

# PREFACE

---

This Mountain Resort Master Development Plan (MDP) is intended to be the guiding document for future development at Nordic Valley Ski Resort. Illustration 1 is a visual representation of the process on which this document is based.

First, an overall resort vision and guiding goals were determined based on market needs, resort niche and long-term outlook. These vision and goal statements help inform the entire process; that is, to help answer questions such as, *What's important to our guests?*, *What makes our resort special?*, and *Where should we invest our time, money and resources?*

With a vision and goals established, the next step is to inventory existing conditions at the resort to identify existing strengths, weaknesses, opportunities, and constraints. This is critical information that goes into the resort planning phase. Details are collected such as the number of lifts and their conditions, the square footage of guest service spaces and how many parking spaces are available. Physical resources are also inventoried to help identify ideal locations to develop or to avoid due to environmental sensitivity.

The next phase of the MDP process is to analyze existing capacities of various facility components to determine imbalances within the operation. Collectively, this analysis leads to the identification of improvements that would bring existing facilities into better balance, help the resort prioritize projects and help the resort to operate more efficiently. Accomplishing these goals 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 results of this process are documented in this MDP.

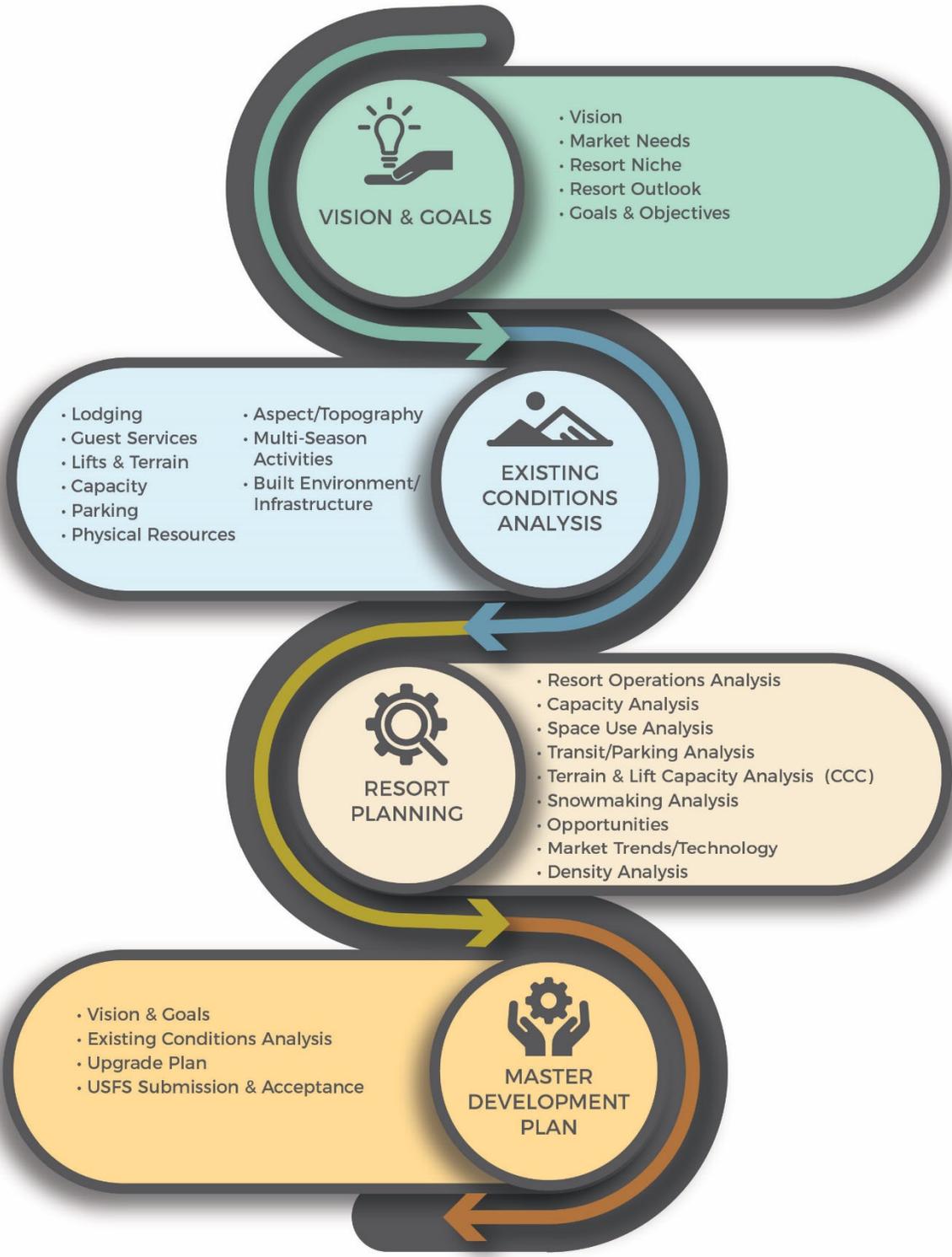
## **Planning and Design Nomenclature**

*Throughout the document are text boxes like this one, explaining the various planning and design concepts that are utilized throughout the MDP process.*

This MDP is divided into five chapters, plus several appendices:

- ❖ Chapter 1—Introduction: provides a summary of Nordic Valley's location and market, statement of the plan vision and goals, and summary of the master plan projects.
- ❖ Chapter 2—Site Inventory: inventories physical resources in the Upgrade Plan area.
- ❖ Chapter 3—Existing Conditions: describes existing resort facilities for both winter and summer, and evaluates the current balance of resort operations and facilities.
- ❖ Chapter 4—Upgrade Plan: describes the proposed upgrades and improvements to the experience at Nordic Valley.
- ❖ Chapter 5—Public Input: summarizes the processes and outcomes of public outreach efforts about the Nordic Valley Plan to-date.
- ❖ Chapter 6—Glossary: provides a glossary of terms used throughout this document.
- ❖ Appendices A–E: includes important considerations and background including design criteria, Forest Service direction, project website details, and additional specifications tables.

Illustration 1. The MDP Process





# CONTENTS

<b>CHAPTER ONE—INTRODUCTION .....</b>	<b>1</b>
A. Purpose of a Mountain Resort Master Development Plan .....	1
B. The Process: Vision to Implementation .....	1
C. Resort Background.....	3
1. Location .....	3
2. History .....	3
3. Market Niche .....	4
D. Current Industry Trends .....	5
1. Operational Efficiency .....	5
2. Enhancement of Existing Ski Experience.....	6
3. Expansion of Non-Skiing Opportunities.....	7
E. Plan Vision and Goals .....	7
F. Applicable Forest Service Policy and Direction .....	9
1. Wasatch-Cache Forest Plan: Management Area Prescriptions .....	9
G. Master Development Plan Summary .....	12
<b>CHAPTER TWO—SITE INVENTORY .....</b>	<b>13</b>
A. Topography.....	13
B. Slope Gradients .....	14
C. Aspect.....	15
D. Soils and Geology .....	16
E. Vegetation .....	17
F. Hydrology .....	17
G. Fish and Wildlife .....	18
<b>CHAPTER THREE—EXISTING CONDITIONS.....</b>	<b>19</b>
A. Summary of the Existing Guest Experience .....	19
B. Existing Lift Network .....	20
C. Existing Terrain Network .....	21
1. Terrain Variety.....	21
2. Terrain Distribution by Ability Level.....	22
D. Existing Resort Capacity .....	24
1. Comfortable Carrying Capacity .....	24
2. Density Analysis .....	25
A. Existing Guest Services Facilities, Food Service Seating & Space Use Analysis.....	27
1. Guest Services .....	27
2. Space Use Analysis .....	27
3. Food Service Seating.....	29
B. Existing Parking Capacity.....	30
C. Existing Resort Operations .....	31
1. Ski Patrol/First Aid .....	31
2. Snowmaking .....	31
3. Grooming.....	31
4. Night Skiing .....	31
5. Maintenance Facilities .....	31
6. Infrastructure and Utilities.....	32
7. Culinary Water and Waste Water Treatment .....	32
8. Mountain Roads.....	32

D.	Existing Resort Capacity Balance and Limiting Factors .....	33
E.	Existing Multi-Season Activities.....	34
1.	<i>Summary of the Existing Multi-Season Activities Guest Experience</i> .....	34
2.	<i>Mountain Biking and Hiking</i> .....	34
3.	<i>Disc Golf</i> .....	34
4.	<i>Slip and Slide</i> .....	34
5.	<i>Bungee Trampoline</i> .....	34
6.	<i>Events and Programming</i> .....	35
<b>CHAPTER FOUR—UPGRADE PLAN .....</b>		<b>36</b>
A.	Summary of the Guest Experience Upgrade.....	36
B.	Lift Network Upgrade.....	37
1.	<i>New Lift Installations</i> .....	37
2.	<i>Uphill Access</i> .....	40
C.	Terrain Network Upgrade .....	41
1.	<i>Terrain Variety</i> .....	41
2.	<i>Developed Terrain Network</i> .....	42
3.	<i>Terrain Distribution by Ability Level</i> .....	43
4.	<i>Terrain Construction and Grading</i> .....	44
5.	<i>Gladed Terrain</i> .....	44
6.	<i>Terrain Parks</i> .....	45
D.	Capacity Analysis Upgrade.....	45
1.	<i>Comfortable Carrying Capacity</i> .....	45
2.	<i>Density Analysis</i> .....	45
3.	<i>Lift and Terrain Network Efficiency Analysis</i> .....	45
E.	Upgrade Plan Guest Services Facilities & Space Use Analysis .....	46
1.	<i>Guest Services Locations</i> .....	46
2.	<i>Space Use Analysis</i> .....	47
3.	<i>Food Service Seating</i> .....	49
F.	Parking and Transportation Upgrade.....	49
G.	Resort Operations Upgrade.....	51
1.	<i>Infrastructure and Utilities</i> .....	51
2.	<i>Culinary Water and Waste Water Treatment</i> .....	51
3.	<i>Snowmaking</i> .....	51
4.	<i>Construction and Maintenance Access Routes</i> .....	54
5.	<i>Grooming</i> .....	55
6.	<i>Night Skiing</i> .....	55
7.	<i>Maintenance Facilities</i> .....	55
8.	<i>Ski Patrol/First Aid</i> .....	55
H.	Upgrade Plan Resort Capacity Balance and Limiting Factors .....	56
I.	Multi-Season Recreation Opportunities Upgrade .....	57
1.	<i>Multi-Season Guest Experience Upgrade</i> .....	57
2.	<i>Multi-Season Lift Operations</i> .....	61
3.	<i>Multi-Season Guest Service and Facilities Operations</i> .....	61
4.	<i>Summer “Activity Zones”</i> .....	62
<b>CHAPTER FIVE—PUBLIC INPUT .....</b>		<b>69</b>
A.	Introduction.....	69
B.	Public Input Process .....	69
1.	<i>Media and Public Outreach Efforts</i> .....	69
2.	<i>Public Meetings</i> .....	69
3.	<i>Webpage and Comment Form</i> .....	70

C. Comment Themes and Responses..... 70

    1. Winter Season Recreation and Amenities ..... 70

    2. Summer Season Recreation and Amenities ..... 70

    3. Traffic, Parking, and Access ..... 71

    4. Environmental Impacts ..... 71

    5. Community and Socioeconomic Factors ..... 71

    6. Local Governance and Forest Service Policies ..... 72

D. Summary of Public Involvement ..... 72

**CHAPTER SIX—GLOSSARY ..... 73**

**APPENDICES**

- Appendix A. Design Criteria
- Appendix B. Applicable Forest Service Policy and Direction
- Appendix C. Nordic Valley Expansion Plan Project Website
- Appendix D. Existing Conditions Specifications Tables
- Appendix E. Upgrade Plan Specifications Tables

## List of Figures

Figure 1. Vicinity Map	
Figure 2. Property Boundaries	
Figure 3. Slope Analysis Plan	
Figure 4. Aspect Analysis Plan	
Figure 5. Existing Vegetation Cover	
Figure 6. Existing Hydrology	
Figure 7. Existing Wildlife Habitat	
Figure 8. Existing Winter Conditions	
Figure 9. Existing Snowmaking	
Figure 10. Existing Mountain Roads	
Figure 11. Existing Utilities Plan	
Figure 12. Existing Summer Conditions: Ski Area	
Figure 13. Existing Summer Conditions: Study Area	
Figure 14. Upgrade Plan Winter	
Figure 15. Snowmaking Upgrade Plan	
Figure 16. Limited Access Construction/Maintenance Routes	
Figure 17. Upgrade Plan Summer	
Figure 18. Upgrade Plan Summer Zones	

## List of Tables

Table 3-1. Lift Specifications–Existing Conditions	20
Table 3-2. Terrain Distribution by Ability Level–Existing Conditions	22
Table 3-3. Space Use Analysis–Resort Total–Existing Conditions	28
Table 3-4. Recommended Restaurant Seating–Existing Conditions	29
Table 3-5. Recommended Parking at Staging Portals–Existing Conditions	30
Table 4-1. Lift Specifications–Upgrade Plan	39
Table 4-2. Terrain Distribution by Ability Level–Upgrade Plan	43
Table 4-3. Space Use Analysis-Resort Total–Upgrade Plan	48
Table 4-4. Recommended Restaurant Seating–Upgrade Plan	49
Table 4-5. Recommended Parking at Staging Portals–Upgrade Plan	50
Table 4-6. Snowmaking Coverage–Upgrade Plan	52
Table 4-7. Zone Characteristics—Upgrade Plan	63

## List of Illustrations and Charts

Illustration 1. The MDP Process	C
Illustration 2. NEPA and EIS Process	2
Chart 3-1. Terrain Distribution by Ability Level–Existing Conditions	23
Chart 3-2. Resort Capacity–Existing Conditions	33
Chart 4-1. Terrain Distribution by Ability Level–Upgrade Plan	44
Chart 4-2. Resort Capacity–Upgrade Plan	56

---

# CHAPTER ONE—INTRODUCTION

---

## **A. PURPOSE OF A MOUNTAIN RESORT MASTER DEVELOPMENT PLAN**

Many mountain resorts across the country are partially or completely located on public lands. Each mountain resort on National Forest System (NFS) lands must obtain a United States (U.S.) Forest Service (Forest Service) special use permit (SUP) to operate on public lands. Forest Service SUPs require the preparation of a Master Development Plan (MDP) that identifies the existing and desired conditions for the resort and the proposed improvements on the NFS lands within the permit boundary.

## **B. THE PROCESS: VISION TO IMPLEMENTATION**

Before a project can be constructed on NFS lands, a number of steps are required to be completed including master planning, environmental analysis and local and state permitting.

The first step of the process is to complete an MDP. This is a requirement for issuance of a SUP. The MDP is required to inventory and evaluate existing and planned conditions within the SUP boundary. The Forest Service reviews the MDP and will “accept” the document if the Forest Service believe it meets the Forest Plan goals and objectives.

This MDP fulfills this requirement and provides future direction for the development and improvement of Nordic Valley Ski Resort (Nordic Valley), ensuring both a balance of facilities and a wide variety of amenities affording an exceptional recreational experience in a manner that is sustainable to the business, operations, and the surrounding environment. This MDP provides an assessment of existing operations and facilities at Nordic Valley and identifies a comprehensive plan for future expansion and development to the resort. Throughout the planning process, public input was gathered at public meetings and from an online website to help inform and modify the MDP.

Forest Service acceptance of this document as a planning tool for Nordic Valley does not imply authorization to proceed with implementation of any of the projects that are identified herein. Conceptual projects contained in the MDP are reviewed by the Forest Service to determine if they meet Forest Plan goals and objectives. All projects identified within this MDP will require site-specific environmental analysis and approval per the National Environmental Policy Act (NEPA) before they can be implemented. This MDP is intended to be a dynamic document, which may be amended periodically to reflect innovations in facilities and recreation.

If the Forest Service “accepts” the MDP, Nordic Valley could initiate a NEPA process by sending the Forest Service a project proposal letter, which is required by law to analyze potential impacts on NFS lands. Illustration 2 shows the various steps of the NEPA process. Depending on environmental impacts analyzed and the scope of the analysis, the NEPA process could take several years.

Beyond the Master Planning and NEPA process, additional permitting may be required by the cities, county and state. The required permits for project implementation would be determined during the NEPA analysis.

### Illustration 2. NEPA and EIS Process



## C. RESORT BACKGROUND

### 1. LOCATION

Nordic Valley Ski Resort is located in the heart of the Ogden Valley in Weber County, Utah. The Valley is known for mountainous sceneries and scenic river valley. The area attracts residents and visitors for its outdoor recreational opportunities, such as skiing, snowmobiling and cross-country skiing in the winter and fishing, boating, biking and hiking in the summer.

The resort neighbors the towns of Eden and Huntsville, which have a population of 800 and 600, respectively. Eden and Huntsville are a small, rural communities surrounded by Nordic Valley, Powder Mountain, Snowbasin Resort, Pineview Reservoir and agriculture. They provide services for residents and visitors to the Ogden Valley.

Due west of Nordic Valley and the Ogden Valley is the northern portion of the Wasatch Front, an area west of the Wasatch Range where over 2 million Utahans reside. Ogden, a city of 85,000, is the largest population center close to Nordic Valley. Ogden is 15 miles southwest of Nordic Valley and 28 miles north of Salt Lake City. Ogden is known for its outdoor recreation opportunities that attract visitors, new residents, and outdoor industries. Ogden was recently named by Forbes magazine as one of the top cities in the country to raise a family.<sup>1</sup> Weber State University is located in the city as well, with 27,000 students.

North Ogden has a population of 19,000. North Ogden has long been a bedroom community for many of the neighboring cities. Lately, the city's population and local economy have expanded rapidly, as with much of the Wasatch Front.

The existing 140 acres resort is located entirely on private lands. Nordic Valley is surrounded by Uinta-Wasatch-Cache National Forest (UWCNF) and some private lands that are also popular areas for recreation. The Pineview Reservoir is nearby and a popular summer destination for fishing, boating, waterskiing, and camping. The resort is located approximately 20 miles south of the Wellsville Mountain Wilderness, a designated wilderness area.

