
04 Swingsville Ridge	11,250	10,791	459.3	3,260.2	173	13.0	14%	24%	Novice
04 The Skipper	10,912	10,600	311.4	1,111.3	123	3.2	28%	59%	Expert
04 Whistle Pig	11,028	10,739	289.0	969.4	146	3.2	30%	41%	Intermediate
04 Windows Road	11,163	10,901	262.3	2,547.8	80	4.7	10%	20%	Intermediate
04 Zot	11,173	10,372	801.3	2,805.6	170	10.9	29%	63%	Expert
05 High Noon	11,172	10,886	285.7	1,568.8	264	9.5	18%	46%	Advanced Intermediate
05 Morning Side Ridge	10,943	9,993	950.2	2,344.6	459	24.7	41%	56%	Expert
05 Ricky's Ridge	10,878	9,935	942.7	2,704.8	872	54.1	35%	55%	Expert
05 Straight Shot	10,943	10,030	913.3	2,376.9	669	36.5	38%	53%	Expert
05 Sun Up Catwalk	10,138	9,402	736.0	4,892.1	60	6.7	15%	25%	Intermediate
05 Sundown Catwalk	9,992	9,394	597.8	3,522.0	50	4.0	17%	24%	Intermediate
05 Widge's Ridge	10,757	10,059	697.9	2,016.2	616	28.5	35%	48%	Advanced Intermediate
06 Aspen Alley	8,811	8,631	180.6	777.8	57	1.0	23%	39%	Intermediate
06 Brisk Walk	9,279	8,770	509.4	6,779.6	25	3.9	8%	21%	Novice
06 Chair 6 Lift Line	9,399	9,243	156.3	774.6	992	17.6	20%	30%	Low Intermediate
06 Compromise	9,595	9,390	205.0	960.1	46	1.0	21%	21%	Novice
06 Follow Me Road	9,059	8,944	115.0	1,572.2	30	1.1	7%	11%	Beginner

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
06 Golden Peak Race	9,351	8,300	1,051.3	4,107.0	41	3.9	26%	49%	Advanced Intermediate
06 Golden Peak Terrain Park	9,399	8,233	1,166.5	5,256.2	420	50.7	22%	33%	Low Intermediate
06 Grand Junction Catwalk	9,399	9,273	126.1	2,371.4	35	1.9	5%	10%	Beginner
06 Pony Express	9,240	9,008	232.5	1,191.2	61	1.7	20%	41%	Intermediate
06 Ruders Run	9,177	8,947	229.3	1,156.3	145	3.8	20%	28%	Low Intermediate
06 Whippersnapper	9,399	8,842	556.8	2,648.0	130	7.9	21%	36%	Intermediate
06 Windish Way	8,401	8,344	57.2	765.7	25	0.4	7%	11%	Beginner
07 Baccarat	10,439	10,216	223.1	818.1	206	3.9	27%	44%	Intermediate
07 Dealer's Choice	10,562	9,837	724.3	2,676.4	324	19.9	27%	40%	Intermediate
07 Dueces Wild	10,880	10,301	579.5	1,733.7	653	26.0	33%	50%	Advanced Intermediate
07 Faro	10,755	10,189	566.4	1,580.0	568	20.6	36%	56%	Expert
07 Game Trail	10,323	9,970	352.8	3,904.0	28	2.5	9%	12%	Beginner
07 Lost Boy	10,983	9,803	1,180.1	7,514.7	179	30.9	16%	34%	Low Intermediate
07 Ouzo	10,690	9,943	747.3	2,143.1	250	12.3	35%	56%	Expert
07 Showboat	10,973	9,855	1,118.4	4,446.0	240	24.5	25%	47%	Advanced Intermediate
07 The Woods	10,840	10,000	840.0	2,635.5	221	13.4	32%	50%	Advanced Intermediate
07 Wild Card	10,891	9,803	1,087.8	4,225.0	299	29.0	26%	50%	Advanced Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
08 Bwana Loop	8,693	8,408	285	2,539.0	25	1.5	11%	25%	Novice
08 Cheetah	8,950	8,650	300.0	1,615.1	41	1.5	19%	22%	Novice
08 Lionshead Catwalk	8,485	8,335	150.1	2,701.7	25	1.6	6%	15%	Novice
08 Old 9 Lift Line	9,610	9,090	520.0	1,431.8	75	2.5	36%	54%	Expert
08 Old Midway Catwalk	9,050	9,000	50.0	668.9	25	0.4	7%	11%	Beginner
08 The Preserve	9,287	8,329	957.5	3,718.5	199	17.0	26%	47%	Advanced Intermediate
09 Headwall	11,085	10,904	181.9	3,313.3	1,055	80.3	10%	45%	Advanced Intermediate
09 The Slot	11,110	10,138	971.5	3,226.9	356	26.4	30%	42%	Advanced Intermediate
10 Blue Ox	10,959	9,565	1,394.8	5,173.4	158	18.8	27%	49%	Advanced Intermediate
10 Ch 10 Access	11,052	11,027	24.1	1,038.3	25	0.6	2%	7%	Beginner
10 Highline	11,022	9,273	1,749.4	7,034.0	188	30.4	25%	59%	Expert
10 Choker Cutoff	9,738	9,565	172.7	1,824.2	25	1.0	9%	14%	Novice
10 Highline	11,022	9,273	1,749.4	7,034.0	188	30.4	25%	59%	Expert
10 Klickity Klack	9,607	9,355	252.0	674.4	157	2.4	37%	45%	Advanced Intermediate
10 Log Chute	9,630	9,297	333.2	842.7	164	3.2	40%	48%	Advanced Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
10 Roger's Run	10,692	9,727	964.5	3,326.3	151	11.6	29%	51%	Advanced Intermediate
11 First Step	11,069	10,632	436.4	1,767.8	313	12.7	25%	55%	Expert
11 Flapjack	11,022	9,720	1,301.9	7,256.4	245	40.8	18%	35%	Intermediate
11 Gandy Dancer	10,986	10,007	979.4	3,412.9	247	19.4	29%	50%	Advanced Intermediate
11 Hairbag Alley	10,510	9,785	725.0	3,193.4	50	3.7	23%	43%	Advanced Intermediate
11 Lift Line	10,372	9,742	629.0	2,123.7	50	2.4	30%	42%	Advanced Intermediate
11 North Rim	11,143	10,870	272.7	738.2	315	5.3	37%	72%	Expert
11 Northface Catwalk	9,706	9,150	556.1	5,130.2	38	4.5	11%	17%	Novice
11 Northstar	10,219	9,793	425.5	1,874.3	457	19.6	23%	49%	Advanced Intermediate
11 Prima Cornice	10,781	9,977	803.6	1,895.1	247	10.7	42%	86%	Expert
11 Prima Lower	9,510	9,129	381.0	1,270.9	301	8.8	30%	40%	Intermediate
11 Prima Upper	10,791	9,510	1,280.7	3,645.8	282	23.6	35%	59%	Expert
11 Pronto	10,000	9,729	271.1	745.2	164	2.8	36%	55%	Expert
11 Riva Glade	10,757	9,980	776.6	2,391.5	320	17.6	32%	50%	Advanced Intermediate
11 Riva Ridge Lower	9,382	8,240	1,142.6	6,397.4	149	21.9	18%	40%	Intermediate
11 Riva Ridge Upper	10,777	9,686	1,090.4	3,800.1	210	18.3	29%	50%	Advanced Intermediate
11 Skid Road	9,667	9,280	386.9	4,142.1	30	2.9	9%	12%	Beginner

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
11 Snag Park	10,914	10,402	511.1	2,115.1	325	15.8	24%	44%	Intermediate
11 Snag Park Lower	10,840	10,525	315.0	1,623.8	1,200	44.7	19%	39%	Intermediate
11 Snag Park Upper	11,050	10,840	210.0	703.1	2,131	34.4	30%	65%	Expert
11 South Rim	11,236	10,645	591.0	2,100.7	198	9.5	28%	63%	Expert
11 Timberline Catwalk.	11,245	10,720	524.6	5,612.6	35	4.5	9%	14%	Novice
11 Snag Park Lower	10,840	10,525	315.0	1,623.8	1,200	44.7	19%	39%	Intermediate
11 Snag Park Upper	11,050	10,840	210.0	703.1	2,131	34.4	30%	65%	Expert
11 South Rim	11,236	10,645	591.0	2,100.7	198	9.5	28%	63%	Expert
11 Timberline Catwalk.	11,245	10,720	524.6	5,612.6	35	4.5	9%	14%	Novice
11 Timberline Face	11,235	11,100	135.0	547.9	314	4.0	25%	39%	Intermediate
11 Tourist Trap	9,685	9,380	305.0	732.5	364	6.1	42%	58%	Expert
11 Trans Montane	9,964	9,708	256.8	4,026.2	25	2.3	6%	9%	Beginner
12 Gopher Hill	8,369	8,238	131.9	1,039.0	336	8.0	13%	18%	Novice
14 Boomer	11,218	10,720	498.0	2,523.5	271	15.7	20%	35%	Intermediate
11 Tourist Trap	9,685	9,380	305.0	732.5	364	6.1	42%	58%	Expert
11 Trans Montane	9,964	9,708	256.8	4,026.2	25	2.3	6%	9%	Beginner
12 Gopher Hill	8,369	8,238	131.9	1,039.0	336	8.0	13%	18%	Novice
14 Boomer	11,218	10,720	498.0	2,523.5	271	15.7	20%	35%	Intermediate
14 Sourdough	11,230	10,762	468.1	2,114.6	283	13.8	22%	34%	Low Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
14 Tin Pants	11,207	10,799	408.3	2,668.4	201	12.3	15%	22%	Novice
14 Tin Pants Catwalk	11,023	10,971	51.3	681.6	30	0.5	8%	10%	Beginner
14 Whiskey Jack	11,239	10,735	504.3	2,642.8	182	11.1	19%	35%	Low Intermediate
14 Whiskey Jack Catwalk	11,230	10,917	312.6	3,108.5	30	2.1	10%	14%	Novice
15 Teaching Area	10,335	10,223	112.2	934.8	652	14.0	12%	17%	Novice
18 Lighting Coyote	10,295	10,255	40.0	360.2	100	0.8	11%	11%	Beginner
19 Born Free	10,283	8,130	2,152.9	10,232.5	264	62.1	21%	46%	Advanced Intermediate
19 Gondola Lift Line	9,920	9,569	351.6	1,769.1	144	5.8	20%	38%	Intermediate
19 Ledges Lower	9,599	9,171	427.6	1,256.0	839	24.2	34%	48%	Advanced Intermediate
18 Lighting Coyote	10,295	10,255	40.0	360.2	100	0.8	11%	11%	Beginner
19 Born Free	10,283	8,130	2,152.9	10,232.5	264	62.1	21%	46%	Advanced Intermediate
19 Gondola Lift Line	9,920	9,569	351.6	1,769.1	144	5.8	20%	38%	Intermediate
19 Ledges Lower	9,599	9,171	427.6	1,256.0	839	24.2	34%	48%	Advanced Intermediate
19 Minnie's Mile Lower	9,642	9,103	539.2	1,682.8	149	5.8	32%	53%	Advanced Intermediate
19 Post Road	9,713	8,946	766.9	8,489.7	30	5.9	9%	25%	Novice
19 Simba Face	8,955	8,672	283.0	699.9	396	6.4	40%	57%	Expert
19 Simba Lower	8,672	8,279	393.0	1,811.6	231	9.6	22%	37%	Intermediate
19 Simba Racer	10,291	10,003	287.9	964.1	197	4.4	30%	44%	Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
21 Poppyfields West	11,219	10,277	941.9	3,905.5	639	57.3	24%	41%	Intermediate
21 Silk Road	10,455	9,788	666.7	8,254.2	60	11.4	8%	20%	Intermediate
21 Sleepy Time	11,085	9,520	1,565.0	16,526.3	30	11.4	9%	20%	Intermediate
21 to Two Elk	11,375	11,200	175.0	2,798.5	114	7.3	6%	15%	Intermediate
26 Pride Upper	10,008	9,703	305.1	1,527.0	231	8.1	20%	37%	Intermediate
26 Pride Upper Face	10,088	10,008	79.5	224.0	139	0.7	35%	46%	Advanced Intermediate
26 Safari	9,762	8,366	1,396.2	4,935.2	275	31.1	28%	53%	Advanced Intermediate
27 Epic Mix Racing	9,713	9,410	303.6	1,489.8	274	9.4	20%	33%	Low Intermediate
27 Pay-to-Race	9,668	9,327	341.6	1,695.8	252	9.8	20%	40%	Intermediate
29 Ranger Racoon	8,260	8,230	30.0	433.0	187	1.9	7%	8%	Beginner
33 Gold Peak Carpet	8,300	8,280	20.0	201.0	70	0.3	10%	10%	Beginner
34 Lionshead Kids	8,130	8,120	10.0	100.5	80	0.2	10%	10%	Beginner
35 Thunder Cat	10,275	10,265	10.0	100.5	60	0.1	10%	10%	Beginner
36 Emperor's Choice	11,239	10,076	1,163.3	4,463.4	557	57.1	26%	49%	Advanced Intermediate
36 West Wall	10,900	9,900	1,000.2	3,184.4	1,271	92.9	31%	58%	Expert
37 Big Rock Park	10,961	10,012	949.2	5,131.2	258	30.4	18%	32%	Low Intermediate
37 Cloud 9	11,480	9,572	1,908.4	18,396.0	57	24.1	10%	30%	Low Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
37 Encore	10,793	9,618	1,175.0	3,919.7	191	17.2	30%	77%	Expert
37 Heavy Metal	10,895	10,029	866.7	3,233.6	261	19.4	27%	56%	Expert
37 Iron Mask	11,096	10,183	912.7	2,809.2	515	33.2	32%	66%	Expert
37 Little Ollie	10,962	10,081	881.7	2,852.6	450	29.4	31%	48%	Advanced Intermediate
37 Lovers Leap	11,299	10,318	980.3	3,529.0	430	34.9	28%	70%	Expert
37 Skree Field	11,254	10,499	755.4	2,781.2	513	32.7	27%	66%	Expert
37 Steep and Deep	11,479	10,609	869.7	2,920.9	309	20.7	30%	72%	Expert
37 The Divide	11,476	9,613	1,863.4	8,345.1	222	42.5	22%	63%	Expert
38 Champagne Glade	11,475	10,150	1,324.6	4,769.9	657	71.9	28%	52%	Advanced Intermediate
38 In The Wuides	11,263	10,128	1,134.7	3,609.8	767	63.5	31%	46%	Advanced Intermediate
38 Kellys Toll Road	10,136	9,580	556.0	6,385.2	30	4.4	9%	17%	Intermediate
38 Montane Glade	10,981	10,149	831.3	2,520.8	1,067	61.8	33%	47%	Advanced Intermediate
39 China Spur	10,121	9,977	144.5	1,512.8	35	1.2	10%	20%	Intermediate
39 Grand Review	11,563	10,083	1,480.1	6,451.3	243	36.0	23%	51%	Advanced Intermediate
39 Hornsilver	11,555	10,573	981.7	3,554.6	379	30.9	28%	51%	Advanced Intermediate
39 Petes Lift Line	10,809	10,041	768.6	2,488.0	173	9.9	31%	45%	Advanced Intermediate
39 Resolution Upper	11,512	10,628	884.2	4,150.4	312	29.7	21%	53%	Advanced Intermediate