The resort is accessible via personal vehicle or private shuttle. The road from Ogden, Ogden Canyon Road (State Road 39), and North Ogden, North Ogden Canyon Road (State Road 162) are both 2-lane highways that winding through canyons. There are congestion and safety concerns associated with both roads, due to both recreation/tourism traffic and residential/local/business traffic.

### 2. HISTORY

In 1960, Arthur Christiansen, a home builder and developer from Salt Lake City and Ogden, purchased the Silver Bell Ranch, a 900-acre ranch in the Ogden Valley. In 1968, on the mountainous portion of the property a rope tow was installed and Nordic Valley was born. The name, Nordic Valley, is attributed to Christiansen's Norwegian heritage. In the 1970s, two double chairlifts were installed (one to replace the rope tow), as well as lights. Nordic Valley was one of the first places in northern Utah to offer night skiing. In 1977, Christiansen sold the resort to Wolf Mountain Ski Resort LLC who owned the resort until they declared bankruptcy in 2010. Nordic

---

<sup>1</sup> <https://www.forbes.com/pictures/eddf45gih/no-8-ogden-utah/#7abae8606b72>

Valley was acquired in 2014 by Skyline Mountain Base, LLC. The company invested in the resort, completing a number of improvements including the Odin Hall barn renovation. In the spring of 2018, Skyline Mountain Base entered into a partnership with Mountain Capital Partners to manage and operate Nordic Valley.

The ski area is known for its family-friendly environment as one of the most affordable resorts in the state.<sup>2</sup> Its ski school and varied beginner, intermediate, and expert terrain also draw many skiers. In the summer, the resort activities include a water slide, disc golf, biking and hiking trails, and an evening concert series.

Nordic Valley is continuing to experience growth. Over the last three seasons, Nordic Valley has averaged nearly 38,000 guests with an increasing visitation trend.

### **3. MARKET NICHE**

Nordic Valley is a small, boutique resort in the small farming community of Ogden Valley. Guests travel to Nordic Valley because of its low prices, simplicity, and family-atmosphere that other ski resorts in Utah may lack. Given its location in the mountains and proximity to the Wasatch Front, Nordic Valley has the opportunity to expand its market niche while retaining the qualities that separate it from the other ski areas in Utah.

Nordic Valley has the potential to be a source of connectivity—recreation, social, and physical connectivity—between the Wasatch Front and the UWCNF. Being nestled within the UWCNF, Nordic Valley can serve as the hub for people interested in recreating outdoors on National Forest lands. Through further development of recreation opportunities—including skiing, hiking, and biking—Nordic Valley can connect the people of the Wasatch Front and their surrounding natural environment and the UWCNF.

Physical proximity of the Wasatch Front to Nordic Valley means easy access for visitors interested in recreating on or just exploring the UWCNF. Being one of the closet ski areas to the major population hubs along the Wasatch Front, including Ogden and Salt Lake City, allows Nordic Valley to capitalize on the recreation interests of these populations. Ogden, for example, is under 30 minutes from Nordic Valley and has received national recognition for being a hub of outdoor recreation for both companies and visitors.<sup>3</sup> In addition to the car-driving populous located nearby, there are a variety of transportation options available to visitors who do not have access to a car. These include the Black Diamond Shuttle and the Express Shuttle which provide shared ride shuttles to and from Nordic Valley and the greater Salt Lake City area. Ease-of-access and physical closeness of Nordic Valley will allow it to be a key connection between the National Forest and the Wasatch Front.

Nordic Valley also has the opportunity to be a social hub for the northern Wasatch Front as well as the communities within Ogden Valley and Ogden City. These opportunities range from

---

<sup>2</sup> In this document, the terms “ski,” “skiing” or “skier” represents all snowsport participants, including, but not limited to, traditional skiers, snowboarders, disabled skiers, telemark skiers, and skiboarders.

<sup>3</sup> Ogden City Business Development, n.d. Outdoor Recreation. Available at <http://ogdenbusiness.com/Major-Industries/Outdoor-Recreation.aspx>.

Last accessed September 26, 2018.

community-focused events, through fundraisers or philanthropic events, to recreation-based activities, like sporting events or the Nordic Nights music series.

In its present form, Nordic Valley still serves as the physical, social, and recreation connector between people and the UWCNF but to a limited extent due to its small size. Expansion of its operations and activities could greatly improve its ability to be this connector.

## **D. CURRENT INDUSTRY TRENDS**

The challenges that ski resorts face vary and evolve continuously. In times of economic downturns (e.g., 2007–2010), the focus was on affordability. In previous decades, ski industry development was characterized by efforts to attract more first timers, while still retaining the core skiing market, as well as to generally broaden the appeal of skiing to more diverse demographics beyond the typical baby boomer. This included making snowsports more appealing to beginners and better at retaining existing skiers (i.e., better learning centers, rental equipment, and day and season pass deals), as well as offering a more diverse and high quality skiing experience (i.e., improved skier facilities, food choices, grooming, and customer service). While all of these trends and initiatives are still very much in place (see the NSAA Model for Growth), a focus has shifted towards adapting to a more variable climate, as well as consolidation within the industry.

Previously, ski industry trends were also characterized by the significant expansion of terrain and infrastructure. Terrain expansions have included developing more traditional trails, increasing gladed terrain, and even adding backcountry access. Infrastructure expansions have included modernized lift systems, additional guest service structures, outdoor seating and plazas, and improved shuttle services. However, the expansion of ski area trail systems and infrastructure is ultimately limited by overall ski area capacity—there has proven to be no benefit to expanding terrain beyond the capacity of the resort. If an expansion is to be successful, all components of the resort need to be expanded equally, to increase the overall capacity and allow for reasonable expectation of increased skier visits. As some ski areas are nearing the limits of their potential skier capacity, they are finding fewer opportunities for physical expansion. In addition, one of the most pressing challenges that ski resorts are facing currently is retaining operational and financial viability in the face of variable climatic conditions. As a result, ski areas are now turning to different mechanisms to improve the guest experience and the performance of the resort. Ski resorts are now focusing on a) efficiency within their operations; b) enhancement of the existing ski experience to attract new demographics and; and c) expansion of non-skiing opportunities to enhance their appeal and bottom line.

### **1. OPERATIONAL EFFICIENCY**

Resorts have always considered cost-effectiveness in their development in order to attract guests while keeping costs down. But given the current difficulty of ski area expansions and unpredictable snow conditions, efficiency is taking on a new importance in order to retain or increase profitability. This efficiency is being developed in three fundamental areas of business: operations, sustainability, and design.

Efficiency in operations includes balancing the amount of terrain groomed on a regular basis with the amount that is required to meet demands of a resort's clientele, producing man-made

snow only on necessary acres to meet target slope densities and snow depth, using only those lifts required by demand or eliminating redundant lifts, and balancing food service seating and space with capacity. All of these techniques can lead to reduced cost and therefore increased revenue, particularly with the increased importance of snowmaking for trail coverage.

Environmental sustainability focuses on reductions in energy use through use of more efficient products. This includes variable speed AC drives, low-energy snow guns, and more efficient groomers. For example, recent improvements in snowmaking guns allow resorts to produce the same amount of snow with less energy and automated snowmaking guns can turn on and off based on weather conditions, optimizing resort energy and water use. This also includes guest service equipment retrofitting, like upgrading lighting systems, and the optimization of slope maintenance mentioned earlier.

The design and layout of the resort can also be optimized for efficiency. Resorts can properly design their lift and terrain network to have the fewest number of lifts possible to effectively serve the terrain. The terrain network can be designed to meet the needs of the type and size of the resort's skier market without being excessively large or requiring excessive grooming. Lift systems can also be optimized by eliminating redundancy in lift access and focusing on more reliable, high-capacity lifts.

## **2. ENHANCEMENT OF EXISTING SKI EXPERIENCE**

As resorts address efficiency in their operations, they are also addressing the increasingly variable snow conditions that the past decade has offered. With more frequently unpredictable winter conditions, resorts are turning to snowmaking to have a predictable opening date and high-quality snow conditions during the early and late season as well as low snow years. This increased snowmaking capacity offers resorts the opportunity to address operational and financial concerns associated with low snow years. In addition, the development of new snowmaking technology allows snow production to be more energy efficient by producing more snow with less energy than in the past. This gives resorts the ability to address operational efficiency while producing snow to improve the guest experience.

Ski resorts are also working to expand their market base beyond the traditional skier. This includes integrating new technology and programs to attract new skier participants as well as expanding beyond winter skiing opportunities to attract non-skiers to the resort. As the baby boomer generation ages and their participation in skiing declines, ski resorts are working to attract the younger generations to their slopes through integrating more technology with skiing. This includes offering on-mountain shared workspaces, mountain tours that promote the use of action cameras to capture guest adventures, and apps that let guests track their runs and stay connected with each other across the mountain.<sup>4</sup> Ski resorts are also focusing on skiers who traditionally may not be able to ski. Programs like Vermont Adaptive Ski and Sports, the National Ability Center, and the Breckenridge Outdoor Education Center offer skiers with physical or mental disabilities the chance to participate in snowsports.

---

<sup>4</sup> <https://skiff.com/2017/11/05/ski-resorts-embrace-experiences-as-millennial-interest-wanes/>

### 3. EXPANSION OF NON-SKIING OPPORTUNITIES

Ski resorts are also expanding beyond typical winter operations into multi-season operations to both attract a more diverse group of guests and provide additional income in the face of variable winter conditions. This maximizes the use of existing ski infrastructure, like ski lifts and buildings, and can help supplement expenses from bad winters.

Additional, non-skiing winter opportunities include tubing, sleigh rides, scenic lift rides and dining (gondolas or trams to mountain-top restaurants for sightseeing or lunch/dinner), mountain coasters, snow biking, fat-tire mountain biking, and other various activities. These additional activities can be appealing to families or groups where not all members ski.

Summer and fall recreation opportunities are also numerous and have become more popular in recent years. This growth has been driven by new technologies in summer recreation equipment and an increase in people who seek recreational opportunities in the managed setting of the ski resorts. The 2011 Ski Area Recreational Opportunity Enhancement Act (SAROE) provided the opportunity for the Forest Service to authorize additional seasonal and year-round recreation activities at ski areas on NFS lands. With that permission, many ski areas have created multi-season recreation opportunities for guests to enjoy.

Activities can range from more challenging, on-mountain activities to family-friendly adventure zones in the base area. On-mountain activities can include Via Ferratas (a protected climbing route containing iron rungs, pegs or even ladders), mountain coasters, zip lines, hiking trails, and mountain biking trails. These activities can offer guests a high alpine, adventurous experience in seasons other than winter. Mountain biking, in particular, can offer the thrills and ability-level progression that skiing does. Base area activities can include adventures zones (with bungee trampolines, climbing walls, an aerial adventure or obstacle course, or interpretive/educational centers), summer tubing, disc golf, and special event/gather sites. These offer guests the opportunity to explore the ski resort and surrounding natural setting in a more controlled and easily-accessible area.

The development of these multi-season recreation opportunities allows ski resorts to become a "four-season" resort and may appeal to non-skiers, who would not normally visit the resort. This can diversify a ski resort's income streams beyond just skiing, which is largely dependent on increasingly unpredictable natural seasonal snow conditions.

## E. PLAN VISION AND GOALS

Since 1968, Nordic Valley has served families, powder seekers, and visitors to the Ogden area with great snow, fun terrain, and incredible value. As part of a recent acquisition by Mountain Capital Partners, Nordic Valley is expanding to become a world-class resort destination while still retaining the down-to-earth, skiing-first experience locals have come to love. With a focus on sustainability and environmental stewardship, Nordic Valley would expand from 140 acres to over 3,500—including a new 4.3-mile-long gondola connecting North Ogden to the existing Nordic Valley base area. In addition to offering direct-to-resort access in a scenic 12-minute ride, the gondola will also help cut down on canyon traffic and vehicle emissions.

The vision and goals for the expansion are in line with Nordic Valley's legacy of providing family-friendly winter and summer recreation opportunities and connecting people with the great outdoors. The expansion will allow Nordic Valley to be better positioned to grow the ski industry, compete with other resorts, and bolster the greater Ogden region's status as a first-rate recreation destination. The expansion will also include a number of new chairlifts and significant increases to skiable acreage, as well as upgraded snowmaking capabilities. And while Nordic Valley ticket prices will likely increase as necessary to offset the ongoing cost of expansion, Nordic Valley remains committed to maintaining the resort's status as Northern Utah's most affordable ski resort and the best place to learn to ski.

Currently, many people enjoy summer recreation activities at Nordic Valley and the nearby national forest, including hunting, fishing, hiking, biking, OHV use, and horseback riding. The Nordic Valley expansion will preserve these opportunities, and in some cases even expand them, so long as public safety is protected. As a permittee on the UWCNF, Nordic Valley managers desire to 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 this National Forest, which is consistent with the Ski Area Recreational Opportunity Enhancement Act (SAROE) of 2011.<sup>5</sup>

Economic development, such as in the tourism, service, and outdoor industries, are anticipated benefits of this expansion project, for residents and visitors in Eden and North Ogden alike. With the opening of the new Nordic Valley gondola, guests can access the resort directly from North Ogden much faster than would be possible via car or bus. In addition to shortening travel times and alleviating canyon traffic, the new gondola will also help reduce vehicle emissions by providing a convenient and sustainable mass-transit solution.

### **Ski Area Recreational Opportunity Enhancement Act**

*National Forests are, and have always been, the greatest opportunity for Americans to use and enjoy their public lands. Because ski areas serve as portals to the National Forests for millions of people every year, they have a unique opportunity to involve the recreating public in natural resource-based recreation in new and exciting ways that promote an appreciation of the environment and the natural world through both adventure and discovery.*

*The 2011 Ski Area Recreational Opportunity Enhancement Act embraces this notion and provides authority for mountain resorts operating on NFS lands to offer an expanded range of outdoor recreation activities in order to further recreational opportunities for the public, allow year-round utilization of existing resort facilities, and stimulate job creation and economic growth within local communities.*

---

<sup>5</sup> Refer to the Appendix B for more information on the Ski Area Recreational Opportunity Enhancement Act (SAROE) of 2011.

## F. APPLICABLE FOREST SERVICE POLICY AND DIRECTION

Forest Service “acceptance” of this MDP does not convey “approval” of any projects contained herein. In other words, this MDP is not an approval document. It is a planning document that has been prepared in response to Nordic Valley’s vision and goals. All planned projects are subject to modification in response to site-specific analysis.

As the majority of the proposed Nordic Valley’s lift and trail network is located on NFS lands, proposed projects must be generally consistent with Forest-wide, as well as the Management Area, standards of the 2003 Wasatch-Cache Forest Plan Revision (discussed below). The planning efforts took into account the Forest-wide and existing and potential future Management Area standards and guidelines. Upon the Forest Service’s acceptance of a site-specific set of projects from this MDP, a NEPA process will commence and a thorough Forest Plan consistency analysis will be performed. Any proposed projects that are determined inconsistent with the 2003 Forest Plan Revision, either would require project modification or a Forest Plan amendment would be necessary.

A Forest Plan amendment would be required for issuance of a SUP due to the existing management area (3.1W – Watershed Emphasis). The Upgrade Plan assumes the potential future management area would be 4.5 – Developed Recreation Area. This is consistent with other ski resorts in the area. Although, these management areas have different emphases and management standards and guideline, the existing standards and guidelines for the Watershed Emphasis Management Area were used in the planning process to retain the quality and quantity of watershed resources in this area.

The following information pertaining to the Lewis Peak Roadless Area and 2003 Wasatch-Cache Forest Plan Revision are included to illustrate the unique dynamic between the ski area permittee (Nordic Valley) and the federal land management agency (the UWCNF). This information is not intended to be exhaustive.

### 1. WASATCH-CACHE FOREST PLAN: MANAGEMENT AREA PRESCRIPTIONS

#### a) Existing Management Area

The Wasatch-Cache Forest Plan Revision contains management area prescriptions that include the project area.<sup>6</sup> The project area is located in Management Area 3.1W, Watershed Emphasis. The following prescriptions apply:

- 3.1 – Aquatic Habitat (3.1A)/Watershed (3.1W) Emphasis:  
*Emphasis is on maintaining or improving quality of watershed conditions and aquatic habitats. Watershed function and aquatic habitat values are recognized as important and may require restoration to reach desired conditions. Areas of municipal watershed and public drinking water sources will be managed to*

<sup>6</sup> USDA Forest Service. 2003. Revised Forest Plan, Wasatch-Cache National Forest.

*maintain or improve soil processes and watershed conditions. Where improvement is needed, it is achieved by implementing watershed improvement projects, and by applying soil and water conservation practices to land-disturbing activities.*

- 3.1W – Watershed Emphasis Standards and Guidelines

*3.1W consists of uplands identified as important watersheds.*

*Standard 3.1W: Timber harvest, road construction and new recreation facility development are not allowed.*

*Guideline 3.1W-1: Vegetation/fuel treatment, prescribed fire, and wildland fire use are allowed for the purposes of maintaining, improving or restoring watersheds to desired conditions, and to protect property in the wildland urban interface.*

*Guideline 3.1W-2: Livestock grazing is allowed on open allotments to meet site-specifically defined desired conditions.*

*Guideline 3.1W-3: New trail construction is allowed with consideration of existing road/trail densities.*

## **b) Potential Future Management Area**

A Forest Plan Amendment would be required to be consistent with Management Prescription 3.1W – Watershed Emphasis, which could change the management area to 4.5 – Developed Recreation Area. This is the same management area that encompasses Snowbasin Resort, Pineview Reservoir, Alta, Snowbird, Brighton, and Solitude. The following prescriptions apply:

- 4.5 – Developed Recreation Area:

*These areas include developed facilities such as campgrounds, trailheads, boat docks, and resorts under special use permit as well as adjacent areas associated with these sites. High levels of visitor interaction can be expected where sights and sounds of others are noticeable and there are moderate to high opportunities for social interaction. Access to these areas is primarily by motorized roads with some trails. Visitors can expect higher levels of regulation. Signs and visitor information are noticeable throughout the area. Site development tends toward the Road Natural to Rural end of the Recreation Opportunity Spectrum (ROS). Facilities vary from rustic using native materials to facilities designed primarily for visitor comfort or convenience and built using synthetic materials. Visitor impacts can be noticeable. Impacts to natural resources are dealt with through various management techniques and regulations. Management visibility is high with managers focusing on public safety, service, education, user ethics, and enforcement. ADA level development is encouraged. Because of the large capital investments in these areas, site protection is paramount.*

- 4.5 – Developed Recreation Standards and Guidelines

*Standard 4.5: Livestock grazing and wildland fire use are not allowed.*

*Guideline 4.5-1: Timber harvest, road construction, vegetation/fuel treatment, prescribed fire, new recreation development, and new trail construction are allowed for the purposes of providing public enjoyment, safety, and protection of site investments.*

### **c) Lewis Peak Roadless Area**

The Wasatch-Cache Forest Plan Revision contains roadless area desired future conditions that include the project area.<sup>7</sup> The project area is located in the Lewis Peak Roadless Area. The Lewis Pea Roadless Area was inventoried in 1998 as part of the nationwide inventory of roadless areas that led to the enactment of the Roadless Rule in 2001. It wasn't until the enactment of the Roadless Rule that any land use management restrictions were established on that land, or on any other lands identified as IRAs in 1998. Additional details about the 2001 Roadless Rule can be found in Appendix B.