TABLE A -1. EXISTING & UPGRADED DEVELOPED TERRAIN SPECS (CONTD.)

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
39 Resolution Lower	10,436	10,169	267.4	839.6	203	3.9	32%	47%	Advanced Intermediate
39 The Star	11,136	10,104	1,031.7	3,590.0	438	36.1	29%	49%	Advanced Intermediate
40 Fall Line	9,740	9,361	378.9	1,257.5	552	15.9	32%	37%	Intermediate
40 Golden Peak Race	10,059	9,307	752.2	2,816.4	121	7.8	28%	54%	Advanced Intermediate
40 Slalom Alley	9,956	9,445	511.3	1,641.9	220	8.3	33%	48%	Advanced Intermediate
1A'	10,651	10,411	240.7	988	104	2.4	25%	34%	Low Intermediate
1B	10,698	10,124	574.2	1,830	119	5.0	33%	55%	Expert
1E	10,344	9,766	577.9	2,217	132	6.7	27%	37%	Intermediate
1E'	10,152	9,786	365.5	1,261	109	3.2	30%	41%	Intermediate
1H	10,518	9,688	830.3	2,659	124	7.6	33%	47%	Advanced Intermediate
1J	10,487	9,921	566.8	1,654	31	1.2	37%	41%	Intermediate
1K	10,484	10,084	400.7	1,334	122	3.7	32%	39%	Intermediate
1Z	10,187	9,969	217.9	623	116	1.7	38%	56%	Expert
2A	10,523	9,926	597.3	2,168	134	6.7	29%	42%	Intermediate
2E	11,469	10,464	1,005.7	3,077	121	8.5	35%	52%	Advanced Intermediate
3A	11,407	10,627	780.5	4,366	107	10.7	18%	58%	Expert
3A'	10,667	10,191	476.5	3,229	84	6.2	15%	28%	Low Intermediate

Trail Area/Name	Top Elevation	Bottom Elevation	Vertical Drop	Slope Length	Avg. Width	Slope Area	Avg. Grade	Max Grade	Skier/ Rider Ability Level
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	Acres	(%)	(%)	
3B	11,275	10,907	368.0	1,398	114	3.7	27%	38%	Intermediate
3B'	11,251	10,622	628.7	2,728	52	3.3	24%	71%	Expert
3C	10,975	10,020	955.1	3,757	119	10.3	26%	44%	Intermediate
3D	11,022	10,004	1,017.6	3,763	139	12.0	28%	53%	Advanced Intermediate
3D'	10,893	10,056	837.2	2,955	119	8.1	30%	40%	Intermediate
3G	10,935	10,438	496.7	1,614	126	4.7	32%	40%	Intermediate
3G'	10,634	10,128	506.1	1,885	132	5.7	28%	35%	Intermediate
3I	10,965	10,590	375.4	1,023	108	2.5	40%	52%	Advanced Intermediate
4D	10,153	9,801	352.3	779	126	2.3	51%	69%	Expert
4F	10,133	9,575	558.1	4,948	37	4.2	11%	28%	Low Intermediate
6A	10,304	9,979	324.9	3,866	42	3.7	8%	39%	Intermediate
GP_04	9,173	8,750	422.6	1,450	168	5.6	31%	51%	Advanced Intermediate
PT1	10,250	10,240	10	140	62	0.2	7%	8%	Low Intermediate
PT2	9,960	9,860	100	603	131	1.8	17%	20%	Low Intermediate
PT3	9,810	9,730	80	800	53	1.0	10%	20%	Low Intermediate
PT4	10,020	9,860	160	875	142	2.9	19%	20%	Low Intermediate
PT5	9,570	9,340	230	1,041	132	3.2	22%	26%	Low Intermediate
PT6	9,190	9,140	62	323	67	0.5	19%	21%	Low Intermediate
EXISTING TOTAL						3,147.5			