The following desired future conditions apply:

- Roadless Areas Desired Future Conditions

*All the roadless areas on the Ogden Ranger District (Burch, Lewis, and Willard Peak) will maintain or mostly maintain roadless values. They will be closed to winter motorized use with exception of a limited portion of the east side of the Willard Peak Roadless Area. Public Grove "Roadless Area" will remain open to winter motorized use.*

*Lewis Peak Roadless Area will continue to provide designated Travel Plan motorized single-track trails (including the Great Western Trail) managed to prevent off trail use and expansion of user defined trails. Winter motorized use will not be allowed. It will be managed to mostly maintain roadless values. Any proposal for special uses in the area must consider the prohibition on road construction and potential impacts to roadless values.*

- Roads/Trails/Access Desired Future Conditions

*The Ogden front will continue to be closed to winter motorized use providing non-motorized designated trail opportunities while providing maximum protection to these high value watersheds. Opportunities for limited summer motorized use on designated routes (Skyline Trail/Great Western Trail in Lewis Peak Area).*

- Mitigation of Roadless Area Impacts

*Impacts to roadless area resources, values, and desired future conditions can be mitigated in a variety of ways. Examples include (1) using over-the-snow vehicles and helicopters for staging construction materials; (2) using vehicles 50 inches or less in breadth for construction access and maintenance; (3) using ski trails as construction and maintenance access routes; and (4) using helicopters to stage materials. These mitigation measures have been successfully implemented by ski industry leaders in other locations within inventory roadless areas.*

---

<sup>7</sup> Ibid.

Additional relevant information from the Forest Plan Revision and other applicable Forest Service policy and direction, such as *Recreation Opportunity Spectrum*, *Winter Recreation*, and *Scenery Management System* guidance for the project area, can be found in Appendix B.

## G. MASTER DEVELOPMENT PLAN SUMMARY

In summary, the Upgrade Plan detailed in Chapter 4 and illustrated in Figures 14–18, includes the following:

Resort Component	Upgrades
Comfortable Carrying Capacity	<ul style="list-style-type: none"> <li>◆ Nordic Valley Upgrade Plan CCC is 11,380 guests</li> </ul>
Lift Network	<ul style="list-style-type: none"> <li>◆ A two stage gondola operating from the North Ogden base area to the Eden base area</li> <li>◆ Twelve new aerial lifts</li> <li>◆ Three carpets/telecords</li> </ul>
Terrain Network	<ul style="list-style-type: none"> <li>◆ Proposed skiable area of 3,500 acres</li> <li>◆ 708 acres of new developed ski runs within the SUP</li> <li>◆ Approximately 800 acres of total new developed ski runs (including developed ski runs within the SUP and on private property)</li> </ul>
Guest Service Facilities	<ul style="list-style-type: none"> <li>◆ Two base areas:               <ul style="list-style-type: none"> <li>» Eden Side Base Area</li> <li>» North Ogden Side Base Area</li> <li>» Potential third access point at North Ogden Divide</li> </ul> </li> <li>◆ Three on-mountain facilities:               <ul style="list-style-type: none"> <li>» Mountain Top Lodge</li> <li>» East Side Restaurant</li> <li>» West Side Restaurant</li> </ul> </li> </ul>
Parking and Resort Operations	<ul style="list-style-type: none"> <li>◆ Parking</li> <li>◆ Ticket sales, lockers, rentals, retail, bar/lounge, ski school, restaurants, ski patrol, admin</li> </ul>
Multi-Season Activities	<ul style="list-style-type: none"> <li>◆ Operation of the both gondolas and Lift A</li> <li>◆ Bike park off of Lift A</li> <li>◆ 70 miles of new hiking, biking, equestrian, and motorized trails</li> <li>◆ Numerous Ziplines on both sides of the mountain</li> <li>◆ Mountain Coaster</li> <li>◆ Challenge course/aerial adventure</li> <li>◆ Community programming – races, kid's programs and weekly events</li> </ul>

## CHAPTER TWO—SITE INVENTORY

Chapter 2 provides a brief overview of some of the unique characteristics of the SUP area that were taken into consideration when assembling this MDP. These characteristics helped inform the overall planning process from the lift and terrain network development, areas of avoidance and facility locations.

Figures 1–7 display the various site inventory elements graphically.

### A. TOPOGRAPHY

Topography is defined as “the arrangement of the natural and artificial physical features of an area” and includes the general surface shapes and features within the project area of Nordic Valley. Topography, along with slope gradient (in the following discussion), is important to a ski area for two reasons: 1) the topography must be suitable for ski area development, which generally means consistent fall lines and terrain with few grade breaks (for example, topography with alternating very steep and flat areas is not suitable), and 2) because topography variation defines terrain variety, which is consistently ranked as the second most important criterion in skier choice of a ski destination in Ski Magazine's Reader Resort Ratings, behind only snow quality.

Nordic Valley is defined by the ridgelines, valleys, and drainages of the eastern flank of the Wasatch Mountains. The ski area is located on the eastern section of the Wasatch Range, directly south of Ben Lomond Peak and Willard Peak. The main ridge runs generally north-south while two ridges run off the main ridge to the west and one runs from the main ridge to the east. The current lifts (Apollo, Bridger, and Crockett) provide access to a section on the eastern flank of the unnamed peaks.

The Upgrade Plan expansion will extend the ski area to include the summit and ridgelines to the west toward North Ogden. The summit section of the ski area will constitute the ridges, bowls, and valleys of the upper mountain while the lower section will incorporate the slopes and drainages of the lower flanks. The lift and terrain network pods will incorporate a variety of terrain topography, ranging from isolated bowls of terrain that only have one lift servicing them to lifts that traverse the mountain and provide access to a variety of terrain and other lift access.

Nordic Valley's infrastructure, parking lots, and lodges are currently found at the bottom of the eastern flank of the mountain. These areas will continue to be hubs to access the National Forest, as shown in the Upgrade Plan. This is a good topographic scenario for a ski area, as it provides a variety of aspects as well as efficient access and circulation around the terrain.

Slopes range from steep, technical sections on the mountain to almost flat in the base area. This type of topography allows for a range of ski opportunities.

- The elevation of the base facilities is approximately 5,365 feet above sea level.
- The lowest elevation of the SUP boundary will be approximately 5,150 feet above sea level.

- The upper elevation of the SUP boundary will be approximately 8,100 feet above sea level.

In addition, Weber County North Fork Park, a public park, is located approximately 5 miles north of the proposed ski area. The park is an International Dark Sky Park, which means it is a “land possessing an exceptional or distinguished quality of starry nights and a nocturnal environment that is specifically protected for its scientific, natural, educational, cultural heritage, and/or public enjoyment.”<sup>8</sup> The park is unique among Dark Sky Parks in that it is adjacent to an urban environment, has an intense focus on wildlife, has an extensive outreach program, and innovative public art incorporating dark skies themes.

## **B. SLOPE GRADIENTS**

Slope gradient defines the angle of a ski run, with 0% grade meaning flat and increasing with increasing slope gradient. On the other extreme, 100% grade means equal horizontal and vertical distances, or a 45° angle. As mentioned, slope gradient helps define terrain variety. In addition, slope gradient largely defines difficulty of terrain which directly influences what types of skiers (novice, intermediate, etc.) are able to ski the terrain. On the extreme ends, slope gradient can prevent trail development, as completely flat trails are un-skiable as are cliff faces.

The steepest slopes within the proposed SUP are located on the western flank of the mountain and on the northern eastern flank. Beside an intermediate grade on the eastern side of the planned top gondola terminals, slopes appear to decrease as one descends the mountain, with the steepest areas near the top of the ridge and intermediate and easy grades at the bottoms (both eastern and western portion) of the ridge. The eastern, lower section of the area is dominated by the existing ski area that is on private land. The current ski area features primarily novice and intermediate terrain, with steeper advanced terrain near the top of the area. The planned expansion will provide a variety of terrain suitable for all ability levels across a variety of gradients and diverse terrain. The area may also include a variety of “off piste” ski opportunities.<sup>9</sup>

Terrain ability level designations are based primarily 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.

---

<sup>8</sup> International Dark Sky Association. 2018. Available at <http://darksky.org/idsp/parks/>

<sup>9</sup> *off-piste*: skiing which occurs in areas that are un-groomed and in a natural condition.

General slope gradients are defined as:

- **0 to 8% (0 to 5°):** too flat for skiing and riding, but ideal for base area accommodations, and other support facility development.
- **8 to 25% (5 to 15°):** ideal for beginners and novices, and typically can support some types of development.
- **25 to 45% (15 to 25°):** ideal for intermediates, and typically are too steep for development.
- **45 to 70% (25 to 35°):** 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.

See Figure 3 for the existing slope analysis.

## C. ASPECT

Slope aspect, or the positioning of a slope in relation to the four cardinal directions, 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:

- **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

Nordic Valley is located on the eastern section of the Wasatch Range with exposures to the north, east, and west and some south. The higher-elevation, north-facing slopes have the best potential for snow retention, so much of the ski terrain development is focused in these areas, as detailed in Chapter 4. However, using the full range of slope aspects gives the best opportunities taking advantage of the opportunities that each aspect offers. As such, there is planned ski terrain facing in all directions. The placement and location of snow features, such as halfpipes and terrain parks, must factor in the effects of late season sun on elements of the feature, (i.e., snow softening, and the recurring process of melting and freezing).

See Figure 4 for the existing aspect analysis.

## D. SOILS AND GEOLOGY

The soils and geology within and around a ski area are an important factor to take into consideration because they influence the erosion potential of the area, the drainage capabilities, the vegetation that grows, and other important factors. Nordic Valley is located within the Middle Rocky Mountains Physiographic province, which consists of mountains, stream valleys, and alluvial basins. The area is comprised mainly of pre-Cenozoic sedimentary and Cenozoic silicic plutonic rocks.<sup>10</sup> Generally, the soils in the project area are various types of loams, aren't prone to flooding or ponding, and have a high-depth to the water table.

The western slope of the proposed area, running from the ridge line south of Ben Lomond Mountain down to the west Ogden City contains a variety of soil types. A significant portion of the soil in the mountainous region has not been surveyed and therefore data was not available for preliminary review. On the plains near Ogden, the soils include Pleasant View loam of varying slopes, Marriott gravelly sandy loam, Sterling gravelly loam, Sterling cobbly and rocky loams. There is also a gravel pit and a series of small rock outcroppings. A few of these soil varieties are prime or unique farmland while the rest are not. These soils are various types of loams, ranging from gravelly sandy loam to cobbly loam. They have generally low slopes of less than 20%. They also have a deep soil profile, generally high water storage capabilities, and a moderate to high ability to transmit water. Most of the soils have around a calcium carbonate percentage of 30.

The upper eastern slope of the mountain contains a variety of soils typical of mountainsides, including Nagitsy gravelly loam, Geertsen-Agassiz complex, Nordic gravelly loam, and Poleline-Patio association. These soils are on a variety of slopes ranging from 10 to 70%. Their parent materials are generally colluvium over residuum weathered from mixed sources including argillite, phyllite, schist, and quartzite. They are typically various loams and have low water storage capabilities. These soils are also characterized by a high variety of abilities to transmit water, with some sections having a low ability and some having an extremely high ability. The surface is generally within 60 inches of bedrock on these slopes.

The soils on the lower slopes of the eastern side of the mountain include Lamondi stony loam, Nordic-Patio association, Patio gravelly loam, and Kahler gravelly loam. These soils generally have a lower depth to the bedrock than the soils higher in elevation, are gravelly and cobbly loams, and range in slope from 3% to 60%. A small amount is prime farmland if irrigated. The parent materials are generally slope alluvium and colluvium derived from a variety of sources.

Within the project area is also the Ogden Valley southwestern margin fault. This is a middle and late Quaternary fault with a low slip rate in a well constrained location, meaning the likelihood of an earthquake is low. The fault is located to the west of the ridgeline, near the western border of the proposed SUP boundary near North Ogden.

---

<sup>10</sup> United States Department of Agriculture: Natural Resources Conservation Service. 2018. Custom Soils Resource Report for Project Area. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

## E. VEGETATION

The vegetative composition of a ski area, beyond influencing the wildlife discussed above, also influence the erosion potential of the land and its ability to retain water. It is therefore important to analyze vegetation in within a ski area boundary.

The project area is located within two ecological subsections, Monte Cristo Hinterlands and Northern Wasatch. The general landscape includes subalpine stands of coniferous forest as well as large basins with talus slope, conifer patches, and aspen groves. The north-facing slopes of the western edge of the proposed expansion include patches of various coniferous trees. Scrub oak and mountain mahogany are present on dryer slopes with talus, rock cliffs, and grassy hills. Cottonwood, dogwood, willow, birch and cherry occur along the streams within the project area. On lower slopes of the project area, oak, mountain shrub, and maple are present. Conifer stands of lodgepole pine, Douglas-fir and subalpine fir, mingled with aspen cover the eastern section of the project area.

Vegetation at Nordic Valley is typical of the UWCNF at these elevations. Previous environmental studies have located an UWCNF sensitive species, *Draba burkei*, during the construction of the Coldwater Canyon trail; however, site-specific field surveys would be needed to determine the extent, and NEPA analysis of any potential impacts will be conducted, as warranted and as previously stated, prior to any construction of the Upgrade Plan.

See Figure 5 for the existing vegetation coverage types.

## F. HYDROLOGY

Hydrology influences the availability of water in the project area as well as the movement of snowmelt and groundwater. This can influence a ski area's ability to make snow and how snowmelt impacts the project area. In addition, as the Nordic Valley Upgrade Plan is located within Management Prescription 3.1W – Watershed Emphasis, the hydrology of the land bears special importance. Nordic Valley is located within the Wasatch Mountains that are dominated by tall peaks, deeply incised canyons, and fertile valleys.

Specifically, Nordic Valley is located within the Weber River Basin, which contains a large portion of the Wasatch Range and receives runoff from these mountains as well as the Uinta Mountains. It is Utah's wettest watershed, receiving 26 inches of precipitation annually, more than twice that of the statewide average of 13 inches. The various canyons of the area have been carved by the Ogden River and other tributaries, which receive their water from the higher elevation snowfields and lakes. In the western portion of the project area, ground water occurs in unconsolidated deposits under both water-table and artesian conditions. Most water is withdrawn from the deep, confined portion of the aquifer. Water enters the artesian aquifers along the east edge of the Weber River Delta and all along the Wasatch Fault Zone where the aquifers are unconfined. Within the eastern portion of the project area, water is withdrawn primarily from the artesian aquifers, which generally have recharge zones along the flanks of the valley. There is a high variability of supply of water in the project area and actual water supply conditions rarely match the averages for the area. Evaporation and transpiration from

vegetation and natural systems utilize a majority (66%) of the water entering the Weber River Basin.<sup>11</sup>

See Figure 6 for the existing hydrology.

## **G. FISH AND WILDLIFE**

Fish and wildlife, as being federally monitored (in the case of the Endangered Species Act) as well as generally being in the public eye, are also an important consideration for ski area development. The variety of wildlife in the vicinity of Nordic Valley is typical of the species found at this elevation in the UWCNF. Preliminary research suggests there is no federally-listed species critical habitat within the project area. Within the project area, there appears to be Canadian Lynx, big game (mule deer, moose and elk), and goshawk ranges. The data shown in Figure 7 was supplied by the Forest Service but has not been field verified. Site-specific NEPA analysis of Forest Service sensitive, management indicator, and federally-listed, threatened and endangered species will be conducted, as warranted, and will be based on current information provided by the UWCNF, U.S. Fish and Wildlife Service, and State of Utah.

See Figure 7 for existing wildlife habitat.

---

<sup>11</sup> Utah Division of Water Resources. 2009. Weber River Basin Planning for the Future. September 2009. [https://water.utah.gov/Planning/SWP/Weber\\_riv/WeberRiverBasinPlan09.pdf](https://water.utah.gov/Planning/SWP/Weber_riv/WeberRiverBasinPlan09.pdf)

## CHAPTER THREE— EXISTING CONDITIONS

### A. SUMMARY OF THE EXISTING GUEST EXPERIENCE

Nordic Valley is a quaint summer and winter family-friendly resort located in the Ogden Valley with a vertical drop of nearly 1,000 feet. Guests come for the small, non-commercialized resort experience that offers inexpensive lift tickets and no crowds. It is a family-friendly resort that is known for its ski and ride school and beginner terrain. The resort, known for its beginner ski and ride programs and beginner terrain, offers the opportunity for guests to “get their ski legs under them.” The ski school offers an after-school program, private and group lessons, and opportunities for corporate outings. Three aerial lifts and a conveyor lift on nearly 70 acres of developed terrain are located on private land. The resort includes 23 trails, a terrain park, and snowmaking which covers 60% of the terrain. Night skiing is also available on all 23 trails six nights per week. Base facilities include the Barn, which contains The Grill restaurant and other base lodge facilities like bathrooms and guest storage, as well as the ski school yurt and ski patrol facilities. In recent years, the Barn base lodge has been renovated to better service guests. Nordic Valley has also expanded their summer operations to include concerts on select nights, mountain biking, hiking, disc golf, a slip and slide, and a bungee trampoline.