Figure 1-1- Proposed Forest Health Vegetation Treatment Vail Ski Area

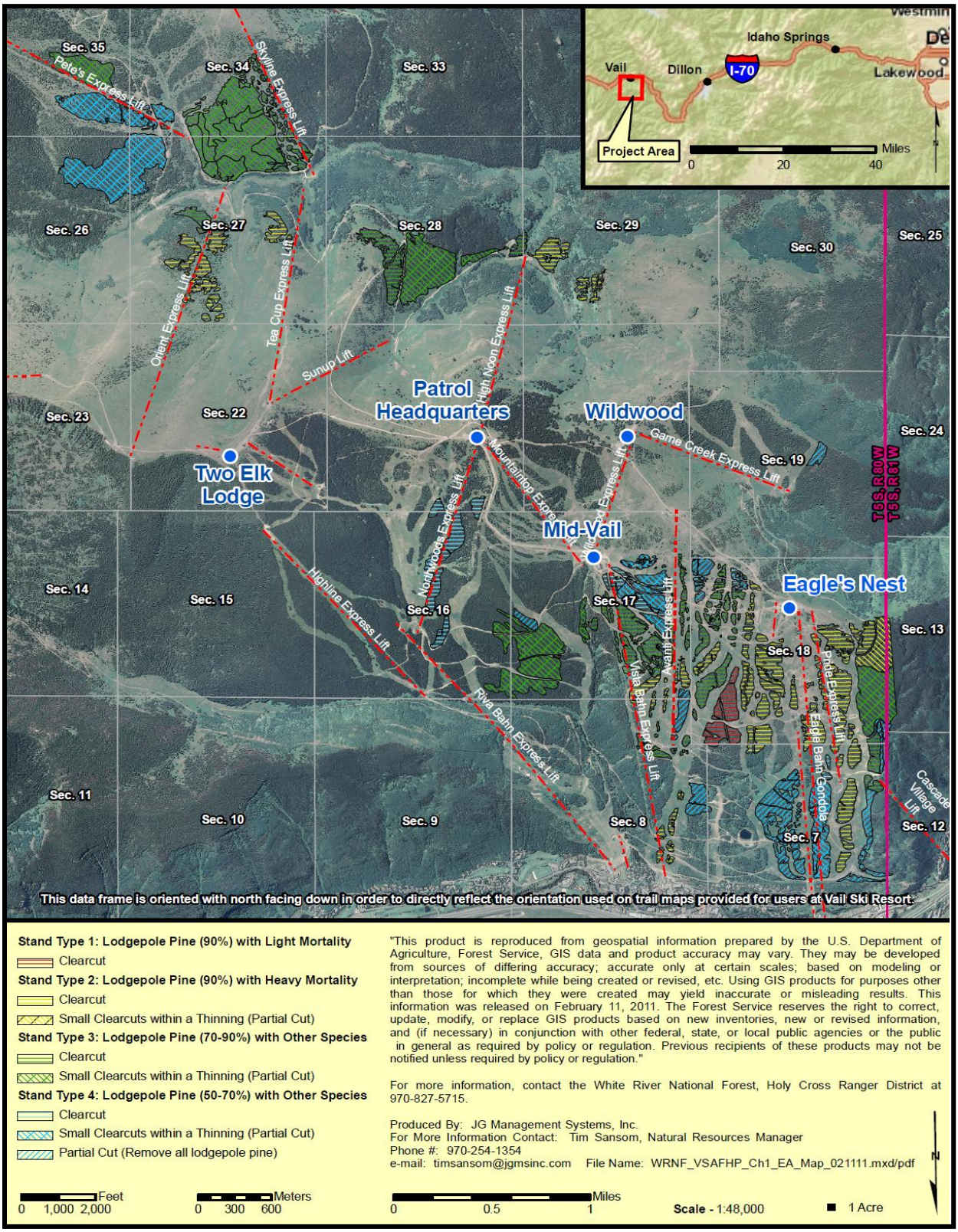


Figure 2- 1- Front side of Vail Mountain

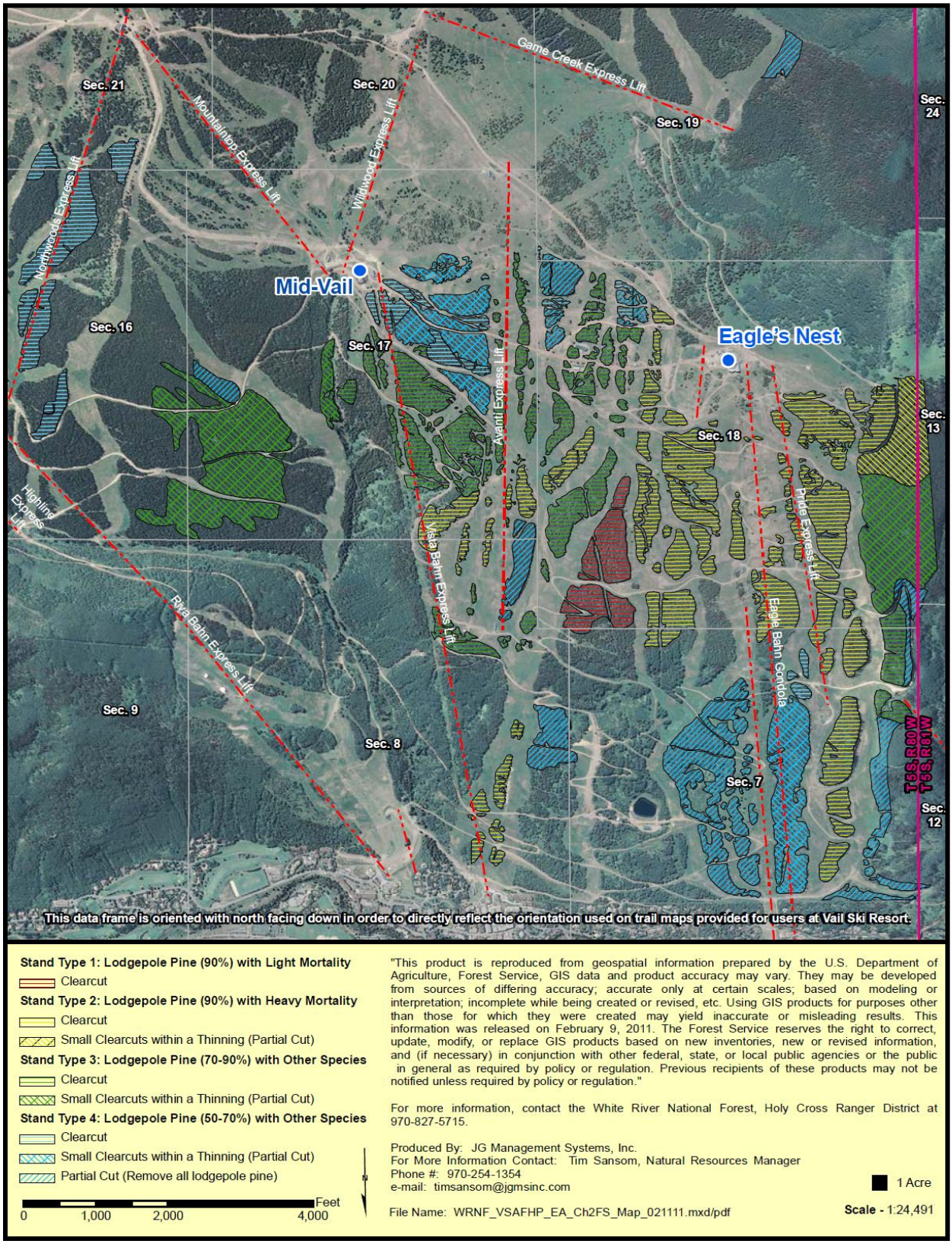
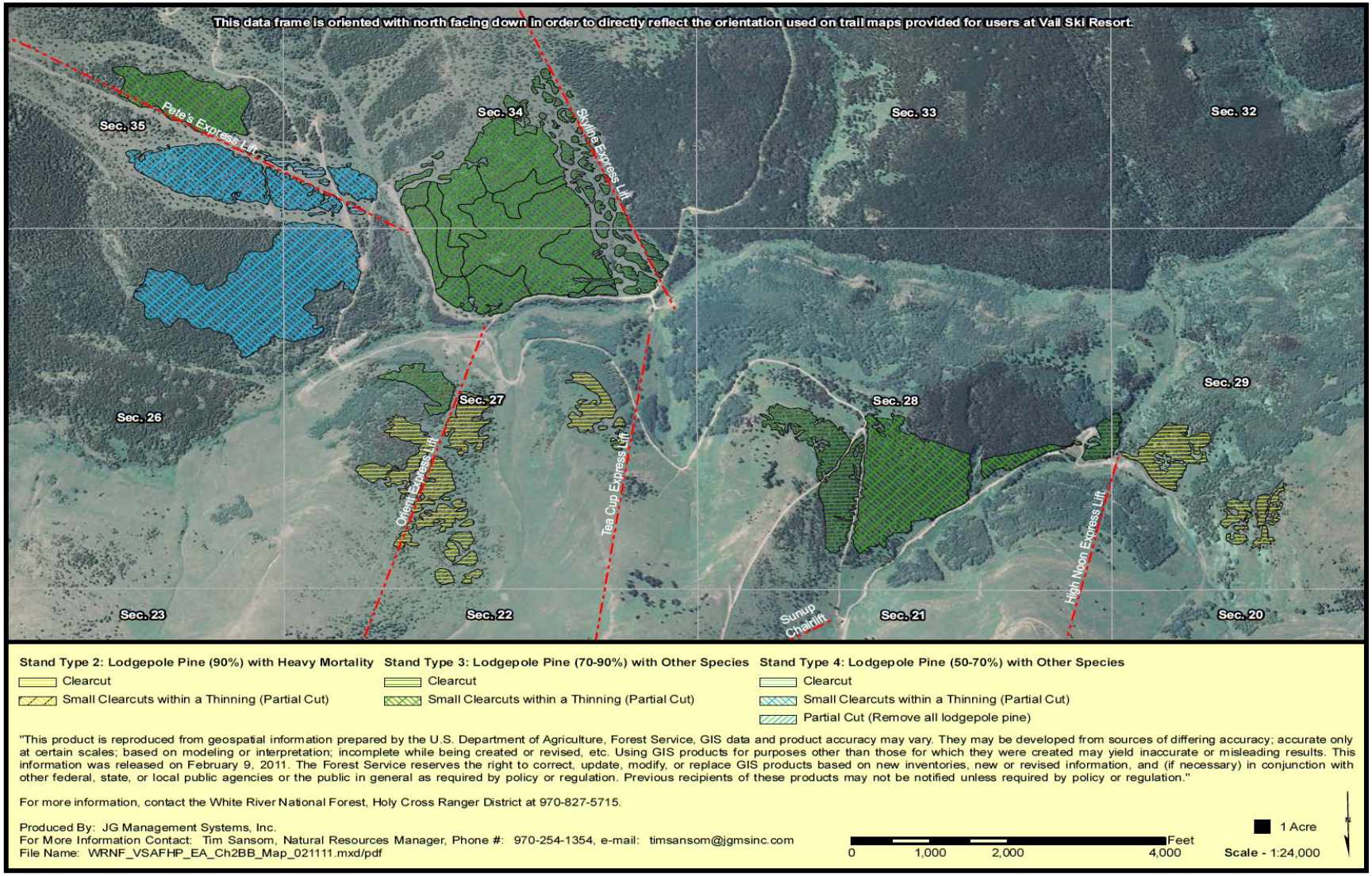
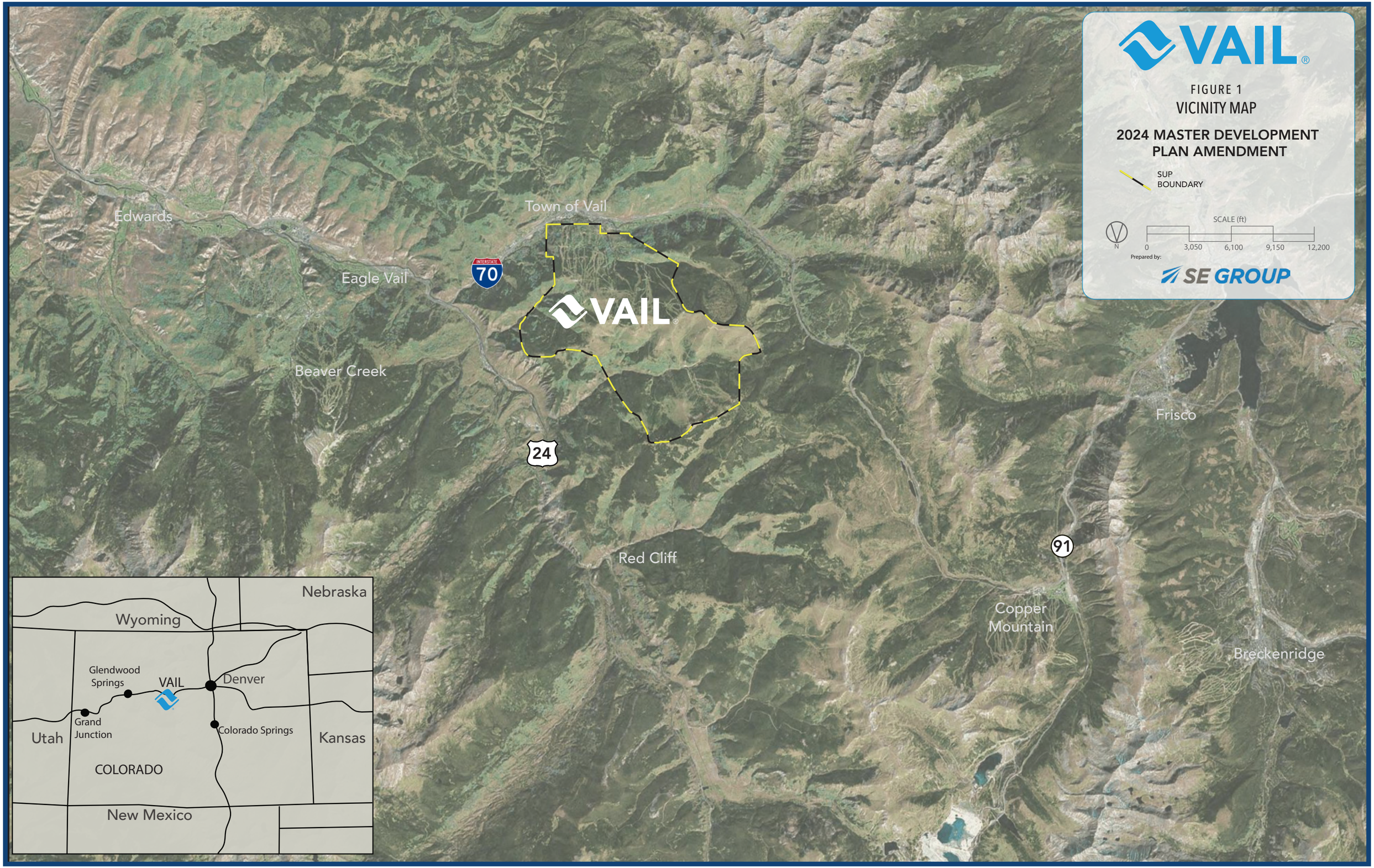
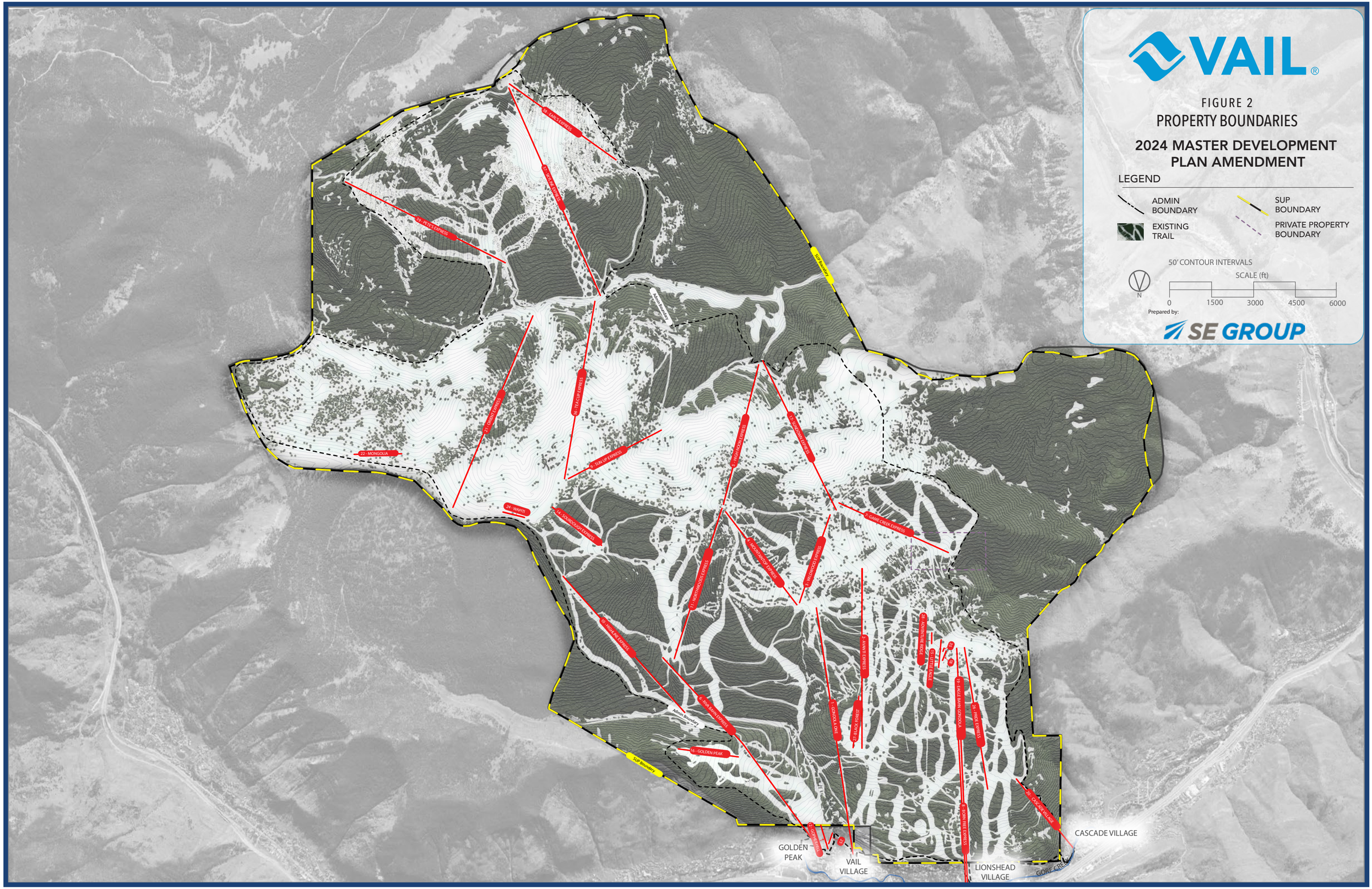
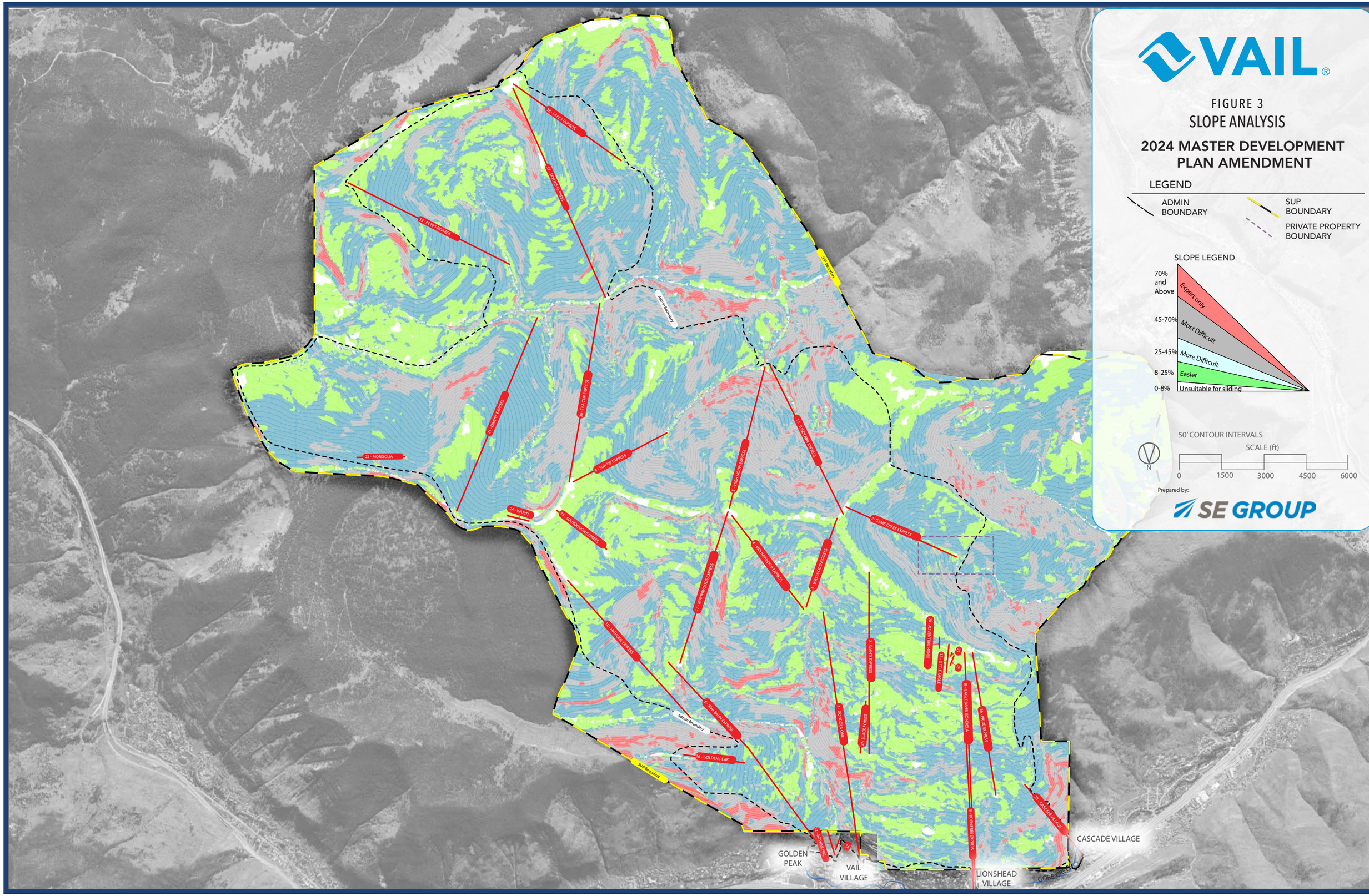