The examination of existing facilities presented in this chapter correlates with Figures 8–13.

This chapter primarily focuses on the existing mountain resort on private lands; however, the greater study area was inventoried for its physical resources (detailed in Chapter 2) and existing summer recreation (as shown in Figure 13).

#### Lift and Terrain Network Efficiency

*Overall resort efficiency is becoming an increasingly important factor 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 efficiently served by the fewest number of lifts possible, while maintaining desired trail densities, circulation routes, and service to the full spectrum of skier ability levels and types.*

## B. EXISTING LIFT NETWORK

There are three existing lifts at Nordic Valley, consisting of two fixed-grip doubles, a fixed-grip triple and one carpet. The area is geared towards beginner and intermediate skiers. In general, the lift system adequately services the developed terrain network; however, the lifts network is dated and will need to be updated.

The Apollo Lift, a fixed-grip double installed in 1980, is able to service all the terrain at Nordic Valley. Guests can ride the lift to access the expert terrain on the western side of the resort or beginners can take the *Old Barn Run* catwalk to the base area.

The Bridger and Crockett lifts are located on the eastern side of the resort. They are beginner lifts and provides access the terrain park. They provide redundancy for the beginner trails in this area. Bridger Lift is a fixed-grip double and Crockett Lift is a fixed grip triple.

Cub is carpet for the beginner learning area. Guests can comfortably use the carpet while learning to ski and gradually move to the Bridge lift.

Refer to Figure 8 for existing ski facilities and infrastructure.

**Table 3-1. Lift Specifications–Existing Conditions**

Lift Name/ Lift Type	Top Elev.	Bottom Elev.	Vert. Rise	Slope Length	Avg. Grade	Hourly Capacity	Rope Speed	Carrier Spacing	Lift Maker/ Year Installed
	(ft.)	(ft.)	(ft.)	(ft.)	(%)	(pph)	(fpm)	(ft.)	
Apollo/C2	6,313	5,378	935	2,955	34	1,000	500	60	Hall/1980
Cub/S	5,379	5,360	19	211	9	500	100	12	Magic Carpet/NA
Bridger/C2	5,594	5,353	241	1,340	18	900	475	63	Thiokol/NA
Crockett/C3	5,675	5,363	312	1,736	18	1,500	475	57	Yan/NA

Note:

C2 = fixed-grip double / C3 = fixed-grip triple / S = surface lift/conveyor

## C. EXISTING TERRAIN NETWORK

Evaluation of the existing terrain network requires consideration of many factors, including terrain variety and the distribution of terrain by ability level. Assessment of either of these factors on their own will not provide a complete picture of terrain at the resort. Terrain variety assessment inventories the various types of terrain to evaluate whether a resort has a well-designed and balanced developed trail system, and also has a wide variety of alternate-style undeveloped terrain. Terrain by ability level evaluation looks at the existing skier abilities levels compared to market norms.

At Nordic Valley, the terrain network is nearly 70 acres. Overarching the individual characteristics of the existing system, is a need for more diversity and capacity within the greater market.

### 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 such other considerations as lifts, value, accessibility, resort service, and others. This is a relatively recent industry trend, representing an evolution in skier/rider tastes and expectations. The implication of the importance of terrain variety is that a resort must have a diverse, interesting, and well-designed developed trail system, but also must have a wide variety of alternate-style terrain, such as mogul runs, bowls, gladed trees, open parks, in-bounds "backcountry-style" (i.e., hike-to) terrain, and terrain parks and pipes.

To provide the highest quality guest experience, ideally 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.

This analysis accounts for two types of terrain at Nordic Valley, totaling nearly 70 skiable acres:

- Lift-accessed, developed trails for beginner, intermediate, and expert skiers and riders.
- Developed terrain parks located on Bridger and Crockett lifts.

#### a) Developed Alpine Terrain

The existing developed, or formalized alpine terrain network at Nordic Valley consists of the resort's named, defined, lift-serviced, maintained trails. Despite the importance of undeveloped, alternate-style terrain, formalized runs represent the baseline of the terrain at any resort, as they are where the majority of guests ski/ride. The developed trail network represents an accurate picture of the acreage utilized by the average skier/rider on a consistent basis.

The developed trail network accommodates beginner through expert-level guests on 20 lift-served, named trails spanning approximately 70 acres. Most beginner and select/high-traffic intermediate runs are groomed on a regular basis.

## b) Terrain Parks

Nordic Valley is committed to providing freestyle terrain. A terrain park features rails, boxes, rollers and kickers. It is located on *Terrain Park* trail off of Crockett Lift, however, any areas not currently designated as having terrain features may have them in the future.

## 2. TERRAIN DISTRIBUTION BY ABILITY LEVEL

This terrain distribution analysis considers the 63 acres within the developed terrain network at Nordic Valley and the 6 acres of developed terrain park (totaling 69 acres). When comparing the terrain distribution across ability levels to the market norms, the terrain distribution could be improved on to represent a more balanced terrain network, but also catering to the specific market demand at Nordic Valley. The terrain distribution breakdown shows a need for beginner, low intermediate, intermediate and expert terrain. Novice and advanced intermediate terrain are adequately represented.

**Table 3-2. Terrain Distribution by Ability Level–Existing Conditions**

Skier/Rider Ability Level	Trail Area	Skier/Rider Capacity	Skier/Rider Distribution	Skier/Rider Market
	(acres)	(guests)	(%)	(%)
Beginner	0.5	15.9	2	5
Novice	16.3	293.5	37	15
Low Intermediate	10.3	143.6	18	25
Intermediate	16.4	164.1	21	35
Advanced	25.7	180.0	23	15
Expert	0.0	0.0	0	5
<b>TOTAL</b>	<b>69.2</b>	<b>797.0</b>	<b>100</b>	<b>100</b>

Chart 3-1. Terrain Distribution by Ability Level–Existing Conditions

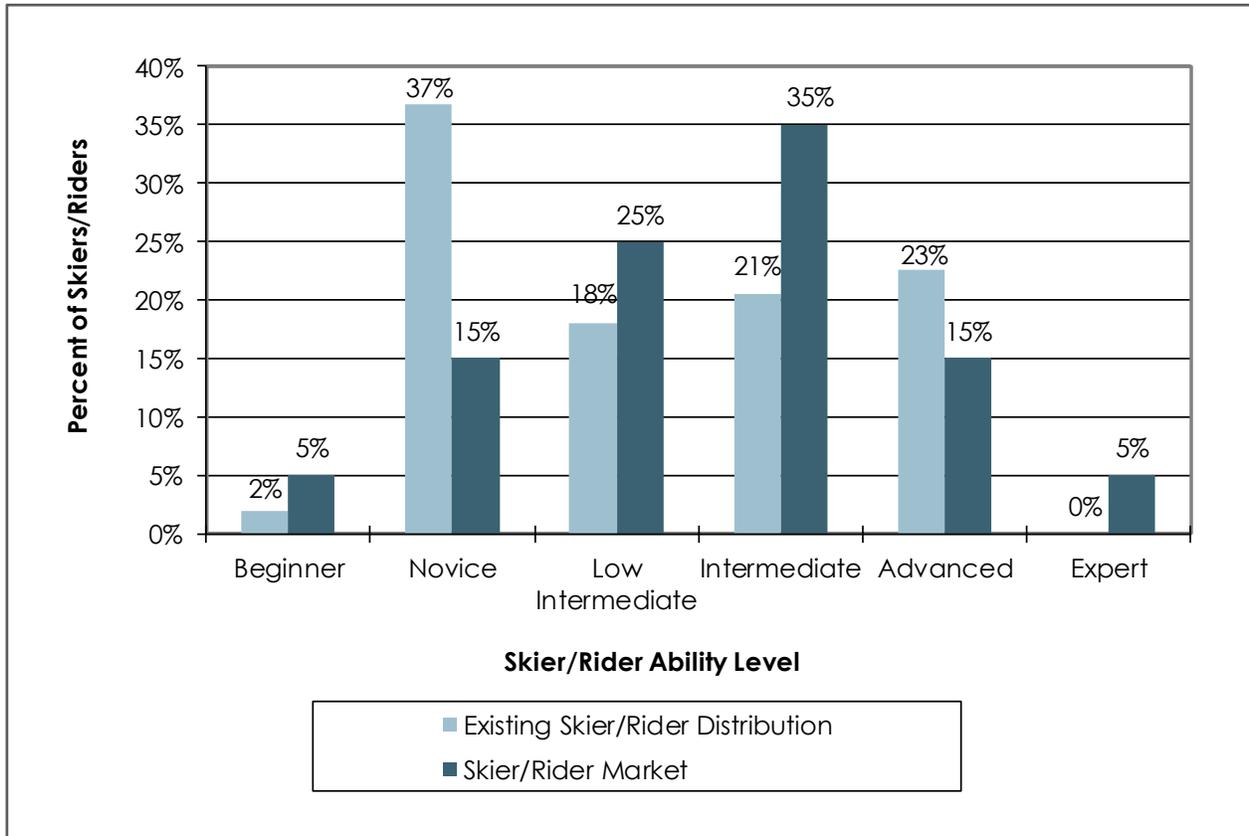


Chart 3-1 is broken down by terrain capacity percentage (i.e., how many skiers can a trail comfortably accommodate and comparing to the total number of skier/rider capacity) based on skier ability levels (beginner to expert levels). Nordic Valley currently shows a deficiency in beginner, low intermediate, intermediate and expert terrain compared to the market norms. Improving the percentage of low intermediate and intermediate level terrain may offer the guest a “next step” once they have learned the basic skiing and riding skills.

## D. EXISTING RESORT CAPACITY

### 1. COMFORTABLE CARRYING CAPACITY

A calculation of the existing CCC was completed for this MDP, as shown in Table C-2 in Appendix C. The CCC of Nordic Valley is presently calculated at 1,030 guests. It should be noted that the existing CCC of 1,030 is in alignment with Nordic Valley's current visitation levels and reflective of the current business and market demand.

#### **What is Comfortable Carrying Capacity?**

*In ski area planning, a “comfortable carrying capacity” (CCC) is established, which represents a 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.*

*Accordingly, the design capacity does not normally indicate a maximum level of visitation or a “cap” on visitation, but rather the number of visitors that can be “comfortably” accommodated on a daily basis. It is understood that peak day visitation will always exceed the resort’s CCC. Peak days, or days when the visitation level exceeds the CCC, typically occur approximately 10 days per year, with the highest peak day visitation at most resorts being at least 25% higher than the design capacity.*

*The accurate estimation of the CCC of a mountain is a complex issue and is the single-most important planning criterion for the resort. Related skier service facilities, including base lodge seating, mountain restaurant requirements, restrooms, parking, and other guest services are planned around the proper identification of the mountain’s true capacity.*

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

## 2. DENSITY ANALYSIS

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

Trail density is calculated for each lift pod by dividing the calculated average number of guests on the trails by the amount of developed terrain 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).

For details of the existing conditions density analysis, refer to Appendix C. The density analysis for Nordic Valley demonstrates an average trail density at Nordic Valley of 10 skiers/riders per acre, which is below the target trail density of 14 skiers/riders per acre. This means the trails are slightly less crowded based on uphill capacity compared to available terrain acreage.

Table C-3 in Appendix C indicates an overall resort density. For Nordic Valley, existing resort density is 74%, meaning that the resort is fairly well balanced between uphill and downhill capacities (i.e., there is good amount of downhill terrain capacity when compared to uphill lift capacity).

Although the density analysis of Nordic Valley represents a well-balanced lift and terrain network, it does not illustrate the lift network efficiency.

### 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.

#### **Lift and Terrain Network Efficiency**

*Overall resort efficiency is becoming an increasingly important factor 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 efficiently served by the fewest number of lifts possible, while maintaining desired trail densities, circulation routes, and service to the full spectrum of skier ability levels and types.*

One way to analyze Lift Network Efficiency is to calculate the average CCC per lift at a given resort. While this calculation does not relate to the overall capacity of the resort, it can indicate if: 1) the resort is not getting maximum utilization out of its lifts; or 2) if there are more lifts than necessary for the capacity levels of the resort. When calculating this average, conveyors used for teaching, as well as lifts that are used for access only, are not included. Optimally, and in general, the average CCC per lift would likely be close to 1,000 guests. Industry-wide, the average CCC per lift is approximately 650. The average CCC per lift at Nordic Valley is 320. This rating is well below the industry-wide average, indicating that overall, the lift network efficiency could be improved.

## **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 (refer to Appendix D for the complete table). A terrain density index of 100% would imply that the resort had exactly the right amount of terrain to match target densities. Nordic Valley has an index of 74%, meaning that densities are 74% 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. This relatively high index number indicates that Nordic Valley has a well balanced and efficient terrain network.

### **Balancing Uphill and Downhill Capacities**

*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 (CCC) with the trail acreage associated with that lift pod. The trail density analysis considers only the acreage associated with the developed trail network. A high trail density can restrict skiing space, degrade snow conditions, and detract from the recreational experience. A low trail density can indicate under-utilization of the existing terrain and inefficient operations.*

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

### 1. GUEST SERVICES

Guest services are currently provided in the Nordic Valley base area in The Barn, in the Ski School Yurt and the Ski Patrol Post. The Barn is the primary guest service facility for Nordic Valley and provides most beginning of day services. It was constructed in the 1950s and renovated in the mid-2010s. The Ski School Yurt is located to the north of The Barn. The yurt was constructed in 2002 and is approximately 700 square feet. This houses the adult and children's ski school operations as well as some retail sales. The Ski Patrol Hut is located on the southern part of the base area near the base of the Apollo lift. This is the main ski patrol and first aid for Nordic Valley.

Together, these base area facilities provide guest services and beginning of day services (ticketing, rentals, retail, ski school), food and beverage service/seating, ski patrol/first aid, and administrative functions. In total, the guest service facilities at the base areas comprise approximately 5,000 square feet of guest service space and administrative space for Nordic Valley.

The existing guest service space at Nordic Valley base area is generally considered adequate. However, when compared to industry norms and recommended ranges (Table 3-3), the guest service space is well below recommendations for resort guest service facilities. This likely translates into a less desirable guest experience, particularly on the weekends and holidays when Nordic Valley experiences some of its highest visitation days.

### 2. SPACE USE ANALYSIS

Based upon a CCC of 1,030 skiers, Table 3-3 compares the current space use allocations of the guest service functions to industry norms for a resort of similar market orientation and regional context. Square footage contained in this table is calculated to illustrate how Nordic Valley currently compares to industry averages, and should not be considered absolute requirements.

#### **Space Use Planning**

*To provide a balanced resort experience, sufficient guest service space should be provided to accommodate the existing resort CCC. The distribution of the CCC is utilized to determine guest service capacities and space requirements at base area and on-mountain facilities. The CCC should be distributed between each guest service facility location according to the number of guests that would be utilizing the lifts and terrain associated with each facility.*

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

**Table 3-3. Space Use Analysis–Resort Total–Existing Conditions**

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	165	230	280
Public Lockers		700	850
Rentals/Repair	1,077	1,650	1,850
Retail Sales	149	490	590
Bar/lounge		730	890
Adult Ski School	300	370	450
Kid's Ski School	400	740	910
Restaurant Seating	518	3,410	4,160
Kitchen/Scramble	350	1,070	1,310
Rest rooms	100	780	950
Ski Patrol	420	390	480
Administration	500	490	590
Employee Lockers/Lounge	120	190	240
Storage		510	750
Circulation/Waste	994	1,520	2,240
<b>TOTAL SQUARE FEET</b>	<b>5,093</b>	<b>13,270</b>	<b>16,540</b>

As shown in Table 3-3, Nordic Valley has a deficiency of space in some guest service categories but is sufficient in others. While all deficiencies should be corrected, deficiencies in critical services like rental and repair, retail sales, restaurant/bar seating, kid's ski school and restrooms detract from the guest experience at the resort even on average visitation days. On peak visitation days, guest service conditions are often very poor due to substantial overcrowding.

### 3. FOOD SERVICE SEATING

All Nordic Valley food services are located at the base area. No on-mountain services are provided. Food services are offered through the Nordic Valley Grill, which is a cafeteria-style food venue that offers a variety of burgers, sandwiches, salads, pizza, and other grill items as well as drinks and deserts. Seating is available both inside and outside the The Barn, with benches and tables available inside and a variety of picnic tables available outside. There are presently 70 indoor restaurant seats and 78 outdoor restaurant seats for a total of 148 available dining seats. Therefore, the estimated lunchtime turnover rate of seating is 4, the required seats to service Nordic Valley's anticipated lunchtime demand, given the CCC of 1,030, is 592. Given the generally low crowds present at Nordic Valley, seating is therefore usually adequate. This seating capacity includes both indoor and outdoor seating; however, outdoor seats may not be available in periods of inclement weather.

**Table 3-4. Recommended Restaurant Seating-Existing Conditions**

	Base Area	Resort Total
Lunchtime Capacity (CCC + 5% non-skiing guests)	1,082	1,082
Average Seat Turnover	4	
Existing Seats	148	148
Required Seats	270	
Difference	-122	
Existing seating capacity	592	592

#### Restaurant Seat Turnover

*A key factor in evaluating restaurant capacity is the turnover rate of the seats. A turnover rate of two to five times is the standard range utilized in determining restaurant capacity. 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.*

## B. EXISTING PARKING CAPACITY

Parking at Nordic Valley is offered in four areas in the base area. Four parking lots, totaling approximately 3.5 acres, are offered adjacent to the Barn. There is the upper lot next to the Barn, a lower lot directly below the upper lot, a lot to the south next to the main Apollo lift, and a lot across the road from all three lots. The four guest parking lots collectively accommodate approximately 404 cars. Applying an average occupancy rate of 2.7 passengers per vehicle, Nordic Valley's parking areas currently have a capacity of approximately 981 people. Parking is typically adequate on most days. Based on the CCC of Nordic Valley, only 37 additional parking spaces are needed to comfortably accommodate 1,030 guests on a given day.