Figure 2- 2- Backside of Vail Mountain




VAIL
FIGURE 1
VICINITY MAP
2024 MASTER DEVELOPMENT PLAN AMENDMENT
SUP BOUNDARY
SCALE (ft)
N
0
3,050
6,100
9,150
12,200
Prepared by:
SE GROUP
Edwards
Eagle Vail
Town of Vail
Beaver Creek
Frisco
Red Cliff
Copper Mountain
Breckenridge
INTERSTATE 70
24
91
Nebraska
Wyoming
Glendwood Springs
VAIL
Denver
Grand Junction
Colorado Springs
Utah
Kansas
COLORADO
New Mexico


VAIL
FIGURE 2
PROPERTY BOUNDARIES
2024 MASTER DEVELOPMENT PLAN AMENDMENT
LEGEND
ADMIN BOUNDARY
SUP BOUNDARY
EXISTING TRAIL
PRIVATE PROPERTY BOUNDARY
50' CONTOUR INTERVALS
SCALE (ft)
0
1500
3000
4500
6000
N
Prepared by:
SE GROUP
GOLDEN PEAK
VAIL VILLAGE
LIONSHEAD VILLAGE
CASCADE VILLAGE
GORE CREEK
22 - MONGOLIA
24 - WAPITI
16 - GOLDEN PEAK
SUP Boundary
Admin Boundary


VAIL
FIGURE 3
SLOPE ANALYSIS
2024 MASTER DEVELOPMENT PLAN AMENDMENT
LEGEND
ADMIN BOUNDARY
SUP BOUNDARY
PRIVATE PROPERTY BOUNDARY
SLOPE LEGEND
70% and Above
Expert only
45-70%
Most Difficult
25-45%
More Difficult
8-25%
Easier
0-8%
Unsuitable for sliding
50' CONTOUR INTERVALS
SCALE (ft)
0
1500
3000
4500
6000
N
Prepared by:
SE GROUP
GOLDEN PEAK
VAIL VILLAGE
LIONSHEAD VILLAGE
CASCADE VILLAGE
GORE CREEK
Admin Boundary
SUP Boundary
22 - MONGOLIA
24 - WAPITI
16 - GOLDEN PEAK
7 - GAME CREEK EXPRESS
1 - GONDOLA ONE
27 - BLACK FOREST
2 - AVANTI EXPRESS
28 - ADVENTURE RIDGE
15 - LITTLE EAGLE
19 - EAGLE BAHN GONDOLA
8 - BORN FREE EXPRESS
20 - CASCADE VILLAGE
6 - RIVA BAHN EXPRESS
10 - HIGHLINE EXPRESS
11 - NORTHWOODS EXPRESS
14 - SOURDOUGH EXPRESS
21 - ORIENT EXPRESS
36 - TEACUP EXPRESS
9 - SUN UP EXPRESS
5 - HIGH NOON EXPRESS
4 - MOUNTAINTOP EXPRESS
3 - WILDWOOD EXPRESS
12 - SUNDOWN EXPRESS
38 - EARLS EXPRESS
37 - SKYLINE EXPRESS
39 - PETE'S EXPRESS

VAIL®

FIGURE 4

ASPECT ANALYSIS

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- ADMIN BOUNDARY
- SUP BOUNDARY
- PRIVATE PROPERTY BOUNDARY

ASPECT LEGEND

50' CONTOUR INTERVALS

SCALE (ft)

N

0 1500 3000 4500 6000

Prepared by:

SE GROUP

SOUTH GAME CREEK BOWL
CHINA BOWL
SUN UP BOWL
SUN DOWN BOWL
GAME CREEK BOWL
TOP OF LIFT 14 MAINTENANCE
BUFFALO'S RESTAURANT PATROL HEADQUARTERS
HENRY'S HUT
WILDWOOD RESTAURANT AND PATROL OUTPOST
TWO ELK RESTAURANT
TWO ELK PATROL OUTPOST
GAME CREEK CLUB / RESTAURANT
STEDDY'S DECK
WINTER TUBING
EAGLE'S NEST
EAGLE'S NEST PATROL OUTPOST
MOUNTAIN COASTER
THE 10TH
MID VAIL
SNOW CAT MAINTENANCE BUILDING
JEBBIE'S DECK
BLACK FOREST RACE CENTER
GOLDEN PEAK PATROL OUTPOST
THE COOP
RACE CITY
CHILDREN'S CENTER
CASCADE VILLAGE
GOLDEN PEAK
VAIL VILLAGE
WORLD CUP STORAGE
LIONSHEAD VILLAGE
GORE CREEK
SUP Boundary
Admin Boundary
21 - GREAT EXPECTATIONS
16 - TEA CUP EXPRESS
9 - SUN UP EXPRESS
5 - HIGH NOON EXPRESS
12 - SUNDOWN EXPRESS
7 - GAME CREEK EXPRESS
24 - WAPITI
14 - SOURDOUGH EXPRESS
11 - NORTHWOODS EXPRESS
4 - MOUNTAINTOP EXPRESS
3 - WILDWOOD EXPRESS
10 - HIGHLINE EXPRESS
6 - IRAA BAHN EXPRESS
1 - GONDOLA ONE
2 - WAPITI EXPRESS
27 - BLACK FOREST
29 - EAGLE BAHN GONDOLA
28 - PRIDE EXPRESS
8 - BORN FREE EXPRESS
25 - ADVENTURE RIDGE CARPET
26 - TRAVERSE EXPRESS
20 - CASCADE VILLAGE
13 - GORE CREEK
16 - GOLDEN PEAK
Timberline Catwalk
Snake Park
Northwoods
Northstar
Prima Connect
Rogers Run
Highline
Blue Ox
Log Chute
Northface Catwalk
3rd Road
Promontose
Northface Connect
Pronto
Prima
Track Skier
Whiskey Jack
Boomer
Trapper
Flap Jack
Gypsy Dancer
Timberline Catwalk
Ramshorn Chute
Ramshorn
Ramshorn Glade
Wyndows Road
Wyndows
Wyndows Catwalk
Wyndham Ridge
Northstar
Zoom
Silver Express
Pumphouse
Twinsville
Christmas
Mid Vail Express
Overpass
Chaparral
Blue Grouse
Riva Ridge
Chaparral Road
Tourist Trap
Ptarmigan Chutes
Ptarmigan Trail
Ptarmigan Ridge
Ptarmigan Catwalk
Birch Walk
Whisper Canyon
Pay Express
Golden Peak Terrain Park
Slalom Alley
Tall Line
Golden Peak Race
Golden Peak Catwalk
Mid Gradient
Glade Slopes
Lindsey's
Whistler Run
Glacier Express
Glacier Road
Lionshead Catwalk
Chair 5
Chair 4
Chair 3
Chair 2
Chair 1
Seldom
Widge's Ridge
Ricky's Ridge
Forever
Wow
Morning Ridge
Freight Free
Lost Boy
The Woods
Bacarat
Dealer's Choice
Wildcard
Showboat
Deuces Wild
Fang
Kangaroo Corner
Eagle's Nest Homeswest
Edge Basin
Le Grande
Cloud
Cloud Glade
Winter Trail
The Meadows
Look Ma
Challenge
Lodgepole
Upper Avanti
Pickaroon
Avanti
Mid Avanti
Gas Shack
Lodgepole Catwalk
Prance Parkway
Own Ride
Coyote Crossing
Lodges
Columbine
Upper Minturn Nine
Minturn Nine
Minturn Chute
Minturn Catwalk
Happy Valley
Born Free
Safari
Sitzmark
Sitzmark Catwalk
Pickaroon Catwalk
Avanti
Pay To Route
Lodge Catwalk
Lodge Connect
Lodge Trail
Ptarmigan Catwalk
Ptarmigan Connect
Ptarmigan Trail
Ptarmigan Ridge
Ptarmigan Chutes
Ptarmigan Trail
Ptarmigan Connect
Ptarmigan Catwalk

VAIL®

FIGURE 6
BACK SIDE EXISTING WINTER CONDITIONS

2024 MASTER DEVELOPMENT PLAN AMENDMENT

TRAIL ABILITY LEVELS

- NOVICE
- INTERMEDIATE
- ADVANCED

LEGEND

- EXISTING LIFT
- SUP BOUNDARY
- MOUNTAIN ROADS
- ADMIN BOUNDARY
- EXISTING TRAIL
- EXISTING BUILDING

50' CONTOUR INTERVALS

SCALE (ft)

N

0 900 1800 2700 3600

Prepared by:

SE GROUP

BELLE'S CAMP

BLUE SKY BASIN PATROL OUTPOST

EARL'S BOWL

PETE'S BOWL

COMMANDO BOWL

38 - EARL'S EXPRESS

37 - SKYLINE EXPRESS

39 - PETE'S EXPRESS

THE DAWG HOUSE

SUP Boundary

Admin Boundary

Champagne Glade

In The Wuides

Montane Glade

Resolution Upper

Resolution Lower

Hornsilver

Big Rock Park

Little Pete

The Star

Grand Review

Post Script Glade

Lower's Leap

Ridge Master

Jewel Medal

The Prairie

Rock 'n' Roll Bowl

Ore Bowl

Ore Bowl Chutes

Tea Cup Glade

Admin Boundary

Mamba Valley

Why Over Yonder

Morning Thunder

TEACUP BOWL

Sunrise Ridge

Over Boulder

Chicken Yard

Apres Vous

Cow's Face

Campbell's

Mitt's Face

High Noon

Yonder Gully

SUN UP BOWL

Wow

Windows

Skyline Shot

Morning Side Ridge

SUN DOWN BOWL

Sunburst Glade

Forever

Seldom

Ptarmigan Ridge

Ricky's Ridge

Wedge's Ridge

Ptarmigan Cornice

SOUTH GAME CREEK BOWL

Sunburst Catwalk

Nexus

Shortcake

GAME CREEK BOWL

Lost Boy

Deadman's Chute

Backcast

The Wood

Wedge Leg

Shortcake

Sunburst Glade

21 - ORIENT EXPRESS

36 - TEA CUP EXPRESS

9 - SUN UP EXPRESS

5 - HIGH NOON EXPRESS

17 - SUNDOWN EXPRESS

2 - GAME CREEK EXPRESS

14 - SOURDOUGH EXPRESS

22 - MONGOLIA

24 - WAPITI

Admin Boundary

SUP Boundary

Orient Express

Shangri-La Chutes

Shangri-La Glade

Silk Road

China Bowl Express

Poppy's Path East

Poppy's Path

Poppyfield West

Gunsight

Gunsight Chutes East

Gunsight Chutes

Shangri-La

Gorge Park

Red Square

Rasputin's Revenge

Bolshoi Ballroom

Upper Mongolia Bowl

Mongolia Bowl

MONGOLIA BOWL

SIBERIA BOWL

CHINA BOWL

West Chutes

MacGuire

Gangplank Horn

Yurt

Sleepytime Road

Tumbleweed Traverse

Upper Snug Park

Sunburst Glade

Lower Snug Park

Snug Park

Ore Bowl

Ore Bowl Chutes

Ore Bowl Cornice

Rock 'n' Roll Bowl

Ore Bowl

Ore Bowl Chutes

Ore Bowl Cornice

Rock 'n' Roll Bowl

TOP OF LIFT 14 MAINTENANCE

FAR EAST PUMP HOUSE

TWO ELK RESTAURANT

BUFFALO'S RESTAURANT PATROL HEADQUARTERS

WILDWOOD RESTAURANT AND PATROL OUTPOST

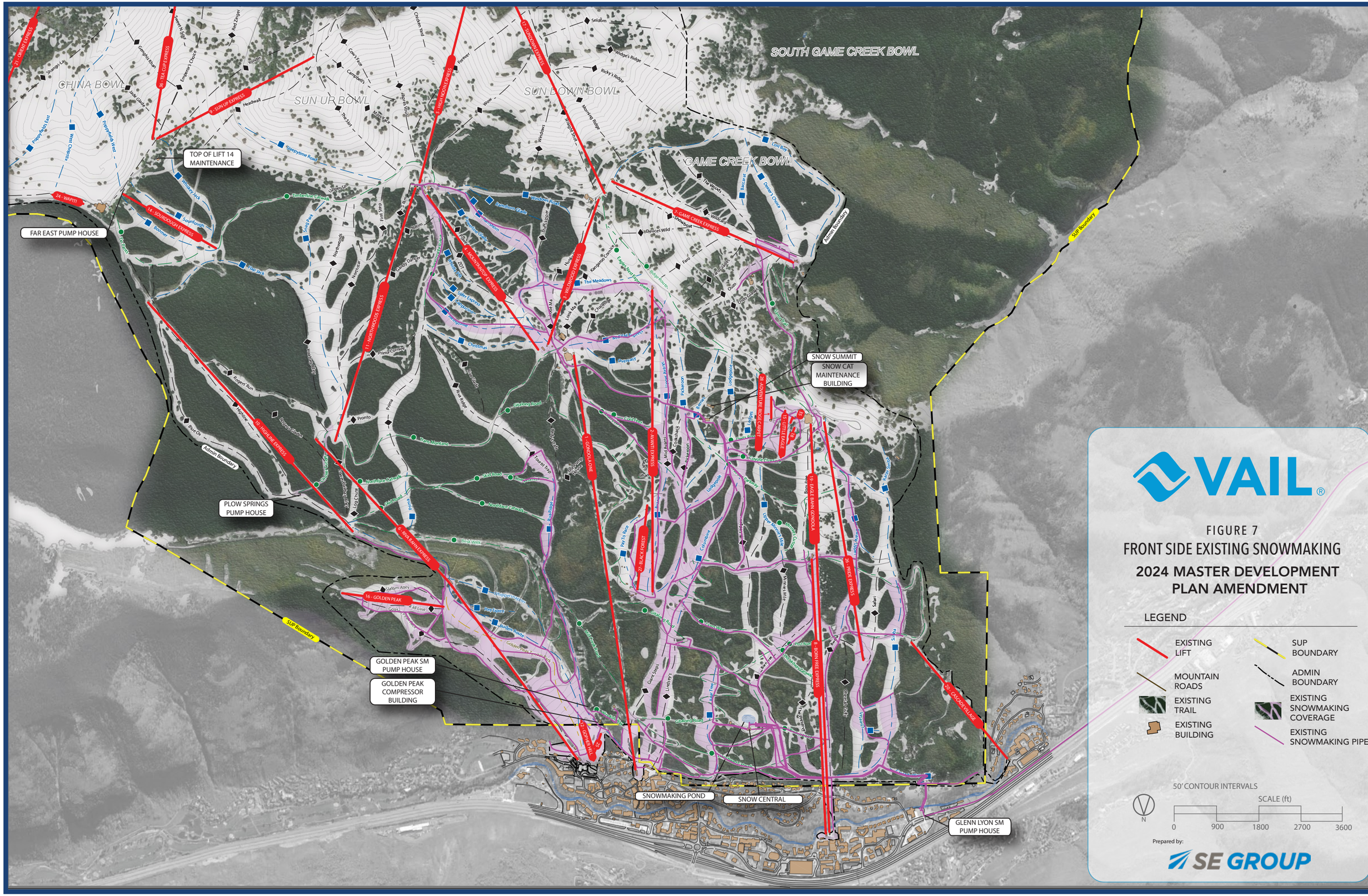


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FIGURE 7
FRONT SIDE EXISTING SNOWMAKING
2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT
- MOUNTAIN ROADS
- EXISTING TRAIL
- EXISTING BUILDING
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING SNOWMAKING COVERAGE
- EXISTING SNOWMAKING PIPE

50' CONTOUR INTERVALS

N

SCALE (ft)

0 900 1800 2700 3600

Prepared by:

SE GROUP

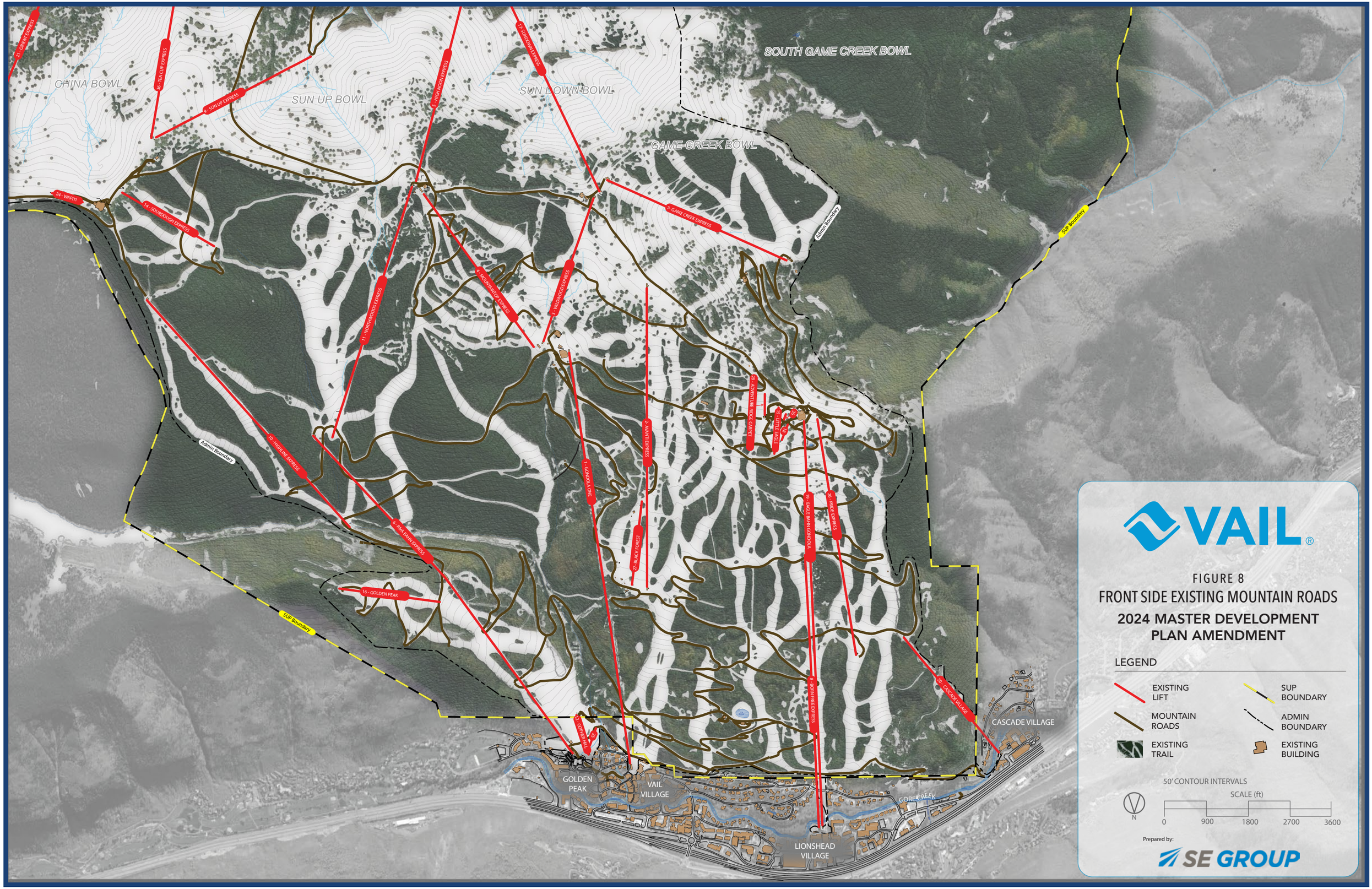

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FIGURE 8

FRONT SIDE EXISTING MOUNTAIN ROADS

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT
- MOUNTAIN ROADS
- EXISTING TRAIL
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING BUILDING

50' CONTOUR INTERVALS

N

SCALE (ft)

0 900 1800 2700 3600

Prepared by:

SE GROUP

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FIGURE 9
BACK SIDE EXISTING MOUNTAIN ROADS

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT
- SUP BOUNDARY
- MOUNTAIN ROADS
- ADMIN BOUNDARY
- EXISTING TRAIL
- EXISTING BUILDING

50' CONTOUR INTERVALS

SCALE (ft)

N

0 900 1800 2700 3600

Prepared by:

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EARL'S BOWL

PETE'S BOWL

COMMANDO BOWL

MONGOLIA BOWL

SIBERIA BOWL

CHINA BOWL

TEACUP BOWL

SUN UP BOWL

SUN DOWN BOWL

SOUTH GAME CREEK BOWL

GAME CREEK BOWL

38 - EARL'S EXPRESS

37 - SKYLINE EXPRESS

39 - PETE'S EXPRESS

21 - ORIENT EXPRESS

36 - TEA CUP EXPRESS

9 - SUN UP EXPRESS

5 - HIGH NOON EXPRESS

17 - SUN DOWN EXPRESS

7 - GAME CREEK EXPRESS

22 - MONGOLIA

24 - WAPITI

14 - SOURDOUGH

Admin Boundary

SUP Boundary

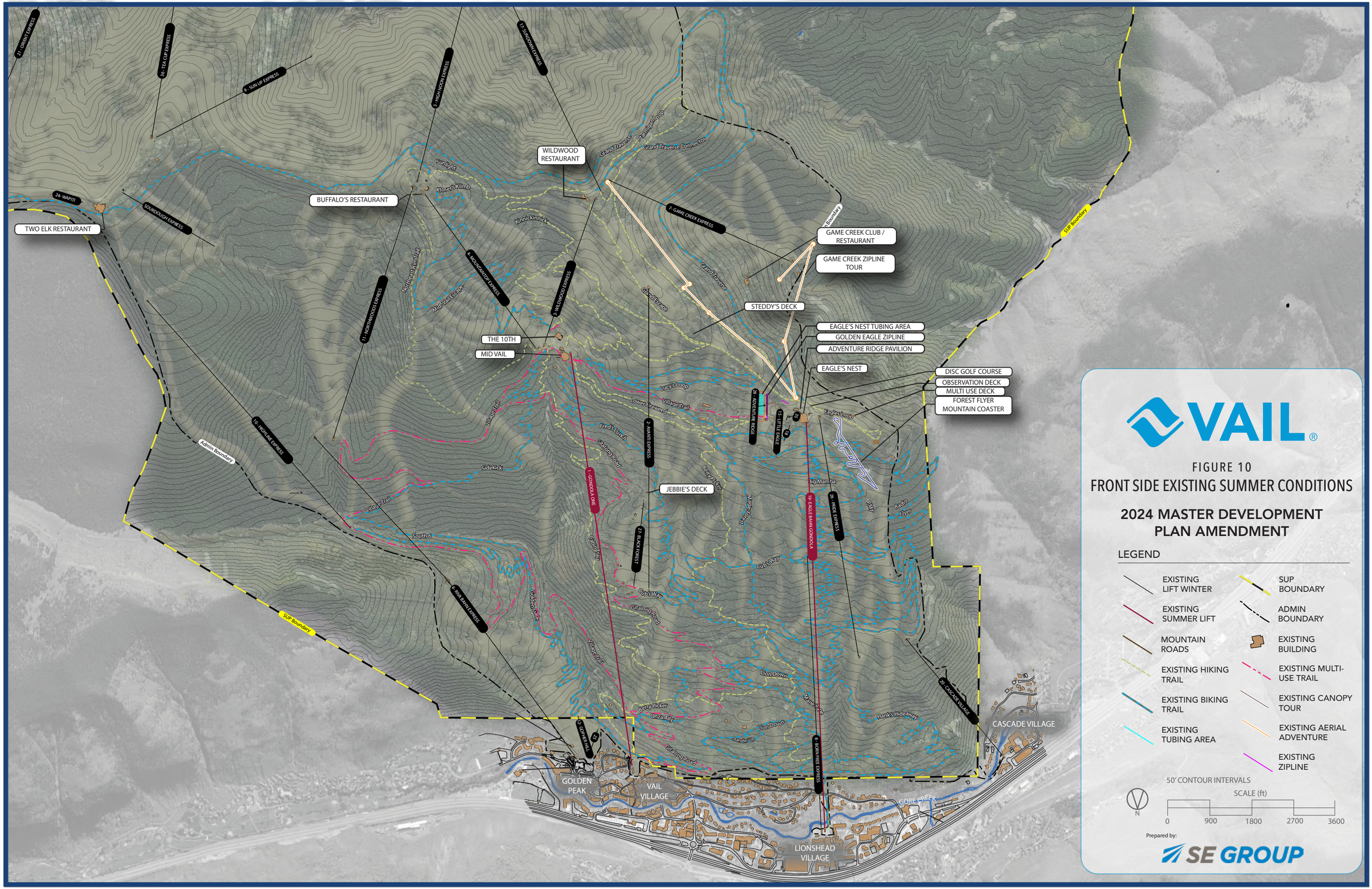

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FIGURE 10

FRONT SIDE EXISTING SUMMER CONDITIONS

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT WINTER
- EXISTING SUMMER LIFT
- MOUNTAIN ROADS
- EXISTING HIKING TRAIL
- EXISTING BIKING TRAIL
- EXISTING TUBING AREA
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING BUILDING
- EXISTING MULTI-USE TRAIL
- EXISTING CANOPY TOUR
- EXISTING AERIAL ADVENTURE
- EXISTING ZIPLINE