**Table 3-5. Recommended Parking at Staging Portals–Existing Conditions**

	Multiplier	Resort Total
CCC + 5% non-skiing guests		1,082
% parking at portal		
# parking at portal		1,082
net # requiring parking		1,082
# of guests arriving by car	100%	1,082
# of guests arriving by charter bus	0%	0
Required car parking spaces	2.70	401
Required charter bus parking spaces	35.00	0
Equivalent car spaces (1 bus=4.5 car)	4.5	0.0
Required employee car parking spaces		41
Total required spaces		442
Existing parking spaces		404
surplus/deficit		-37
Existing parking capacity (guests)		981

### Maximizing Parking

*On peak visitation days, parking at most mountain resorts can be a problem. Resort plan for these days by using staff to more efficiently park cars and average vehicle occupancy rates are typically higher than average days due to holidays and weekend carpooling. This results in higher numbers of parked cars in the same lots.*

## **C. EXISTING RESORT OPERATIONS**

### **1. SKI PATROL/FIRST AID**

Ski patrol service is currently provided at the base area in the Barn, as well as at the top of the Apollo Lift. The ski patrol area within the base lodge is approximately 420 feet in size and is open to the public as needed.

### **2. SNOWMAKING**

Snowmaking typically begins in November, made over bare ground, and establishes the base and initial skiing surfaces until natural snow falls and provides sufficient cover. Snowmaking is also used to touch up thin spots as they occur. Currently, Nordic Valley makes snow on 31 acres of terrain, or about 60% of terrain. Nordic Valley draws their water from surface water diversions and groundwater wells, diverted to two small ponds located at the base of the mountain which have a cumulative capacity of approximately 700,000 gallons. Nordic Valley uses approximately 11 million gallons of water for snowmaking.

Nordic Valley currently has 37 acre-feet of water rights, through an exchange water right with Weber Basin Water Conservancy District.

Refer to Figure 9 for existing snowmaking coverage.

### **3. GROOMING**

Groomed terrain is important to the majority of guests who visit Nordic Valley and who are just learning to ski or are a beginner trying to improve. Nordic Valley has two grooming machines, a Prinoth Winch and a Free Groomer. Most of the terrain is groomed on a regular basis.

### **4. NIGHT SKIING**

Night skiing is appealing for guests who work during the day, for children to ski after school, and for those who just prefer to ski in the evening. It allows a resort to extend their operating hours and incorporate more guests into one day of skiing. Nordic Valley provides night skiing on all of ski developed runs six nights a week during winter operations

### **5. MAINTENANCE FACILITIES**

Nordic Valley has five separate maintenance facilities. the main maintenance building is a 1,500 square foot building that includes employee space, storage, and a variety of mechanical and electrical maintenance space and equipment. Nordic Valley also has a 100 square foot snowmaking building, an 830 square foot maintenance building, and two sheds for electrical and lift maintenance.

## **6. INFRASTRUCTURE AND UTILITIES**

Electric power is supplied to Nordic Valley from Rocky Mountain Power, which has adequate capacity for current operations.

### **a) Electrical Usage**

Nordic Valley operates typically from November to March in the winter season and June through August in the summer season. In the winter season, Nordic Valley uses approximately 23,500 kWh over the 5 month season or approximately 4,700 kWh per month. In the summer season, Nordic Valley uses approximately 3,000 kWh per month on average.

## **7. CULINARY WATER AND WASTE WATER TREATMENT**

### **a) Waste Water**

Wastewater generated at Nordic Valley is treated in an on-site septic tank and leach field. This current system is currently inadequate and has to be pumped twice a year.

### **b) Domestic Water**

Potable water is supplied to Nordic Valley by Nordic Mountain Water.

## **8. MOUNTAIN ROADS**

The mountain road network at Nordic Valley is located on private land. There is road access to the top of all three lifts. Road access to the top of the Apollo Lift is via a dirt road from Viking Drive which connects to a road on the existing ski run *Old Barn Run*. In general, the mountain roads provide good access to Nordic Valley existing infrastructure.

## D. EXISTING RESORT CAPACITY BALANCE AND LIMITING FACTORS

The overall balance of the existing resort is evaluated by calculating the capacities of the resort's various facilities and comparing those facilities to the resort's CCC. The existing capacities are shown in Chart 3-2.

**Chart 3-2. Resort Capacity–Existing Conditions**

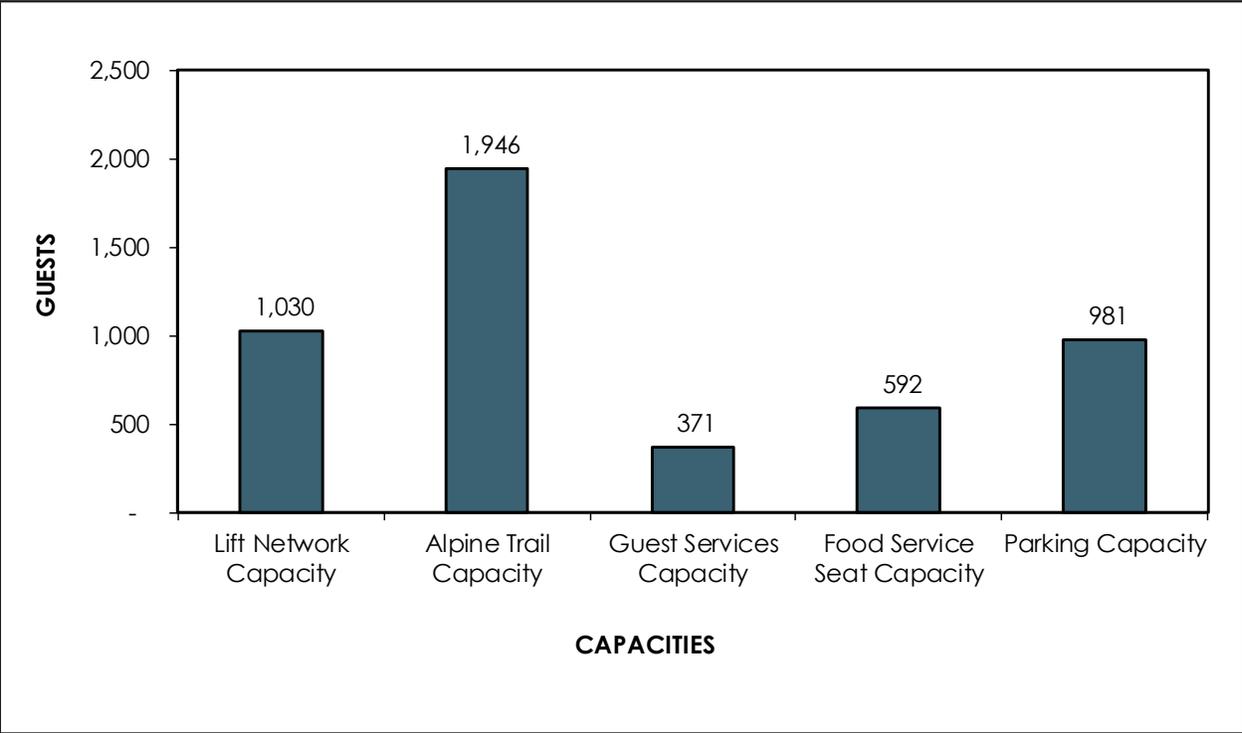


Chart 3-2 demonstrates the need to better balance resort facilities at Nordic Valley. The CCC balances well with the existing parking capacity, while the guest service and food service capacities show deficiencies in each category. This is to be expected. Nordic Valley has been oriented towards being a friendly-friendly affordable resort; however, by investing in higher margin guest service areas such as rentals, retail, restaurant/bar seating and kids ski school, Nordic Valley could improve operation budgets. By improving the guest service and food service spaces, Nordic Valley drastically improve the guest experience on the busiest days. As visitation regularly meets the overall resort CCC of 1,030, Nordic Valley's facilities are often maxed to their capacity, degrading the guest experience and constricting resort operations. Improvements to facilities across the resort are necessary, with a particular need to increase guest service space.

## **E. EXISTING MULTI-SEASON ACTIVITIES**

### **1. SUMMARY OF THE EXISTING MULTI-SEASON ACTIVITIES GUEST EXPERIENCE**

Nordic Valley draws moderate visitation in the summer. Many guests come to escape to the mountains from places like Ogden and Salt Lake City. Outdoor-oriented guests can utilize lift-accessed hiking and mountain biking while those looking for more of an easy thrill can experience the Slip N Slide and bungee trampoline. Sports-focused guests can play disc golf on the 18-hole disc golf course. In addition, visitors can also rent the space out for company events, banquets, and weddings. However, Nordic Valley has just opened the summer aspect of its operations and is therefore just setting itself up as a summer destination. Bordering the UWCNF provides Nordic Valley with the unique opportunity to be the introduction to outdoor and adventure activities the National Forest has to offer. In addition, the potential expansion of the Nordic Valley operations and SUP area offers great opportunities for Nordic Valley to expand its summer operations.

See Figures 12 and 13 for existing summer facilities and use at the existing resort and in the study area.

### **2. MOUNTAIN BIKING AND HIKING**

Nordic Valley offers a variety of mountain biking and hiking trails. Trails can be accessed from the base area or by utilizing the Apollo lift to start at the top of Nordic Valley. The trail system has over 9 miles of trails. Most trails are multi-use hiking and biking trails; however, the Fazzari trail offers some mountain bike-specific terrain features for intermediate and advanced riders. Nordic Valley does not offer rental equipment and guests must purchase a lift ticket to ride the Apollo lift.

Throughout the Upgrade Plan study area, there are additional hiking and mountain biking trails, including a section of the popular Bonneville Shoreline Trail (BST). Additionally, there is the Skyline Trail, a permitted motorized singletrack trail that is identified in the Forest Plan as such.

### **3. DISC GOLF**

Nordic Valley offers an 18-hole disc golf course with distances per hole ranging from 184 feet to 357 feet. Disc rentals are available at the Barn and guests start at the top of the Apollo lift and work their way down the mountain.

### **4. SLIP AND SLIDE**

A 400-foot-long "Slip N Slide" ride, where guests can slide down an inflated, watery slide, is located on the slope between the Apollo and Bridger lifts.

### **5. BUNGEE TRAMPOLINE**

Guests can use a large trampoline while strapped into an overhead bungee to jump and flip while safely restrained.

## **6. EVENTS AND PROGRAMMING**

Nordic Valley hosts a variety of events during the summer, including the weekly Nordic Nights music; annual Spartan Race and Canyon Ball Go-Ride Gravity Race Series; and participation in the Ogden Valley balloon and arts festival.

### **a) Saturday Night Concerts**

Nordic Valley offers “Nordic Nights,” which are Saturday night live music events that typically take place from 6:00 p.m. to 8 pm. Guests can bring their own chairs, coolers, etc. or purchase food from The Grill.

### **b) Spartan Races**

Nordic Valley hosts a Spartan Race annually, where participants must run through an obstacle course in either a “Super” or “Sprint” category, which vary the length of the race.

### **c) Special Events**

Guests can rent the facilities to hold special events and weddings at Nordic Valley. Catering can be provided by The Grill.

## CHAPTER FOUR—UPGRADE PLAN

---

### A. SUMMARY OF THE GUEST EXPERIENCE UPGRADE

The Upgrade Plan at Nordic Valley intends to expand the existing resort into a destination resort—comparable to others in the region. The critical component of this plan is the issuance of a SUP in the UWCNF. The terrain and lift network would expand into this SUP area, increasing in both size and diversity, shifting the resort from a small ski hill to a major destination resort that appeals to local families, travelers from the broader Wasatch Front, and destination visitors from around the country and world. At full build-out of the resort, it would have 3,335 feet of vertical, over 3,500 total acres of skiable terrain, 15 aerial lifts, and a capacity of over 11,000 people per day. For comparison, that would make it slightly larger than Snowbasin Resort, which has 2,959 of vertical, 3,000 acres of skiable terrain, 11 lifts, and a capacity of 9,600 people per day. It would also be larger than Deer Valley Resort, but significantly smaller than Park City Mountain Resort.

Within the broader Utah area, and specifically the Wasatch Front, growing rapidly, there is certainly demand for increased mountain resort capacity. Nordic Valley is one of the northernmost ski resorts on the Wasatch Front and is within an hour of Logan, Ogden, and Salt Lake City. The proximity of Nordic Valley to those major population centers provides the opportunity for the demand (in terms of increased visitation) to meet the increased resort capacity developed through the proposed expansion.

The Upgrade Plan for Nordic Valley would add 2 gondolas, 12 lifts and 3 surface lifts, and would increase the terrain network to over 3,500 skiable acres. The terrain expansion would raise the summit elevation of the resort from approximately 6,300 feet to over 8,100 feet and would add a variety of steeps, high elevation bowls, and secluded glades. The expansion would greatly increase the diversity and size of terrain, providing the opportunity for guests to experience the technical and challenging terrain that Utah is known for while still offering the beginner-friendly terrain on which Nordic Valley was founded.

Three on-mountain facilities are planned to be constructed to service the increased on-mountain guest needs. Additional service at both base areas are planned as well.

A certain level of evolution and market development is anticipated to fill in for some of the service needs at the base area in Eden and North Ogden. The development of these areas and of this proposed project is anticipated to take ten to twenty years. This development includes vacation lodging and long-term housing, food and beverage, and other associated infrastructure like roads and walkways.

The Upgrade Plan would require a Forest Service-issued SUP and Forest Plan amendment for approval.

The Nordic Valley Upgrade Plan is illustrated on Figures 14–18.

## **B. LIFT NETWORK UPGRADE**

The Upgrade Plan includes new lift installations that will transform the existing lift infrastructure into an efficient, modern lift network suitable for a world-class destination resort. The expanded lift network has been thoughtfully laid out to utilize terrain at higher elevations and with northern aspect to maximize snowpack. The lift network upgrade includes 2 new gondolas, 12 new aerial lifts and 3 surface lifts. The Nordic Valley Upgrade Plan lift network is shown on Figure 14.

### **1. NEW LIFT INSTALLATIONS**

#### **a) Gondola System**

The centerpiece of the mountain plan is a gondola system that would span from the North Ogden base area to the Eden base area, with a station at the summit of the mountain. The North Ogden Gondola would be 2.5 miles long, while the Eden Gondola would be 1.8 miles long. Collectively they would make what could be the longest gondola in the United States and would rival Whistler-Blackcomb's Excalibur Gondola for total length. This state-of-the-art gondola would function not only as repeat-ski lifts for both sides of the resort, but also as a transportation method to connect the population base of the Wasatch Front to the NFS lands in the Wasatch Mountains and the Ogden Valley region. These gondolas would serve as the primary gateways to the mountain, as they would run from both base areas on the eastern and western sides to the summit of the mountain. They are envisioned to be high hourly capacity and to operate into the evenings and throughout much of the year. It is anticipated that hourly capacity would be about 3,000 people per hour (in both directions). Initial capacities would likely be lower, with capacity added as demand dictates. Final hourly capacity could be as high as 4,500 pph, if needed.

One of the components of the mountain design is that, during early or late season or periods of low snow, the gondola system could be operated to transport skiers up to the summit, even if there was inadequate snow cover at the base areas. Skiers would then be able to ski on the upper elevation lifts (Lifts J, B, H, F), and then ride the gondola back down to the base areas.

#### **b) Eden Bowl Pod (Lifts A, B, C, J)**

The Eden Bowl pod consists of four lifts, including Lifts A, B, C and J. These lifts serve primarily the eastern portion of the mountain and provide access to the majority of the resort's intermediate and novice terrain, as well as a significant amount of advanced terrain. Lift A also plays an important role as an out-of-base access lift. The gondola and Lift A would combine to provide the majority of the out-of-base access to the upper lifts. Additionally, if the gondola were to be on a wind hold, Lift A would provide access to additional lifts that would presumably be able to be operated. The terrain in this area would be important to first-time visitors, beginners, and lower ability level skiers. Lift B would access mid mountain terrain and provides access to the summit of the ridgeline south of the peak of the mountain. Lift C provides access from lower elevations up to the ridge line farther south of Lift B. Lift C also provides direct access to the large East Side on-mountain restaurant. Lift J is a novice terrain lift that provides the opportunity for novice and low intermediate skiers to be able to repeat ski at the upper elevations of the resort. Note that hourly capacity on this lift could be as high as 2,400 pph if needed.

**c) Pineview Pod (Lifts D, K)**

The Pineview pod consists of two lifts: Lift D and Lift K, and provides access to the more secluded and dispersed terrain located on the southern edge of the proposed expansion. They would offer guests the opportunity to ski intermediate and advanced terrain within lift network that feels more remote due to its distance from the central portion of the mountain and its viewshed. Lift D operates on the eastern side of the ridgeline that faces Eden and is the southernmost lift of the proposed expansion. Lift K provides access to a variety of secluded trails within a south facing bowl.

**d) The Divide Pod (Lifts F, G)**

The Divide pod offers access to a variety of north-facing terrain within the resort and is the northernmost pod in the proposed expansion. These north-facing pods have the best ability to retain both the quantity and quality of snow for the longest periods. The pod contains a variety of steep sections as well as some intermediate terrain and offers views of Ben Lomond and the mountain ridges to the north. Lift G is the northernmost lift and would be a mostly self-contained section with the majority of trails starting and ending with use of Lift G. Lift F serves a northwest-facing bowl and runs from the summit of the proposed mountain down to an approximate elevation of 5,900. It serves trails that offer the ability to repeat the terrain, but also serves trails that traverse to other sections of the mountain.

**e) Coldwater Canyon Pod (Lifts E, H, I, L)**

The Coldwater Canyon pod includes Lifts E, H, I and L. The pod contains some of the most advanced terrain Nordic Valley would offer, including steeps, chutes, glades, open bowls, cliffs, and other technical terrain. The intent of the design in this pod is that the terrain would be left more natural than in other parts of the resort, similar to what might be found in the Little Cottonwood Canyon resorts. The pod is located on the western edge of the proposed expansion. Lifts E, L, and I all provide different access to the terrain within this pod while Lift H allows skiers to return from this pod to the summit of the mountain and access other parts of the mountain.