50' CONTOUR INTERVALS

N

SCALE (ft)

0 900 1800 2700 3600

Prepared by:

SE GROUP

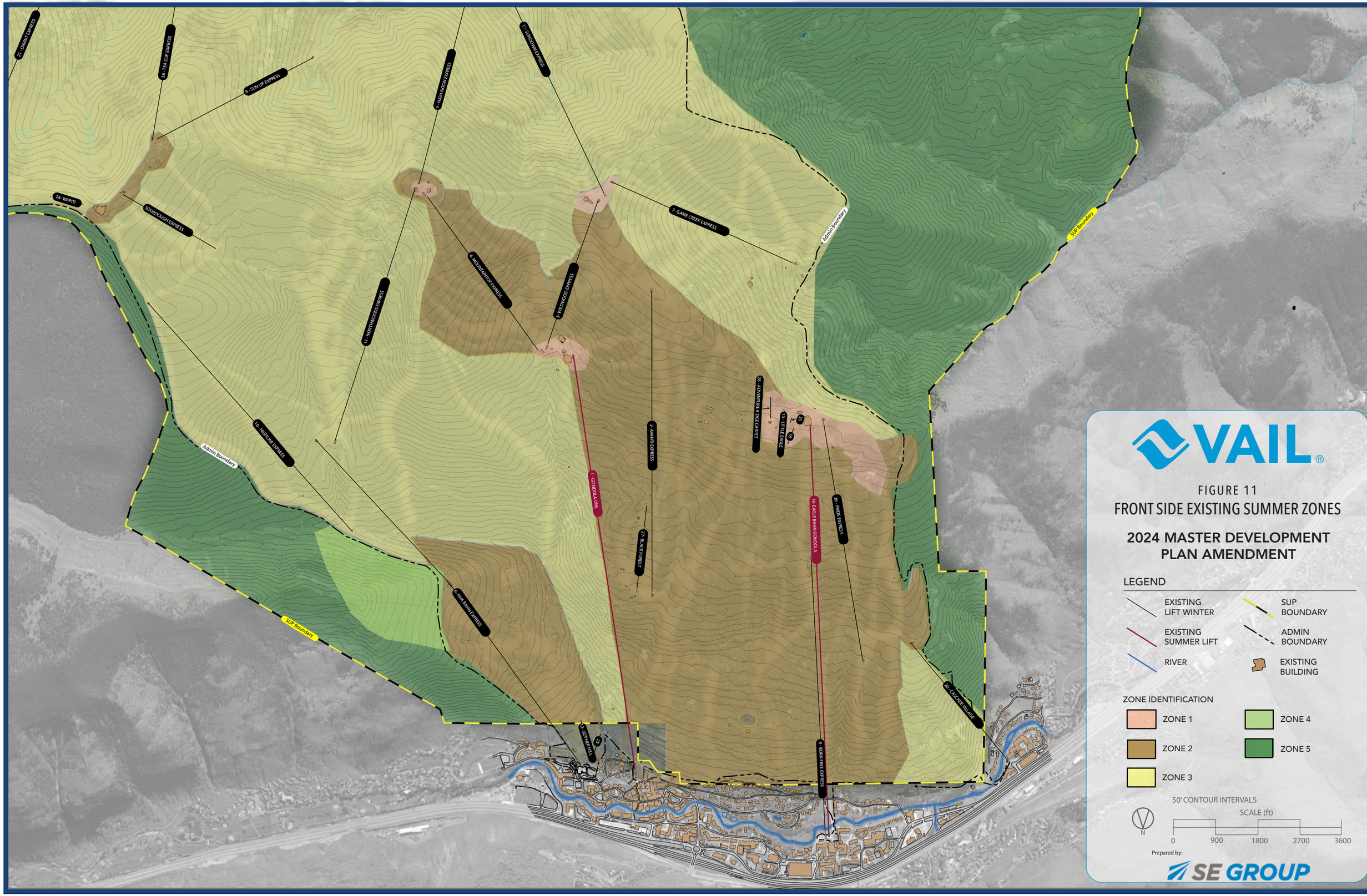

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FIGURE 11

FRONT SIDE EXISTING SUMMER ZONES

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT WINTER
- EXISTING SUMMER LIFT
- RIVER
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING BUILDING

ZONE IDENTIFICATION

- ZONE 1
- ZONE 2
- ZONE 3
- ZONE 4
- ZONE 5

50' CONTOUR INTERVALS

SCALE (ft)

0 900 1800 2700 3600

Prepared by:

SE GROUP

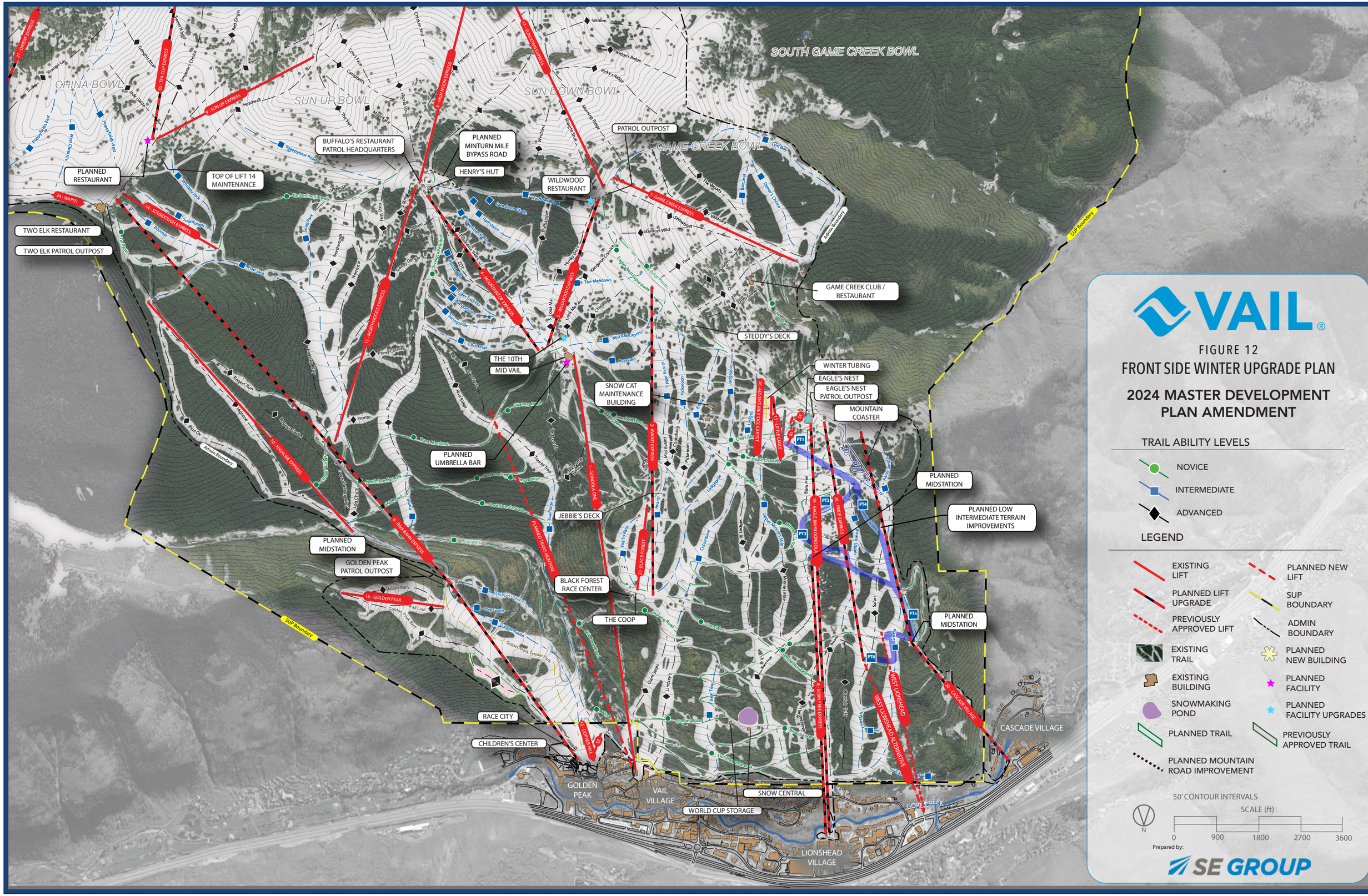

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FIGURE 12

FRONT SIDE WINTER UPGRADE PLAN

2024 MASTER DEVELOPMENT PLAN AMENDMENT

TRAIL ABILITY LEVELS

- NOVICE
- INTERMEDIATE
- ADVANCED

LEGEND

- EXISTING LIFT
- PLANNED LIFT UPGRADE
- PREVIOUSLY APPROVED LIFT
- EXISTING TRAIL
- EXISTING BUILDING
- SNOWMAKING POND
- PLANNED TRAIL
- PLANNED NEW LIFT
- SUP BOUNDARY
- ADMIN BOUNDARY
- PLANNED NEW BUILDING
- PLANNED FACILITY
- PLANNED FACILITY UPGRADES
- PREVIOUSLY APPROVED TRAIL
- PLANNED MOUNTAIN ROAD IMPROVEMENT

50' CONTOUR INTERVALS

N

SCALE (ft)

0 900 1800 2700 3600

Prepared by:

SE GROUP

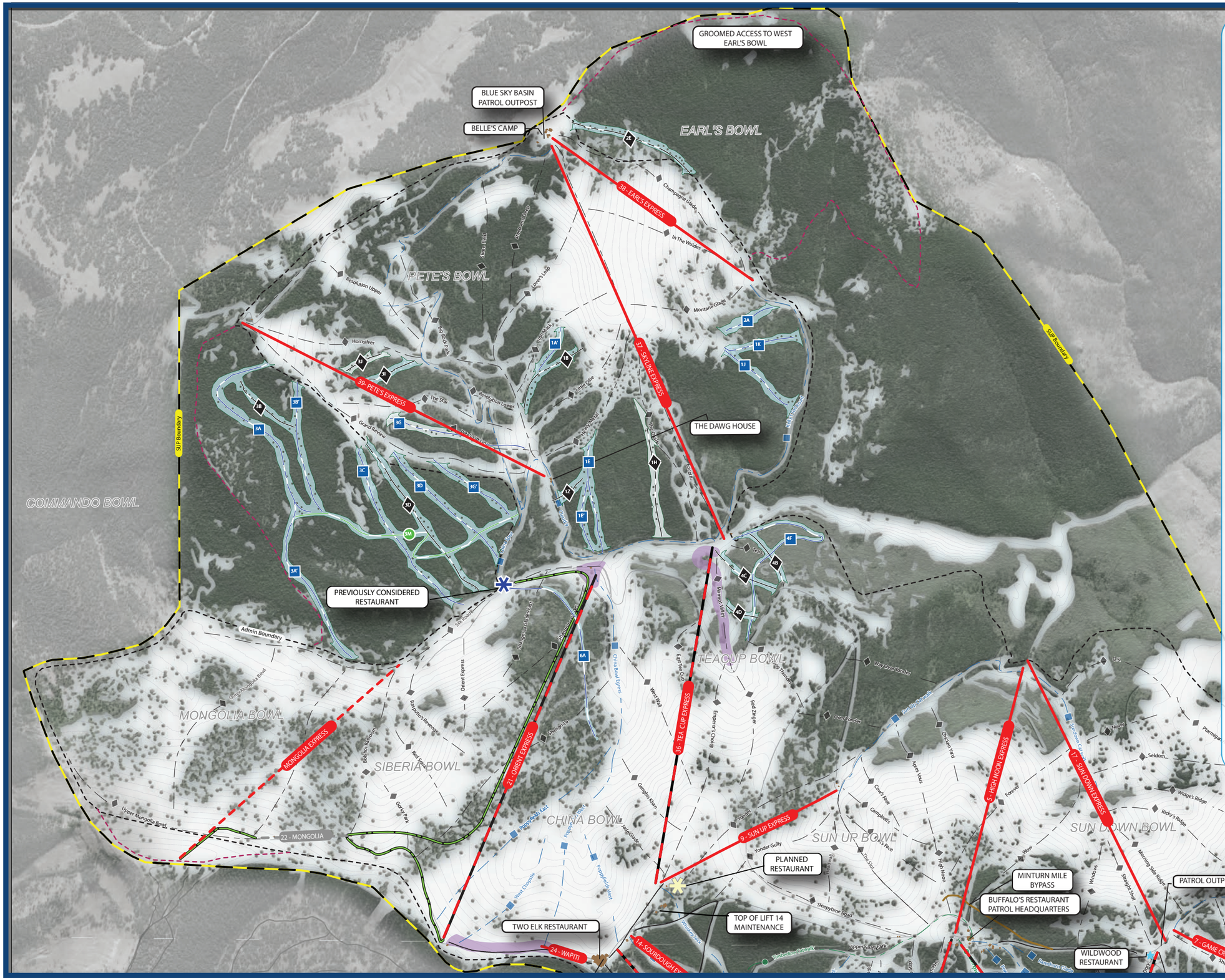

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FIGURE 13

BACK SIDE WINTER UPDGRADE PLAN

2024 MASTER DEVELOPMENT PLAN AMENDMENT

TRAIL ABILITY LEVELS

- NOVICE
- INTERMEDIATE
- ADVANCED

LEGEND

- EXISTING LIFT
- EXISTING SKI TRAIL
- SUP BOUNDARY
- EXISTING ADMIN BOUNDARY
- EXISTING BUILDING
- PREVIOUSLY CONSIDERED BUILDING
- PLANNED NEW BUILDING
- PLANNED GRADING
- PLANNED NEW LIFT
- PLANNED LIFT UPGRADE
- PREVIOUSLY CONSIDERED TREE CLEARING
- PLANNED ADMIN BOUNDARY EXPANSION
- PLANNED UTILITY LINE
- PLANNED FACILITY UPGRADES