**f) Surface Lifts**

In addition to the aerial lifts detailed above, there would be numerous surface lifts around the mountain, both for access/circulation and for beginner teaching lifts. Two telecords are planned adjacent to the Summit and East Side Restaurants. A beginner carpet is also planned near the Summit Restaurant as well. This will provide an excellent learning pod at the top of the mountain, opposed to the where beginner pods are typically located in the base area. The exact number of conveyor lifts in the base areas (on private property) has not been determined but will ultimately respond to current technologies and market trends. It is possible that additional conveyor lifts would be installed but would not have a substantive effect on overall capacity.

**Table 4-1. Lift Specifications–Upgrade Plan**

Map Ref.	Lift Name/ Lift Type	Top Elev.	Bottom Elev.	Vert. Rise	Slope Length	Avg. Grade	Hourly Capacity	Rope Speed	Carrier Spacing	Lift Maker/ Year Installed
		(ft.)	(ft.)	(ft.)	(ft.)	(%)	(pph)	(fpm)	(ft.)	
1	Apollo/C2	6,313	5,378	935	2,955	34	1,000	500	60	Hall/1980
2	Cub/S	5,379	5,360	19	211	9	500	100	12	Magic Carpet/NA
3	Bridger/C2	5,594	5,353	241	1,340	18	900	475	63	Thiokol/NA
4	Crockett/C3	5,675	5,363	312	1,736	18	1,500	475	57	Yan
G1	Gondola 1/G8	8,105	5,382	2,723	9,578	30	3,000	1,200	192	Planned
G2	Gondola 2/G8	8,105	4,770	3,335	13,384	27	3,000	1,200	192	Planned
A	Lift A/D6	6,990	5,393	1,597	4,810	36	3,600	1,000	100	Planned
B	Lift B/D4	8,100	6,483	1,617	4,678	37	2,400	1,000	100	Planned
C	Lift C/D4	7,715	5,665	2,050	6,364	34	2,400	1,000	100	Planned
D	Lift D/D4	7,455	5,951	1,505	4,746	34	2,000	1,000	120	Planned
E	Lift E/D4	7,995	5,824	2,171	6,107	39	1,800	1,000	133	Planned
F	Lift F/D4	8,096	6,099	1,997	5,094	44	2,400	1,000	100	Planned
G	Lift G/C3	7,499	5,934	1,565	4,148	41	1,800	500	50	Planned
H	Lift H/C3	8,096	6,508	1,589	4,086	43	1,800	500	50	Planned
I	Lift I/C3	7,365	5,368	1,997	4,630	50	1,500	500	60	Planned
J	Lift J/C3	8,072	7,430	642	3,376	19	1,800	500	50	Planned
K	Lift K/C3	8,085	6,588	1,497	4,114	40	1,800	500	50	Planned
L	Lift L/C3	8,030	6,615	1,415	3,251	49	1,500	500	60	Planned
M	Summit Tow/S	8,097	8,050	47	508	9	1,000	325	20	Planned
N	East Ridge Tow/S	7,710	7,698	12	809	1	1,000	325	20	Planned
O	Summit Carpet/S	8,091	8,075	16	77	21	600	120	12	Planned

Note:  
C2 = fixed-grip double / C3 = fixed-grip triple / D4 = detachable quad / D6 = detachable six-person / G8 = 8-person gondola /  
S = surface lift/conveyor

## 2. UPHILL ACCESS

Uphill access, or the practice of skiing uphill at mountain resorts instead of riding lifts, is gaining in popularity. Also referred to as skinning, alpine touring, or ski mountaineering, most resorts around the country are seeing increased interest and use by uphill skiers. While backcountry skiers have used these techniques and equipment for hundreds of years, their common use at alpine ski resorts is a fairly new phenomenon. It should be noted that uphill access also encompasses snowshoeing and hiking up the mountain in winter.

Though it's still a relatively new industry, uphill access has grown enough to require many resorts to develop and define policies and procedures around the activity. In addition to the growing use, recent Forest Service policy has been developed to address increased use at mountain resorts across the nation. Resorts have the legal right to restrict or prohibit uphill travel within their boundaries, whether they operate on private or National Forest System property. These policies have been developed to address the potential conflicts that arise between the growing interest in uphill inbound travel and mountain operations like grooming, snowmaking, and avalanche control. There is agreement that uphill access should not impede or obstruct ski area operations at any time. For the safety of uphill recreators and mountain operations staff alike, any ski runs actively involved in any aspect of resort operations (e.g., snowmaking, grooming, or avalanche control) will be closed to public use. Many resorts restrict all uphill use during periods of avalanche control work or winch cat operation.

A complicating factor to this use is that much of the uphill access traffic occurs in the early mornings, prior to the lifts opening. This is often a busy time for operations as preparations are made for opening the resort. However, this is also desirable because it reduces conflicts between uphill and downhill skiers.

Resorts each have their own policies regarding uphill travel, which vary significantly.

- Some resorts require a ticket to be purchased, but many do not.
- Many resorts only allow uphill access either before or after the resort is open, but some allow access throughout the day.
- Some resorts restrict access to only specific ski runs, while some do not have restrictions.
- Most resorts have some technique of signaling closure of the entire resort to uphill access.

At the existing Nordic Valley resort, uphill access is allowed on specified runs, with an uphill pass. It is anticipated that this same policy will be maintained for the planned expansion. While no specific details have been established at this stage, it is likely that access would be allowed from both sides, and would extend up to the summit ridge. It is thought to be likely that one of the more popular access points for uphill skiing would be the North Ogden Divide along North Ogden Canyon Road. In this scenario, uphill access would occur in the Lift G pod.

## C. TERRAIN NETWORK UPGRADE

The planned lift network described above would provide access to a large amount of both developed and undeveloped terrain throughout the planned SUP area. The amount of planned ski terrain is designed to balance with the lift network capacity, to create a balanced, operationally efficient resort. The new terrain is outside of Nordic Valley's existing operational area and would require the creation of a SUP with the UWCNF. These upgrades would increase Nordic Valley's ability to match the demand for lift-served skiing by the visitors of the UWCNF by increasing the diversity and expanse of terrain at Nordic Valley. The upgraded terrain network also provides a better match between terrain at Nordic Valley and the skier demand for the various ability levels—from beginner to expert.

### 1. TERRAIN VARIETY

As discussed in the previous chapter, 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). 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 have a wide variety of alternate style terrain, such as mogul runs, bowls, trees, glades, open parks, in-bounds "backcountry style" (i.e., hike-to) terrain, and terrain parks and pipes.

To provide the highest quality guest experience, resorts should offer groomed runs of all ability levels and some level of all the undeveloped terrain types to the extent practical. 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 are only usable when conditions warrant, they represent the most intriguing terrain, and typically are the areas that skiers/riders strive to access.

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 still ski and ride, and they are usually the only place to go during the early season, periods of poor or undesirable snow conditions, avalanche closures, and certain weather conditions. As such, the developed trail network represents a true reflection of acreage used by the average skier/rider on a consistent basis and used by virtually all guests during early season conditions, poor snow conditions, avalanche closures or certain weather conditions. Therefore, the total acreage of the developed terrain network, and its distribution by ability levels, must be sufficient to accommodate the full capacity of the resort. As such, the two terrain types are discussed separately in this chapter.

The expansion would add traditional developed, gladed, and undeveloped terrain to the terrain network at Nordic Valley. The topography within the SUP expansion area includes steeps, bowls, and glades intermingled within, and outside of, the developed and maintained terrain network. Steep chutes and gullies are primarily located on the western portion of the expansion area in the Coldwater Canyon pod. The expansion would shift terrain from primarily novice with some intermediate trails to a more balanced portfolio of beginner, intermediate, and advanced terrain. This terrain would also be distributed among traditionally-cleared and groomed runs, maintained but gladed terrain, and fully undeveloped terrain.

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.

## **2. DEVELOPED TERRAIN NETWORK**

The following section details the planned developed terrain network at Nordic Valley. For a full list of terrain specifications, see Appendix E and the corresponding Figure 14.

### **a) Eden Bowl Pod**

As discussed in the lift section, the Eden Bowl pod offers beginner and intermediate skiers expanded access to the more moderate terrain available on the eastern portion of the mountain. The terrain in this pod would be primarily traditional, develop ski runs with snowmaking and grooming throughout. Skiers will be able to transition from the beginner-oriented base area to explore the more difficult terrain available higher up on the mountain.

### **b) Pineview and the Divide Pods**

The Pineview and the Divide pods are located in the southern and northern parts of the proposed expansion, respectively, and offer a more remote and secluded experience due to their distance from the main portion of the mountain. The terrain includes a variety of intermediate and advanced options, with a majority of advanced terrain being concentrated in the Divide pod. The trails within these pods will offer skiers a mixture of developed and undeveloped skiing, with both traditional groomed runs as well as a more natural skiing experience, with gladed and undeveloped terrain present, as well as views of the mountains to Ben Lomond and other mountains to the north and Mt. Ogden and other peaks to the south. The Divide pod has north-facing terrain, with good snow retention, while the Pineview pods has east and south facing terrain, with good sun exposure.

### **c) Coldwater Canyon Pod**

Coldwater Canyon pod would offer a variety of advanced and intermediate terrain. The most advanced terrain would be located within this pod and there would be a variety of natural gladed terrain. This pod would provide a more undeveloped terrain experience than the other areas. While there would be a few traditional developed runs, the majority of the terrain would be undeveloped—including steeps, chutes, glades, open bowls, cliffs, and other technical terrain. This pod would appeal to advanced skiers wishing to use steep, technical terrain in a more natural, treed setting.

### **d) Beginner/Novice Teaching Terrain**

Teaching terrain at Nordic Valley would be clustered in two locations: the Eden side base area (the existing Nordic Valley terrain) and the summit area. There is a significant amount of beginner and novice terrain available along the summit ridge, allowing the development of a teaching area that would be accessed by riding the gondola, providing a rare higher-elevation experience with excellent views for lower ability level skiers, who are often restricted to the lowest elevations of mountain resorts.

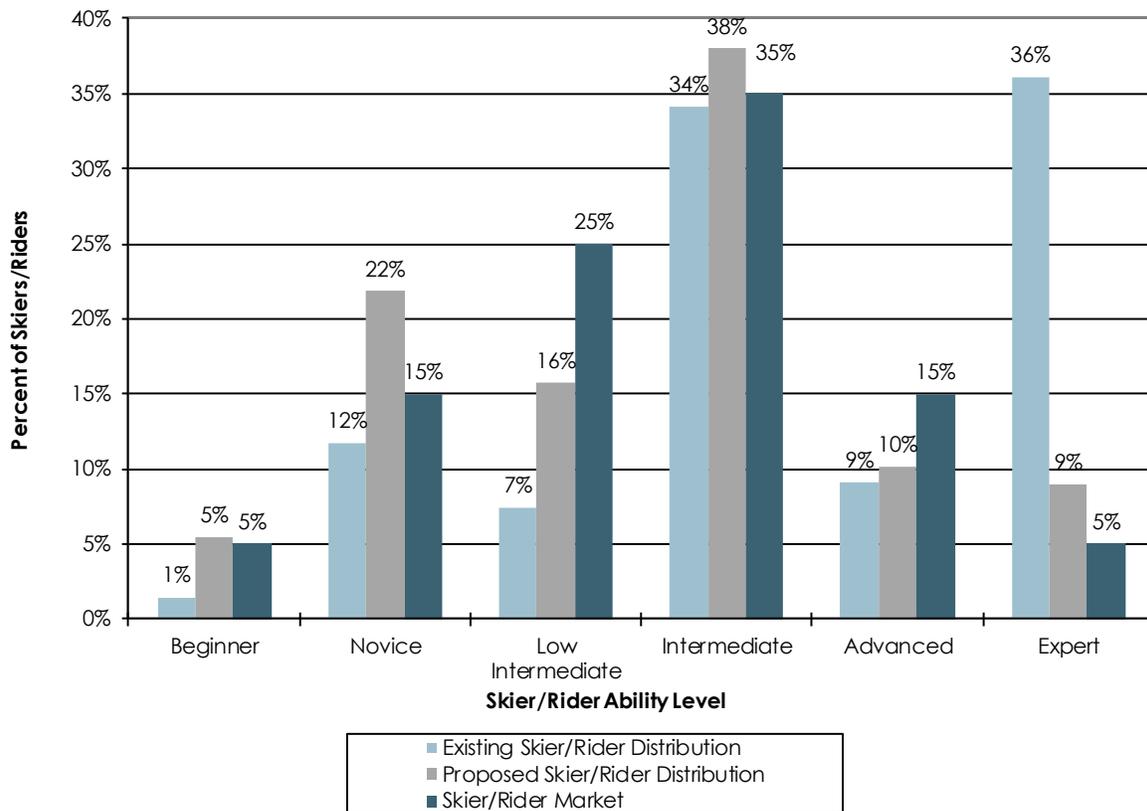
### 3. TERRAIN DISTRIBUTION BY ABILITY LEVEL

An analysis of the distribution of terrain by skier ability level for Nordic Valley's upgraded trail network demonstrates a better match between terrain at the resort and the needs of its market while accommodating the full range of skier ability levels—from beginner to expert. While the analysis shows a surplus of novice terrain, this largely due to the quantity of skiways that are required for circulation around the mountain. There are slight deficiencies in low intermediate and advanced terrain, reductions in those deficiencies are achieved in the Upgrade Plan, and as noted previously, terrain variety and the availability of undeveloped terrain not accounted for in this calculation mitigate these minor deviations from the market.

**Table 4-2. Terrain Distribution by Ability Level—Upgrade Plan**

Skier/Rider Ability Level	Trail Area	Skier/Rider Capacity	Skier/Rider Distribution	Skier/Rider Market
	(acres)	(guests)	(%)	(%)
Beginner	12.3	370	5	5
Novice	99.0	1485	22	15
Low Intermediate	62.8	1068	16	25
Intermediate	287.3	2585	38	35
Advanced	76.6	689	10	15
Expert	304.0	608	9	5
<b>TOTAL</b>	<b>842.0</b>	<b>6,805</b>	<b>100</b>	<b>100</b>

**Chart 4-1. Terrain Distribution by Ability Level–Upgrade Plan**



#### 4. TERRAIN CONSTRUCTION AND GRADING

Note that all planned developed ski runs discussed in this section are all developed style trails, with well-defined and smooth skiable surfaces. As such, heavy machinery would be required in certain circumstances to achieve the desired surface. This trail work, including grading, would be in areas shown as planned trails in Figure 14.

#### 5. GLADED TERRAIN

While not detailed in this document, it is anticipated that some tree thinning would occur in some selected stands of trees in between and on the sides of the planned developed terrain. Nordic Valley would work with its Forest Service counterparts to assemble a thinning plan that is responsive to both the resort's operational/recreational needs, as well as to any forest health objectives that may be important to the UWCNF. The thinning plan would address elements such as, but not limited to: preservation of selected species, size selection, tree mortality (i.e., targeting dead/dying trees), percent removal, and habitat characteristics.

## 6. TERRAIN PARKS

Terrain parks will be constructed on an operation basis to offer skiers and riders of all abilities the chance to improve their freestyle skills. The resort will create terrain park features out of snow as conditions warrant, in locations that are appropriate based on the varying and evolving needs of resort operations and park users.

## D. CAPACITY ANALYSIS UPGRADE

### 1. COMFORTABLE CARRYING CAPACITY

The calculation of Nordic Valley's CCC under the Upgrade Plan is an important measure by which the resort's overall balance of facilities can be evaluated and planned. As discussed, CCC is a measure of the daily capacity of the resort and as such represents the planning parameter around which the rest of the resort components should be balanced. The fully built-out CCC of the resort is projected to be around 11,000 people. This capacity is very much in keeping with resorts of this size; larger than a resort with a single base area (such as Snowbasin Resort), but smaller than a resort with two full base areas (such as Park City Mountain Resort). In the case of Nordic Valley, the North Ogden side base area is only a partial capacity base area, as it has full capacity parking and access lift capacity, but would not have ski school teaching terrain, large-capacity restaurants, and other traditional base area services.

Refer to Appendix E for details about the calculated CCC of 11,380 guests.

### 2. DENSITY ANALYSIS

As discussed in Chapter 3, an important aspect of resort design is the balancing of uphill lift capacity with downhill trail capacity. Trail densities are derived by contrasting the uphill, at-one-time capacity of each lift system (CCC) with the trail acreage associated with 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 the following table.

As can be seen in Table E-3 in Appendix E, there is a close balance of uphill and downhill capacities, as demonstrated by the density indexes that are at or close to 100%—indicating a calculated balance. Since no lifts are showing a density index of over 100%, that indicates that, while individual runs (particularly egress routes at the end of the day) may experience high densities, on average trail crowding would not be a problem.

Refer to Appendix E for details about the calculations for the density analysis.

### 3. LIFT AND TERRAIN NETWORK EFFICIENCY ANALYSIS

As discussed in Chapter 3, overall resort efficiency is becoming an increasingly important factor in the industry, relating not only to energy/operational efficiency, but also to efficiency of the design and layout of the resort. The idea behind resort design efficiency is to have a well-balanced lift and trail network (i.e., the uphill lift capacity balances with the downhill trail capacity that it serves) that is efficiently served by the fewest number of lifts possible, while maintaining desired CCC rates, circulation routes, and service to the full spectrum of ability levels and types.

**a) Lift Network Efficiency**

As discussed in Chapter 3, this MDP analyzes Lift Network Efficiency by calculating the average CCC per lift. Optimally, and in general, the average CCC per lift would likely be close to 1,000. Industry-wide, the average CCC per lift is approximately 650. The existing average CCC per lift at Nordic Valley is well below average at 320. As discussed, this is related to the number of lifts operated as well as the generally low hourly capacities of the lifts. However, the expanded resort is designed with operation efficiency in mind, and as a result, the average CCC per aerial lift is increased to 755. This very large 136% increase would put Nordic Valley well above the national average and fairly close to an ideal number.

**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. When considering snowmaking, grooming, patrol, etc., the financial and environmental cost of maintaining more developed terrain than is necessary is quite high. From this standpoint, the most efficient scenario is to have a quantity of terrain that closely meets the target density requirements. As discussed in Chapter 3, an effective way to review terrain efficiency is to interpret the density analysis. Since the overall "Density Index" figure of the upgraded resort is 79%, this indicates a good balance of developed terrain and overall capacity, meaning that the resort would function efficiently from an operational perspective.

## **E. UPGRADE PLAN GUEST SERVICES FACILITIES & SPACE USE ANALYSIS**

### **1. GUEST SERVICES LOCATIONS**

The overall vision of guest services at the expanded Nordic Valley includes two full-service base area portals (one on the North Ogden side and one on the Eden side) and three on-mountain facilities. Also, the North Ogden divide location would provide an additional access point to the resort, with limited parking and minimal guest services (e.g. a ticket window and restrooms).

The architectural design of planned new and expanded structures would be subject to Forest Service review and approval during future project proposal (e.g., NEPA). Nordic Valley plans to develop a consistent architectural design theme for all of the planned facility improvements. All guest services will be designed to meet the Americans with Disabilities Act (ADA) and Forest Service's Built Environment Image Guide (BEIG) requirements to ensure appropriate design guidelines for both landscape architecture and built architecture are followed.

**a) North Ogden Side Base Area**

This base area will act primarily as a staging portal to the resort. It is anticipated that approximately half of the resort's guests will stage through this portal. This means that a significant amount of parking will need to be developed in the city quarry property. This portal would have a large stock of equipment rental, locker space, etc., but is not anticipated to have teaching terrain, large lunchtime restaurants, or other such facilities. This is because it is anticipated that guests staging through this portal will ride the gondola up in the morning, and

then not return until the end of day; all lunch and other guest service space use would occur on the mountain.

## **b) Eden Side Base Area**

This base area would be a full-service base area, with all recommended programming and guest services. The majority of ski school and teaching would stage out of this base area, as it is adjacent to the teaching terrain at the existing Nordic Valley. This base area would have a large amount of food service options and restaurant seats, as it is anticipated that a large portion of the daily guests would eat lunch in this location.

## **c) On-Mountain Facilities**

Three on-mountain facilities are planned.

1. *The Summit Restaurant.* This facility would be at the top of the mountain and would be adjacent, or architecturally incorporated into, the gondola top terminals. There would be covered, indoor, access from the gondolas into the facility. This facility would function both as a facility for skiers, as well as a year-round dining location for non-skiers. It is anticipated that this facility would serve breakfast, lunch, and dinners, and would provide event space. This facility would provide a higher-quality dining experience, perhaps with a fine-dining section as well. Some ski school functionality would also be staged out of the summit facility.
2. *The East Side Restaurant.* This facility would be the largest on-mountain dining facility. It would be open for lunch only, and only during the winter. This would be a mid-range restaurant, with more traditional ski area food offerings and a more cafeteria style atmosphere. This facility would be designed to have a high turn-over rate and would efficiently feed lunches to thousands of skiers. This style of on-mountain restaurant is an absolute necessity at large ski resorts, and examples of similar style restaurants can be found throughout the industry.
3. *The West Side Restaurant.* This facility would be the smallest on-mountain restaurant, as it would effectively be serving only guests skiing in the Coldwater Canyon pod. This would also be a winter, lunch only facility. Being the most distant restaurant and most difficult to service, it is likely that this restaurant would serve simpler dishes, which are better catered to the advanced level skiers who would be using this restaurant (these skiers tend to spend less time eating than lower ability level skiers).

## **2. SPACE USE ANALYSIS**

The following section provides details about each planned guest service facility, shows the intended uses of the proposed guest service spaces, and provides recommended ranges for such space based on industry averages for space use by service function. Sufficient guest service space should be provided to accommodate the Upgrade Plan CCC of 11,380 guests per day.

Table 4-3 shows overall resort space use sizing and programming recommendations (see Appendix E for recommendations by each individual area).

**Table 4-3. Space Use Analysis-Resort Total-Upgrade Plan**

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	165	2,560	3,120
Public Lockers	-	7,680	9,380
Rentals/Repair	1,077	18,200	20,480
Retail Sales	149	5,380	6,580
Bar/lounge	-	8,060	9,860
Adult Ski School	300	4,100	5,010
Kid's Ski School	400	8,190	10,010
Restaurant Seating	518	37,640	46,010
Kitchen/Scramble	350	21,510	26,280
Rest rooms	100	10,750	13,150
Ski Patrol	420	4,310	5,250
Administration	500	5,380	6,580
Employee Lockers/Lounge	120	2,160	2,620
Storage	-	6,110	9,040
Circulation/Waste	994	24,470	36,140
<b>TOTAL SQUARE FEET</b>	<b>5,093</b>	<b>166,500</b>	<b>209,510</b>

### 3. FOOD SERVICE SEATING

Food service seating would be provided in seating at both base areas, as well as the three planned on-mountain facilities.

The following table summarizes the seating requirements at, based on a logical distribution of the CCC to each service building/location. Seating and restaurant space recommendations are directly related to the lunchtime capacity. The lunchtime capacity is determined by the distribution of each lift pod's CCC. It is assumed that guests would prefer to dine at the facility closest to the area they are using. To allow for this convenience, it is important to provide restaurant seating to accommodate the lunchtime capacity requirement of the area.

Restaurant seating should be supplied per the recommendations in the above table. As shown, a total of 3,224 seats would be required at full buildout of the upgrade plan.

**Table 4-4. Recommended Restaurant Seating–Upgrade Plan**

	Eden Base Area	North Ogden Base Area	Top of Mountain	East Side of Ridge	West Side of Ridge	Total Resort
Lunchtime Capacity (CCC + 5% non-skiing guests)	4,397	327	1,905	3,800	1,520	11,949
Average Seat Turnover	3.5	3.5	3.5	4	4	
Existing Seats	148					148
Required Seats	1,256	94	544	950	380	3,224
Difference	-1,108	-94	-544	-950	-380	-3,076
Existing seating capacity	4,397	327	1,905	3,800	1,520	11,949

### F. PARKING AND TRANSPORTATION UPGRADE

The expansion of the lift and terrain network, resulting in an increase of CCC to 11,380 guests, would drastically increase the visitation of the resort. Nordic Valley’s existing parking capacity is approximately 404 vehicles and 1,090 people, assuming an Average Vehicle Occupancy (AVO) of 2.7. Given the future CCC, there is a large parking deficit both in terms of spaces and available parking space. Nordic Valley currently has approximately 3.5 acres of parking, with the potential to expand to six acres at the Eden side base area. The North Ogden side base area has plentiful of undeveloped land that could be developed for parking or other facilities, with the city quarry site encompassing over 20 acres.

Resort access and traffic flow, including public transit and other transportation options, at Nordic Valley is assumed to be enhanced over the significant period of time that would be required to build out the Upgrade Plan. This expansion would be based on public need and market demand. It is assumed that 35% of overall Nordic Valley guests would arrive by private shuttle, ride-share, drop off, or through public transit and would therefore be utilizing this expanded resort access and public transit. Under the proposed development, there would be two base areas for Nordic Valley: one in Eden and one in North Ogden. Both base areas would offer access to all of Nordic Valley’s terrain. It is assumed that nearby hotels (both existing and

possible future) would provide shuttle services, as happens at all destination resorts. It is similarly assumed that some manner of public transportation would be developed, at either or both bases, as demand arises.

It is also assumed that, at full build-out, 15% of guests would be within walking distance of the base area (assumed to be a half mile) or at ski-in/ski-out locations. This is simply made as a logical assumption—that when the resort is fully built out, that there would be lodging developed concurrently on at least some neighboring properties. Again, this is based simply on looking at comparable resorts, and realizing that hotel brands and other possible developments would likely occur in the presence of a successful mountain resort.

It is therefore assumed that the remaining approximately 50% of guests at Nordic Valley would be drivers that would require parking. This expanded parking capacity would be developed on the six acres of available parking in the Eden side base area – on two levels of parking if necessary. On the North Ogden side base area, up to 12 acres of the 20 available acres could be used to develop parking. Nordic Valley plans to expand their parking capacity in line with the expansion of the lift and terrain capacity. See the table below for details on the parking plan and recommendations.

**Table 4-5. Recommended Parking at Staging Portals–Upgrade Plan**

	Multiplier	Eden Base Area	North Ogden Base Area	Total Resort
CCC + other guests				11,949
Percent arriving at portal		50%	50%	
Number arriving at portal		5,975	5,975	11,949
Percent arriving via shuttle/public transportation/rideshare/dropoff	35%	2,091	2,091	4,182
Percent within walking distance	15%	896	896	1,792
<b>Net number requiring parking</b>		<b>2,987</b>	<b>2,987</b>	<b>5,975</b>
Required car parking spaces	2.70	1,106	1,106	2,213
Required employee car parking spaces		239	239	478
Total required spaces		1,345	1,345	2,691
Existing parking spaces		404		404
Planned additional spaces		1,020	1,400	2,420
surplus/deficit		79	55	-2,287
Existing parking capacity (guests)		3,845	3,780	7,625

## **G. RESORT OPERATIONS UPGRADE**

### **1. INFRASTRUCTURE AND UTILITIES**

Electricity will need to be extended to the new guest service facilities in both base areas, the on-mountain guest service facilities, the new lifts, and the new snowmaking equipment. The electricity will be provided by Rocky Mountain Power. There is not currently enough power available on the Eden side to supply the needs of the resort. A new sub-station would need to be built, with a distribution network of buried power lines throughout the resort. The highest needs would be along the ridge, as the lift drives would be located at the top terminals of the lifts. The new restaurants and other facilities will require 1.2 Mwh, the lifts will require 7.3 Mwh, and the snowmaking will require 5.6 Mwh for cumulative total additional annual energy requirement of 14 Mwh. Peak instantaneous demand could reach 10 Mwh.

### **2. CULINARY WATER AND WASTE WATER TREATMENT**

Culinary water would be provided by the existing Nordic Mountain Water, Inc company. Holding tanks would need to be constructed to meet the need.

Ogden Valley wastewater plan is needed. The large number of septic systems in the Valley is changing the composition of the water and causing some issues. Nordic Valley could participate in these conversations and be part of the solution. There is not currently a wastewater treatment facility of sufficient size in the Ogden Valley to handle the additional demand. An agreement would need to be reached with either an existing wastewater company/district, or a new one would be formed. Wastewater would be transported down the mountain in pipes, with pressure reducing systems and grinders.

Using various efficiency techniques available (e.g., low flow toilets, etc.), it is thought that water and wastewater use can be held to an average of seven gallons per person per day. For the CCC of 11,380, this would equate to just under 80,000 gallons per day of use.

### **3. SNOWMAKING**

Given the critical nature of snowmaking in the ski industry, Nordic Valley plans to invest in a state-of-the-art, efficient snowmaking system. The existing and proposed snowmaking system is shown in Figure 15. Existing snowmaking coverage is currently on 31 acres. The upgrade plan would add between approximately 450 acres and 640 acres. Approximately 450 acres would be required to ensure a quality, consistent operation. The additional approximately 190 acres would be a beneficial addition, but are not considered to be critical for operation. These two categories are displayed in Figure 15 and detailed in the table below.

Note that the 350,000 gallons per acre is the average amount of water used per acre of snowmaking in the Rocky Mountain region and holds true for neighboring Utah resorts.

**Table 4-6. Snowmaking Coverage–Upgrade Plan**

	<b>Required Coverage</b>	<b>Additional Coverage</b>	<b>Total Coverage</b>
Total Coverage Area	445.0	191	636
Gallons per Acre	350,000	350,000	350,000
Total Water Required/Year	155,750,000	66,850,000	222,600,000
Total Water (acre-feet)	478	205	683
Percent Consumption	28%	28%	28%
Water Consumed (acre-feet)	134	57	191

### a) Water Sources

Water rights and water use are a complicated and contentious issue throughout Utah and the western United States. The Ogden Valley and North Ogden areas are no exception. The issue of water rights and water use was raised a number of times during public outreach (refer to Chapter 5—Public Input) with questions directed toward the reliability, availability, source, and quantity of water required to construct the expansion and the potential for impacting water users in the surrounding communities. Added to this concern is the fact that groundwater wells in the Ogden Valley do not generally produce high volumes of water and the water table varies with changing hydrologic conditions and water storage in the Ogden Valley.

The most likely source of water for Nordic Valley snowmaking would be through an exchange water right from Pineview Reservoir. This water right would be obtained by entering into an agreement with Weber Basin Water Conservancy District. Details of the agreement would be determined based on the amount of skiing terrain approved for development. Once an agreement was reached, an exchange water right application would be filed with the Utah Division of Water Rights. In conjunction with the agreement, a series of studies would be completed to determine if water could be accessed within the resort boundaries (either through the development of groundwater wells and/or collection of surface water) without impacting downstream water users. Depending on the outcome of the studies, water would either be developed onsite or piped directly from Pineview Reservoir to the southern edge of the resort where it would then be piped across the resort. Piping water directly from Pineview Reservoir would be a clean exchange process from the standpoint of downstream water users, as it would represent a direct water exchange with Pineview Reservoir water. Special attention will be paid to water right holders governed under the Ogden and Weber River Decrees, as these water allocations are more senior water rights compared to an exchange water right.<sup>12</sup>

<sup>12</sup> Utah Division of Water Rights, 2006. Weber River Decrees. Accessed October 1, 2018. Revised May 24, 2006. <https://waterrights.utah.gov/adidinfo/decrinfo/weber.htm>

Several additional factors should be noted here:

1. The entire project is located within the same county (Weber) and watershed (Weber River). From a water rights standpoint, there are no additional complications with regard to water transfer between watersheds. For example, if water was used from Pineview Reservoir on the slopes facing North Ogden, most of this water would ultimately flow back to the Weber River.
2. Snowmaking is not considered to be 100% consumptive (i.e., the majority of the water used for snowmaking is returned to the watershed through runoff). There are two sources of water loss: first, through some loss due to evaporation during the snowmaking process, and second, through further evaporation and sublimation loss while the snow resides in the natural snowpack. Other factors that can influence consumptive loss percentage are soil type, temperature, aspect, and wind. Numerous studies have been conducted over the years at mountain resorts to determine the percent loss through these processes.<sup>13</sup> Across the Rocky Mountain region, it is generally accepted that around 80% of the water returns to streams, lakes or rivers, while around 20% is lost to evaporation and sublimation).<sup>14</sup> Based on other consumptive losses analyzed in the local region, the consumptive loss factor for the Nordic Valley project is anticipated to be 28% for modeling purposes, although the final number will be set by the Utah Division of Water Rights.<sup>15</sup>
3. If snowmaking is constructed, implemented and maintained properly, snowmaking can be a beneficial influence to downstream water rights holders and water users. This is primarily through two factors:
  - Snowmaking can be a legitimate and significant source of water storage. Since snowmaking is denser than natural snow (i.e., it contains a higher percent water content), it takes longer to melt and stays on the mountain longer into the spring and summer than natural snow.
  - Snowmaking can recharge surface and groundwater sources at higher elevations in the watershed by pumping water on to the mountain, compared to storing available water in the basin at Pineview Reservoir.

These factors combine to mean that downstream water rights holders and water users could have both a greater quantity and a longer duration of snowmelt than they would without the presence of snowmaking in the watershed.

---

<sup>13</sup> Vanham, D., Fleischhacker, E. and Rauch, W.; Impact of snowmaking on alpine water resources management under present and climate change conditions. *Water Sci Technol* 1 May 2009; 59 (9): 1793–1801. doi: <https://doi.org/10.2166/wst.2009.211>

Hirsch, R. 1988. The Hydrologic Impacts From the Diversion of Winter Flows of Cordova Creek for Snowmaking Purposes. Available at <http://www.ose.state.nm.us/Pub/HydrologyReports/TDH-88-6.pdf>. Last Accessed 10/5/2018 .

Rodríguez, Sylvia. "Impact of the Ski Industry on the Rio Hondo Watershed." *Annals of Tourism Research* 14, no. 1 (1987): 88–103. [https://doi.org/10.1016/0160-7383\(87\)90049-1](https://doi.org/10.1016/0160-7383(87)90049-1).

<sup>14</sup> Colorado Ski Country USA and Wright Water Engineers. 1986. A Final Report on the Colorado Ski Country USA Water Management Research Project.

<sup>15</sup> Utah Division of Water Rights, 2018. Water Use Information for Water Right Applications. Accessed October 1, 2018. Revised April 17, 2018. <https://www.waterrights.utah.gov/wiinfo/policy/wateruse.asp>

In the long term, other water sources could be developed. Once such source of water that has been successfully implemented at resorts across the west is the use of reclaimed water for snowmaking. The process converts fully treated wastewater into water that could be used for other purposes; in this case, snowmaking. Numerous communities in the west are concluding that the use of snowmaking is a good solution for both a tertiary treatment technique (i.e., final cleaning process to improve wastewater quality via natural filtration/ultraviolet exposure) and a method of dealing with increased outflow from treatment systems (as a result of increasing development and population). This is not currently being considered for Nordic Valley, as there are no adjacent water treatment facilities to produce the treated water, but if this situation changes in the future, then this strategy could be considered at that time.

The details of the Nordic Valley water sources for the snowmaking system will be analyzed in detail during the NEPA process. Environmental studies for NEPA, as well as for the exchange water right agreement, would be completed prior to approval or construction of the project.

#### **4. CONSTRUCTION AND MAINTENANCE ACCESS ROUTES**

As with all aspects of the proposed Nordic Valley expansion, the construction and maintenance access routes were strategically planned to minimized impact to resources to the extent possible, while also taking into account the realistic needs of resort operations during both construction and typical annual maintenance at mountain resorts.

Access to the on-mountain facilities and lifts, for both construction and maintenance, would be almost entirely on the planned ski terrain network. Figure 16 illustrates where the mountain access routes are located. Almost all lifts and facilities can be accessed on the planned ski runs. The only places not accessible on planned ski runs are to the top terminals of Lifts E, I, and L. In these cases, limited access construction and maintenance routes would be constructed. A number of techniques will be deployed to minimize disturbance related to construction and maintenance of facilities on the mountain, including but not limited to, using helicopters to stage materials, using snowcats for over-the-snow transportation, utilizing low grade ski trails and using vehicles less than 50-inch wide.