50' CONTOUR INTERVALS

SCALE (ft)

N

0 900 1800 2700 3600

Prepared by:

SE GROUP

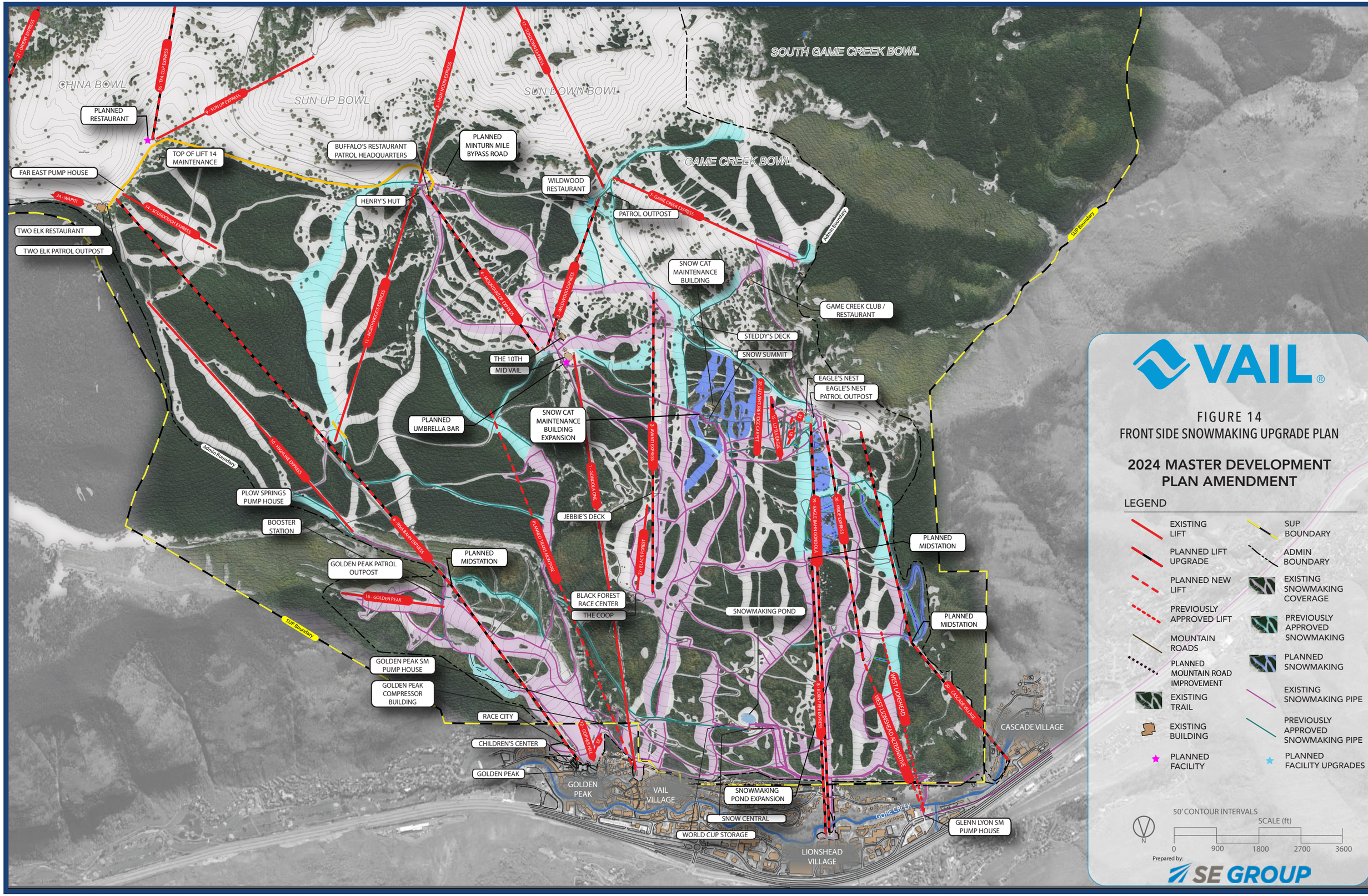

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FIGURE 14
FRONT SIDE SNOWMAKING UPGRADE PLAN

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT
- PLANNED LIFT UPGRADE
- PLANNED NEW LIFT
- PREVIOUSLY APPROVED LIFT
- MOUNTAIN ROADS
- PLANNED MOUNTAIN ROAD IMPROVEMENT
- EXISTING TRAIL
- EXISTING BUILDING
- PLANNED FACILITY
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING SNOWMAKING COVERAGE
- PREVIOUSLY APPROVED SNOWMAKING
- PLANNED SNOWMAKING
- EXISTING SNOWMAKING PIPE
- PREVIOUSLY APPROVED SNOWMAKING PIPE
- PLANNED FACILITY UPGRADES

50' CONTOUR INTERVALS

N

SCALE (ft)
0 900 1800 2700 3600

Prepared by:
SE GROUP

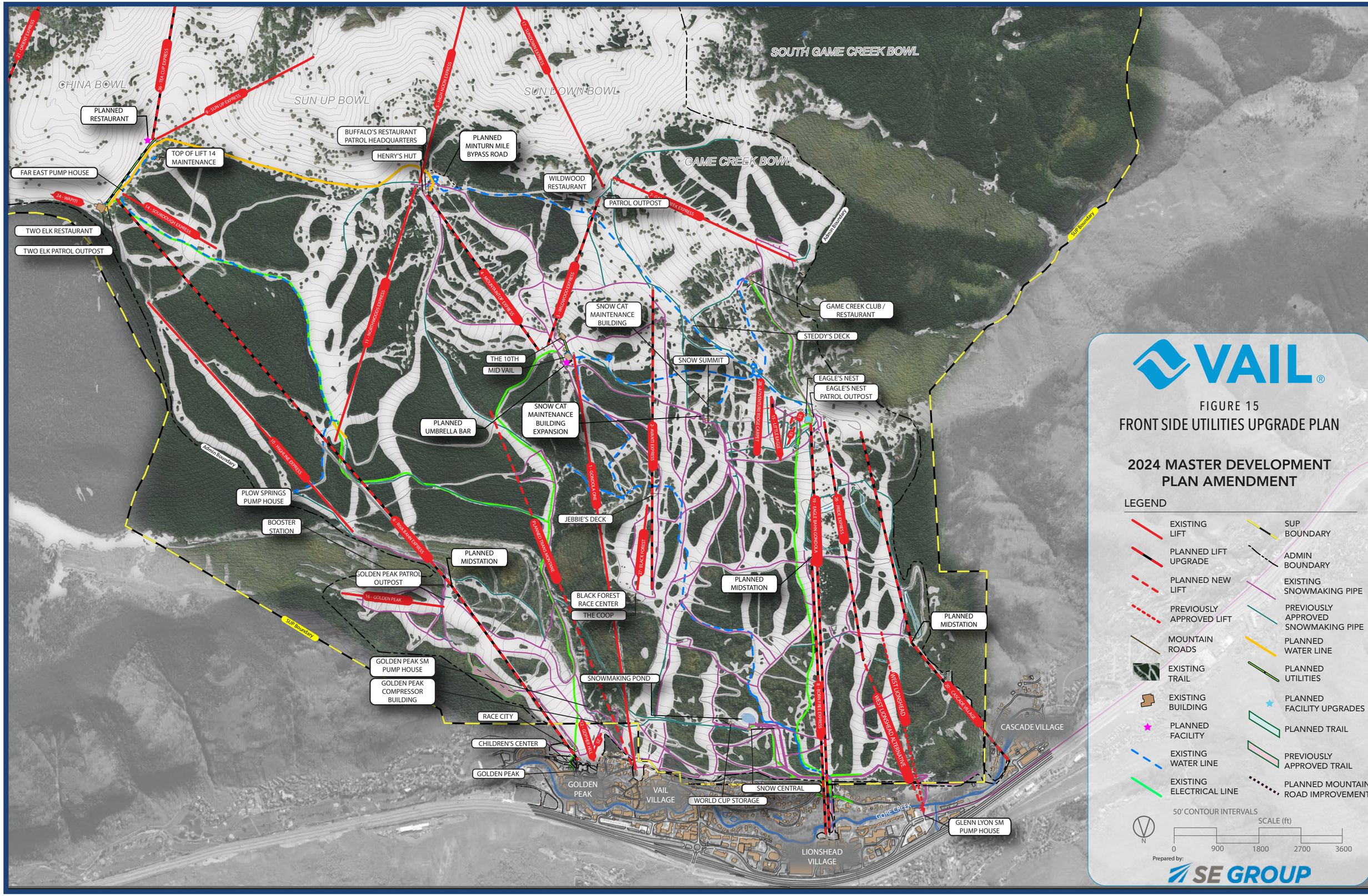

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FIGURE 15

FRONT SIDE UTILITIES UPGRADE PLAN

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT
- PLANNED LIFT UPGRADE
- PLANNED NEW LIFT
- PREVIOUSLY APPROVED LIFT
- MOUNTAIN ROADS
- EXISTING TRAIL
- EXISTING BUILDING
- PLANNED FACILITY
- EXISTING WATER LINE
- EXISTING ELECTRICAL LINE
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING SNOWMAKING PIPE
- PREVIOUSLY APPROVED SNOWMAKING PIPE
- PLANNED WATER LINE
- PLANNED UTILITIES
- PLANNED FACILITY UPGRADES
- PLANNED TRAIL
- PREVIOUSLY APPROVED TRAIL
- PLANNED MOUNTAIN ROAD IMPROVEMENT

50' CONTOUR INTERVALS

N

SCALE (ft)

0 900 1800 2700 3600

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FIGURE 16

FRONT SIDE SUMMER UPGRADE PLAN

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT WINTER
- EXISTING SUMMER LIFT
- EXISTING HIKING TRAIL
- EXISTING BIKING TRAIL
- EXISTING MULTI-USE TRAIL
- EXISTING MOUNTAIN COASTER
- EXISTING ZIPLINE
- EXISTING BUILDING
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING CANOPY TOUR
- EXISTING TUBING AREA
- PLANNED LIFT WINTER
- PLANNED LIFT UPGRADE WINTER
- PLANNED LIFT UPGRADE SUMMER
- WINTER USE PREVIOUSLY APPROVED LIFT
- PLANNED BIKING TRAIL
- PLANNED MULTI-USE TRAIL
- PREVIOUSLY APPROVED ADMIN BOUNDARY EXPANSION
- PREVIOUSLY APPROVED CANOPY TOUR
- PLANNED NEW BUILDING
- PLANNED IMPROVEMENTS

NOTE:
PLANNED PROJECTS ARE SHOWN IN WHITE BOX LABELS AND EXISTING INFRASTRUCTURE ARE SHOWN IN GRAY BOX LABELS.

50' CONTOUR INTERVALS

N

SCALE (ft)

0 900 1800 2700 3600

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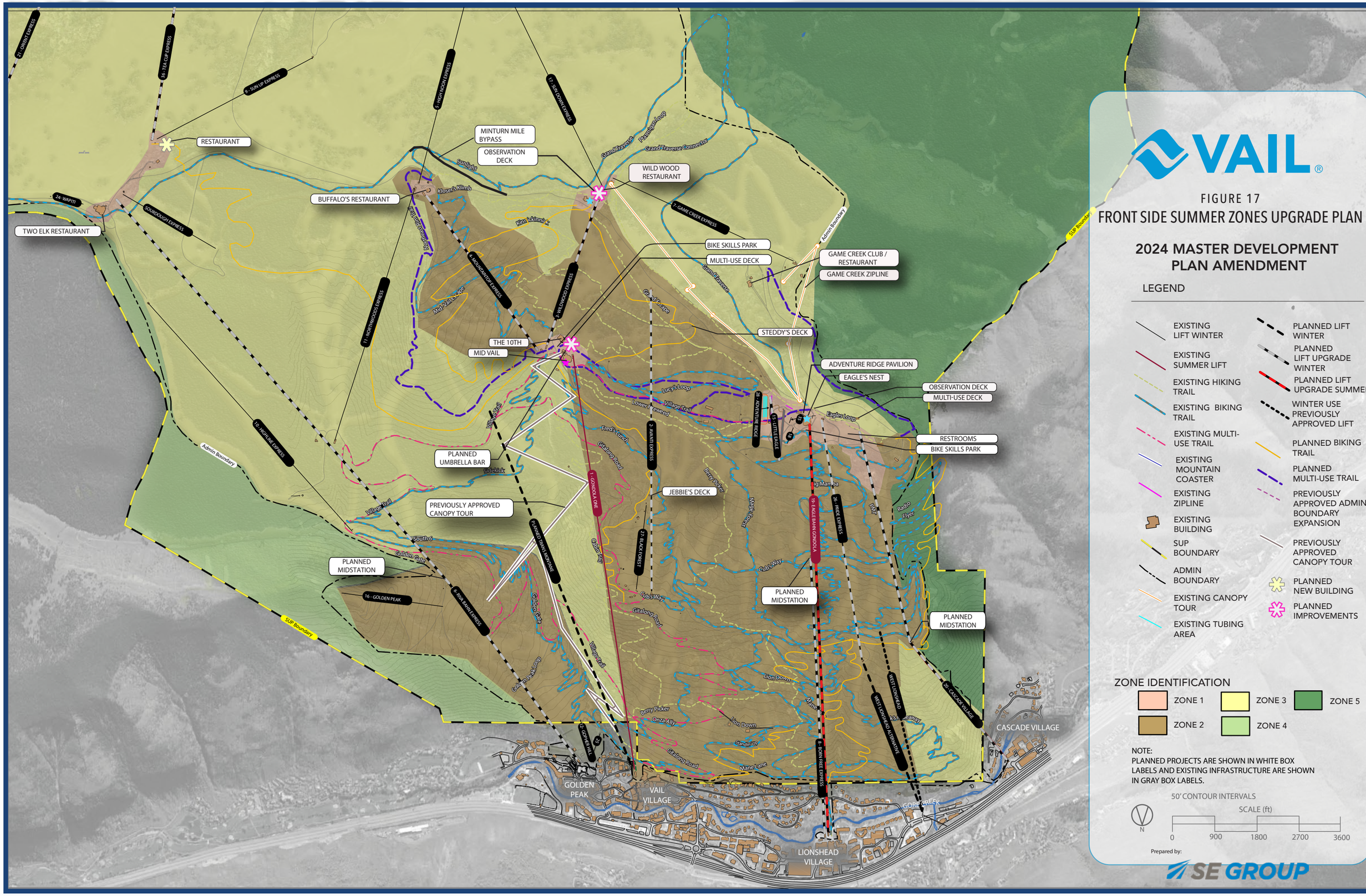

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FIGURE 17
FRONT SIDE SUMMER ZONES UPGRADE PLAN

2024 MASTER DEVELOPMENT PLAN AMENDMENT

LEGEND

- EXISTING LIFT WINTER
- EXISTING SUMMER LIFT
- EXISTING HIKING TRAIL
- EXISTING BIKING TRAIL
- EXISTING MULTI-USE TRAIL
- EXISTING MOUNTAIN COASTER
- EXISTING ZIPLINE
- EXISTING BUILDING
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING CANOPY TOUR
- EXISTING TUBING AREA
- PLANNED LIFT WINTER
- PLANNED LIFT UPGRADE WINTER
- PLANNED LIFT UPGRADE SUMMER
- WINTER USE PREVIOUSLY APPROVED LIFT
- PLANNED BIKING TRAIL
- PLANNED MULTI-USE TRAIL
- PREVIOUSLY APPROVED ADMIN BOUNDARY EXPANSION
- PREVIOUSLY APPROVED CANOPY TOUR
- PLANNED NEW BUILDING
- PLANNED IMPROVEMENTS

ZONE IDENTIFICATION

ZONE 1 | ZONE 2 | ZONE 3 | ZONE 4 | ZONE 5

NOTE:
PLANNED PROJECTS ARE SHOWN IN WHITE BOX LABELS AND EXISTING INFRASTRUCTURE ARE SHOWN IN GRAY BOX LABELS.

50' CONTOUR INTERVALS

N

SCALE (ft)

0 900 1800 2700 3600

Prepared by:

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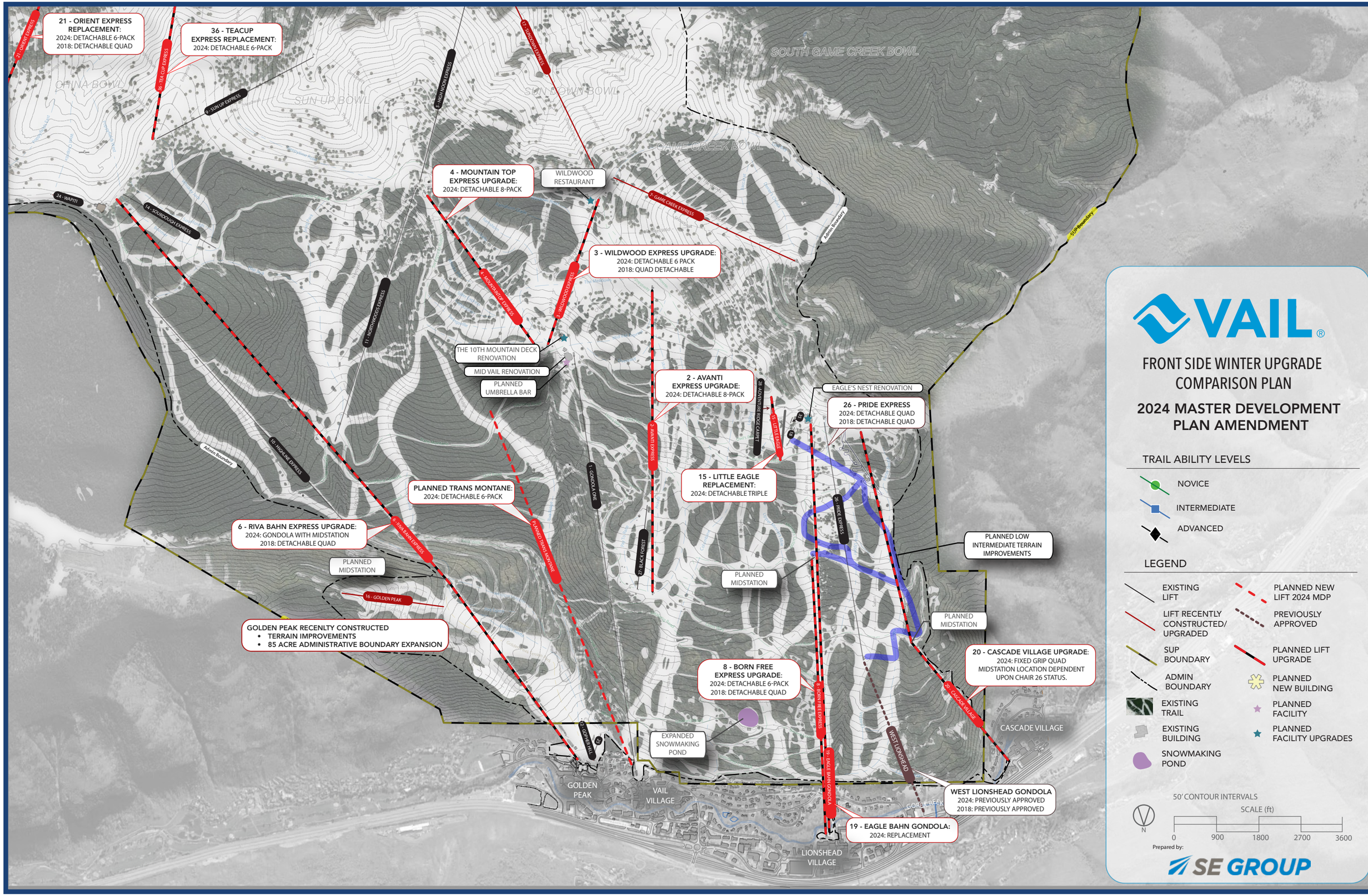

21 - ORIENT EXPRESS REPLACEMENT:
2024: DETACHABLE 6-PACK
2018: DETACHABLE QUAD
36 - TEACUP EXPRESS REPLACEMENT:
2024: DETACHABLE 6-PACK
4 - MOUNTAIN TOP EXPRESS UPGRADE:
2024: DETACHABLE 8-PACK
WILDWOOD RESTAURANT
3 - WILDWOOD EXPRESS UPGRADE:
2024: DETACHABLE 6 PACK
2018: QUAD DETACHABLE
THE 10TH MOUNTAIN DECK RENOVATION
MID VAIL RENOVATION
PLANNED UMBRELLA BAR
2 - AVANTI EXPRESS UPGRADE:
2024: DETACHABLE 8-PACK
EAGLE'S NEST RENOVATION
26 - PRIDE EXPRESS
2024: DETACHABLE QUAD
2018: DETACHABLE QUAD
15 - LITTLE EAGLE REPLACEMENT:
2024: DETACHABLE TRIPLE
PLANNED TRANS MONTANE:
2024: DETACHABLE 6-PACK
6 - RIVA BAHN EXPRESS UPGRADE:
2024: GONDOLA WITH MIDSTATION
2018: DETACHABLE QUAD
PLANNED MIDSTATION
PLANNED MIDSTATION
PLANNED MIDSTATION
PLANNED LOW INTERMEDIATE TERRAIN IMPROVEMENTS
GOLDEN PEAK RECENLTY CONSTRUCTED
• TERRAIN IMPROVEMENTS
• 85 ACRE ADMINISTRATIVE BOUNDARY EXPANSION
8 - BORN FREE EXPRESS UPGRADE:
2024: DETACHABLE 6-PACK
2018: DETACHABLE QUAD
20 - CASCADE VILLAGE UPGRADE:
2024: FIXED GRIP QUAD
MIDSTATION LOCATION DEPENDENT UPON CHAIR 26 STATUS.
EXPANDED SNOWMAKING POND
WEST LIONSHEAD GONDOLA
2024: PREVIOUSLY APPROVED
2018: PREVIOUSLY APPROVED
19 - EAGLE BAHN GONDOLA:
2024: REPLACEMENT
SOUTH GAME CREEK BOWL
CHINA BOWL
SUN UP BOWL
SUN DOWN BOWL
GAME CREEK BOWL
CASCADE VILLAGE
GOLDEN PEAK
VAIL VILLAGE
LIONSHEAD VILLAGE
GORE CREEK
WEST LIONSHEAD
VAIL
FRONT SIDE WINTER UPGRADE COMPARISON PLAN
2024 MASTER DEVELOPMENT PLAN AMENDMENT
TRAIL ABILITY LEVELS
NOVICE
INTERMEDIATE
ADVANCED
LEGEND
EXISTING LIFT
LIFT RECENTLY CONSTRUCTED/ UPGRADED
SUP BOUNDARY
ADMIN BOUNDARY
EXISTING TRAIL
EXISTING BUILDING
SNOWMAKING POND
PLANNED NEW LIFT 2024 MDP
PREVIOUSLY APPROVED
PLANNED LIFT UPGRADE
PLANNED NEW BUILDING
PLANNED FACILITY
PLANNED FACILITY UPGRADES
50' CONTOUR INTERVALS
SCALE (ft)
0
900
1800
2700
3600
N
Prepared by:
SE GROUP

BACK SIDE WINTER UPGRADE COMPARISON PLAN

2024 MASTER DEVELOPMENT PLAN AMENDMENT

TRAIL ABILITY LEVELS

- NOVICE
- INTERMEDIATE
- ADVANCED

LEGEND

- EXISTING LIFT
- LIFT RECENTLY CONSTRUCTED/ UPGRADED
- SUP BOUNDARY
- ADMIN BOUNDARY
- EXISTING TRAIL
- EXISTING BUILDING
- PREVIOUSLY APPROVED TREE CLEARING
- PREVIOUSLY CONSIDERED BUILDING
- PLANNED NEW LIFT 2024 MDP
- PLANNED LIFT UPGRADE
- PLANNED NEW BUILDING
- PLANNED FACILITY
- PLANNED FACILITY UPGRADES
- PLANNED TREE CLEARING
- PLANNED GRADING
- PLANNED UTILITY LINE

50' CONTOUR INTERVALS

SCALE (ft)

N

0 900 1800 2700 3600

Prepared by:

SE GROUP

PLANNED ADMIN BOUNDARY EXPANSION

PLANNED ADMIN BOUNDARY EXPANSION

PLANNED ADMIN BOUNDARY EXPANSION

MONGOLIA EXPRESS: 2024 & 2018: DETACHABLE QUAD

21 - ORIENT EXPRESS REPLACEMENT: 2024: DETACHABLE 6-PACK 2018: DETACHABLE QUAD

36 - TEACUP EXPRESS REPLACEMENT: 2024: DETACHABLE 6-PACK

PLANNED RESTAURANT

MINTURN MILE BYPASS

WILDWOOD RESTAURANT

EARL'S BOWL

PETE'S BOWL

COMMANDO BOWL

MONGOLIA BOWL

CHINA BOWL

TEACUP BOWL

SUN UP BOWL

SUN DOWN BOWL

GAME CREEK BOWL

SOUTH GAME CREEK BOWL

38 - EARL'S EXPRESS

39- PETE'S EXPRESS

37 - SKYLINE EXPRESS

MONGOLIA EXPRESS

21 - ORIENT EXPRESS

36 - TEA CUP EXPRESS

9 - SUN UP EXPRESS

5 - HIGH NOON EXPRESS

17 - SUNDOWN EXPRESS

7 - GAME CREEK EXPRESS

22 - MONGOLIA

24 - WAPITI

14 - SOURDOUGH EX...

SUP Boundary

Admin Boundary