Planning efforts have also taken into account applicable Forest Service policy and direction, to the extent possible. These Forest Service policy and directions are outlined in Chapter 1, Section F and Appendix B. Given that the proposed expansion is currently characterized within the Recreation Opportunity Spectrum as "semi-primitive non-motorized," within management area prescription 3.1W – Watershed Emphasis and within the Lewis Peak Roadless Area, a Forest Plan amendment would be required to allow use of snowcats within the area and to allow road construction and new recreation facility development.<sup>16</sup> Throughout the NEPA process, Nordic Valley would work with the Forest Service to minimize impacts and develop solutions to the construction and maintenance access challenges.

---

<sup>16</sup> USDA Forest Service. 2003. Revised Forest Plan, Wasatch-Cache National Forest.

## **5. GROOMING**

New beginner, novice and intermediate terrain at Nordic Valley will likely be groomed on a nightly basis along with about half of the advanced and expert developed terrain on a rotating basis. As a result, it is assumed that approximately 650 acres of terrain could be groomed nightly. Assuming each cat can groom 40 acres per night, Nordic Valley will require a total of 16 snowcats—mostly mainline groomers, but (due to the steep terrain) some winch cats and some park cats.

## **6. NIGHT SKIING**

Nordic Valley plans to offer night skiing. The extent of this operation is not currently known but would likely be limited to the east side of the resort. The coverage could extend up to the ridge, allowing night skiing off the gondola, but is more likely to be limited to lower reaches, perhaps off Lift A.

## **7. MAINTENANCE FACILITIES**

The Upgrade Plan includes two maintenance buildings, one at each base area. Per the requirements for mountain resort maintenance facilities, the facilities would be adjacent to a year round paved road on one side and snow on the other side. The facilities likely would be placed on private property. Given the requirement of around 1,200 square feet of space per cat bay, it is likely that around 12,000 total square feet of maintenance buildings would be constructed, as it is not necessary to have a bay for each snowcat.

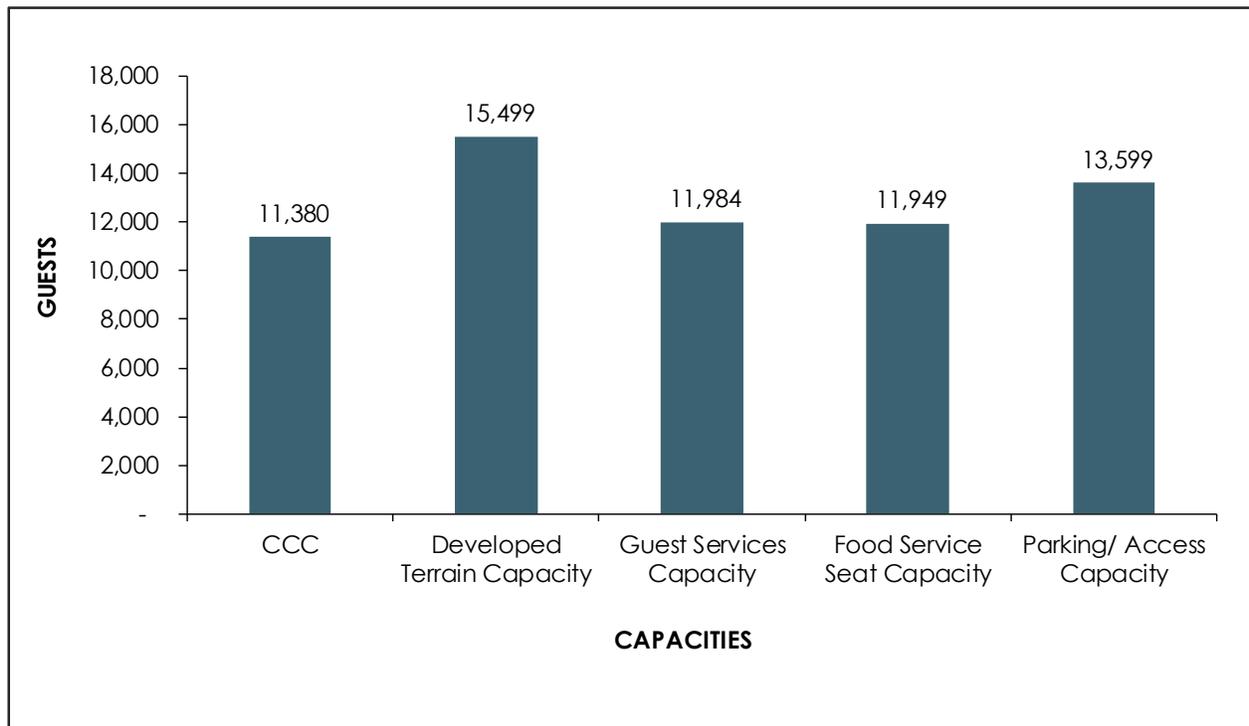
## **8. SKI PATROL/FIRST AID**

The Upgrade Plan expands the ski patrol facilities in concert with the larger ski safety requirements associated with an expanded CCC. Various ski patrol duty stations will be located across the mountain with at least one station per pod and a larger patrol headquarters outpost located at the top of the mountain. See Figure 14 for required locations.

## H. UPGRADE PLAN RESORT CAPACITY BALANCE AND LIMITING FACTORS

As Char 4-2 shows, the expanded Nordic Valley would be a very well-balanced resort, with all components close in capacities and no significant surpluses or deficiencies. As full build out of the Upgrade Plan occurs, planning efforts will have to scale each of the capacities as needed.

**Chart 4-2. Resort Capacity–Upgrade Plan**



As previously discussed, an aspect of the overall Upgrade Plan that was carefully considered is the construction and maintenance access. Development of access routes for construction and maintenance would be necessary in order to properly maintain the lift network and facilities. Access would range from construction trucks to small vehicles (less than 50 inches wide) to small ATV. Tree clearing and land grading would be required for the construction of facilities, terrain and lift terminals. Various timber removal and staging material techniques could be deployed to minimize impacts to resources. Throughout the NEPA process, Nordic Valley would work with the Forest Service to minimize impacts and develop solutions to the construction and maintenance access challenges and reduce impacts resources, to the extent possible. The construction that would occur on UWCNF land as a result of the resort expansion would follow all applicable construction BMPs, as well as relevant UWCNF Forest Plan Standards and Guidelines.

## **I. MULTI-SEASON RECREATION OPPORTUNITIES UPGRADE**

Multi-season and alternative uses at ski areas have been increasing in recent years. The increase has been driven by both new technologies in summer recreation equipment, as well as the growing numbers of people seeking recreation activities in more managed settings.

The Ski Area Recreational Opportunity Enhancement Act (SAROE) has provided an opportunity for the Forest Service to authorize additional seasonal and year-round recreation activities and associated facilities at ski areas on NFS lands. With that guidance, Nordic Valley has identified multi-season and alternative activity opportunities to increase the available recreation activities to NFS guests. These considerations for multi-season recreation were considered throughout the planning process to efficiently and effectively plan for recreation to occur throughout the year.

Nordic Valley has proposed an upgraded multi-season and alternative activity plan commensurate with current market demand for forest-based recreation. Details on planned multi-season activities are presented below, but specific project locations and associated maps for activities located within NFS lands will be developed during site-specific analysis as part of the NEPA process. These multi-season and alternative activity projects are anticipated to be implemented in accordance with the setting and desired experience of each zone, as described below and in Appendix B.

The proposed activities and summer zones are illustrated on Figures 17 and 18.

### **1. MULTI-SEASON GUEST EXPERIENCE UPGRADE**

The Upgrade Plan includes a variety of upgrades to the Nordic Valley summer and multi-season experience. Currently, Nordic Valley offers some summer activities (Slip N Slide and mountain biking trails), but offerings are fairly limited and not designed to accommodate a high volume of guests. The multi-season guest experience upgrade will transition Nordic Valley to a year-round local and regional destination resort. Guests would travel to Nordic Valley from along the Wasatch Front to experience the activities that have been curated within the National Forest.

Nordic Valley will develop an additional entrance portal to these activities on the western side of the mountain ridge in North Ogden City. This portal would be within an urban setting but would have a mountain feel to it to give guests an introduction to the nature-oriented aspect of the activities Nordic Valley provides. The existing Eden portal will be expanded but will retain its rustic, rural feel to cater to guests who prefer a more outdoor experience. Both portals will offer designed and structured activities ranging from challenge courses to disc golf to yard games.

These portals offer guests the opportunity to transition to more and more rural settings. Guests can take the gondolas available in both base areas to the top of the mountain, which offers a natural feel set among the peaks of the ridge to the north and south. From here, guests can hike or bike along trails and reach more and more remote settings for those that want to experience the beauty and solitude that the peaks of the UWCNF can offer.

The proximity of Nordic Valley to the Wasatch Front will ensure connectivity throughout the year and will provide visitors who wish to escape to the beauty of the mountains with the ability to do so year-round.

The trails and activities listed below will be designed using accessibility guidelines, where possible.<sup>17</sup> Trail criteria will be incorporated into trail layout such as trail grade, surface, minimum trail width and trail obstacles on certain trails as identified as accessible trails. A boardwalk or accessible trail as well as other accessible activities will be constructed at the Top of Mountain Activity Center. Activities will similarly be located and construction will be done with accessibility in mind whenever possible.

### **a) North Ogden Activity Zone**

The North Ogden Base Area would be developed to be less nature-oriented and rustic than the Eden portal. The gondola in this base area would provide access to the more secluded setting of the Top of Mountain Activity Zone and the outdoor-oriented Eden Activity Zone.

### **Challenge Course/Aerial Adventure Course**

An aerial adventure course is a series of activities usually constructed between trees or platforms and can either be a low or high course with varying levels of difficulty. The course is comprised of many different elements, including ladders, nets, swings, bridges and zip lines. It is typical to combine a number of courses of varying length and difficulty in the aerial adventure course area to appeal to a broad audience and provide something fun and challenging for everyone.

Course participants wear harnesses during their time on the course and are always secured via safety lines. Groups may be accompanied through the course by a trained guide or may be self-guided. In either case, the aerial adventure course experience is always initiated with some level of training or practice on a demonstration course, to ensure that participants are familiar with their safety equipment and are able to navigate the various elements of the course.

The location, number and sequencing of elements will be determined by future design, according to specific site conditions and the desired degree of difficulty. Due to the temperate nature of Nordic Valley's weather, the aerial adventure course may be operated year-round.

### **Concert and Event Space**

This would provide a space for community programming, like summer camps, retreats, and social events. Possible events include movies on the mountain, trail races, and kids programming like strider races and educational opportunities. The space would be more adventure-oriented than a formal event space.

### **Child Activities**

The kid-centric activities would be designed for younger children and would include a splash pad and a tree fort. These items, along with the amphitheater and event space, would be

---

<sup>17</sup> Forest Service Trail Accessibility Guidelines. 2015.  
<https://www.fs.fed.us/t-d/pubs/pdfpubs/pdf15232812/pdf15232812dpi300.pdf>

designed to be community play spaces to integrate Nordic Valley with the Wasatch Front population by providing an area where families can come and enjoy themselves year round.

## **b) Eden Activity Zone**

The Eden Base Area would provide the opportunity for visitors to explore an area with a more natural, secluded feel while still retaining the amenities of a destination resort. The gondola would serve as the connection to the two other hubs within the resort.

### **Previous Activities**

The previous activities within the Eden Activity Zone—including a Slip N Slide, disc golf, bungy trampoline, yard games, and Nordic Nights—would be retained and potentially expanded. These activities would serve as hub for the activity zone and provide families and visitors from the Wasatch Front with a variety of options to recreate while being introduced to the UWCNF.

### **Mountain Bike Park**

The area would also include a mountain bike park, including a pump track and skills park, for visitors to develop their skills and build confidence to ride the trails. This zone would serve as the hub for the mountain biking and hiking opportunities within Nordic Valley. From here, guests would be able to access the entire trail network, either through use of the lift or through their own power.

## **c) Top of Mountain Activity Zone**

The Top of the Mountain Activity Zone would include summer tubing, a climbing wall, a challenge course, mini starter zipline, and a bungy trampoline. It would also be the jumping off point for a variety of hiking and biking trails along the ridgeline as well as the rest of the UWCNF.

### **Summer Tubing**

Summer tubing utilizes the same tube equipment used for winter tubing, while utilizing a synthetic surface to allow for summer sliding. The tubing provides another activity for guests to enjoy at Nordic Valley, encouraging summer guests to stay longer at the resort.

### **Climbing Wall**

A climbing wall is proposed in the Top of Mountain Activity Zone. A climbing wall is an artificially constructed wall with interchangeable/repositionable holds for hands and feet. In addition to the textured surface and holds, the wall may contain surface structures such as indentions (incuts) and protrusions (bulges) or take the form of an overhang or crack. The wall typically has places to attach belay ropes or auto-belay devices at the top. Climbing walls have become popular over recent years and has value as both a recreational activity and as an educational/training tool. Climbing walls are often used in conjunction with a challenge course.

### **Challenge Course**

Another challenge course will be developed at the summit of the mountain and will include a mini starter zipline to introduce participants to ziplining. A larger zipline will be available from the summit down to the Eden Activity Zone.

## **Bungy Trampoline**

A bungy trampoline, similar to the one in the Eden Base Area, will be located at the Top of Mountain Activity Zone to add to the adventure offerings at the summit.

### **d) On-Mountain Activity Zone**

#### **Coaster**

A mountain coaster is planned to start adjacent to the Top of Mountain Activity Zone and wind down the eastern side of the Upgrade Plan area. A return track would bring guests back to the summit area. The activity would be for all ability levels and would offer guests an intense, exciting experience combined with an opportunity to see large areas of forest and surrounding landscape.

#### **Hiking**

Hiking trails will be developed along the mountain slopes to provide guests with a way to explore the UWCNF under their own power. Hiking trails will vary by terrain and difficulty, ranging from easy and mostly flat terrain to more steep trails that could extend to the neighboring peaks.

#### **Mountain Biking**

Mountain biking has continually grown in popularity across the breadth of the outdoor recreation sector and have become a vital component to four-season operations at ski areas and to their continued relevance in the North American recreation market. Mountain biking systems are in high demand with guests of all fitness and ability levels, and part of this appeal is that the recreational environment at mountain resorts is generally more controlled than that of more primitive recreation areas, which may contain nothing more than a simple trailhead and kiosk.

This expectation of a more developed and controlled recreation experience carries over to Nordic Valley—trails are expected to be built and maintained to a higher standard than more primitive opportunities. Signage, maps, and wayfinding on summer trails at Nordic Valley are expected to be more on par with what is provided in the winter. The lifts at Nordic Valley make the trail system accessible to a wide-range of users who want to experience the spectacular mountain environment but may not be as familiar with travel in the alpine environment, and often expect more guidance through signage and staff. Additionally, Nordic Valley staff has an opportunity to engage with trail guests, recommend specific trails for their skill level, and provide programming and instruction. Each of these qualities makes Nordic Valley excellent for providing gateway recreational experiences—those that bring new people into mountain biking and provide an increased appreciation for nature and outdoor recreation. Each of these qualities also makes Nordic Valley an excellent venue for the most experienced of mountain bikers. To accommodate effective programming and this wide range of mountain bikers, the trail system at Nordic Valley must provide trails that span the full spectrum of ability level and learning progression—from beginner to expert trails and every step in between. This comprehensive trail system will allow Nordic Valley to host mountain bike events such as festivals and races.

The trail network on the mountain would take advantage of electric motorcycles/e-bikes on the trails. Trail rehabilitation of the Skyline trail would occur to improve the trail for existing use.

## **Zipline**

A zip line is a popular thrill ride found at ski areas and mountain resorts. Participants wear a harness which is suspended from an overhead cable and are propelled by gravity down an incline to a controlled finish area. This is proposed as a larger, stand-alone attraction spanning from the mountain summit down to the Eden Base Area. The zip line will be constructed and utilized in four separate segments. This zip line will also be designed to accommodate a greater volume of participants and will operate independently of the other activities.

## **User Conflict Mitigation**

There is currently a permitted motorized-use trail, the Skyline Trail, within the proposed expansion area. This trail will remain open. The trail is a motorized singletrack trail, one of the only ones in the UWCNF.

As there are users who currently use the area—including hikers, mountain bikers, and motorized vehicle operators—there is a potential for increased user conflict as the Nordic Valley develops its summer recreation activities on the mountain and the number of users increase accordingly. Conflict would be mitigated with clear signage directing each group and using ways to keep the user groups separate. This would include separate hiking, biking, and motorize use trails that potentially utilize different portions of the mountain.

## **2. MULTI-SEASON LIFT OPERATIONS**

Nordic Valley plans to operate the two gondolas and Lift A during the summer months. The gondolas and lift would provide access to on-mountain activities including the mountain biking, hiking, as well as all of the activities offered at the Top of Mountain Activity Zone and the restaurant. It is anticipated that the restaurant and surrounding area would be used for special events throughout the year.

## **3. MULTI-SEASON GUEST SERVICE AND FACILITIES OPERATIONS**

Currently, the Eden base area operates during the summer month to support the slip and slide, trail users, and special event guests. This base area would be expanded, as previously discussed in Section E, to include restaurant services, retail and rental sales and ticket offices. The Eden base area would continue to be the major summer hub of activities and starting point for the majority of activities.

The North Ogden base area would be a summer portal to the mountain. Basic services, such as ticket sales and rental would be needed at this portal in the summer months. Additional services, such as restaurants, retail sales and other such services may be developed overtime in the surrounding area or supported by base area facilities.

The Top of the Mountain portal would be the main launching point for several activities on the mountain during the summer months. These activities include challenge course, summer tubing, climbing wall, zipline and much of the hiking and biking. As a result, there would be a need to develop a building that would house all of the guest services required to operate these activities. These services would include food and beverage provision, restrooms, ticketing and

sales, indoor and outdoor seating, summer safety patrol, and an information kiosk. These services would all be housed in the Top of Mountain building.

#### 4. SUMMER “ACTIVITY ZONES”

The Nordic Valley area is characterized by diverse settings, from developed and modified areas at the existing base area to remote and more primitive areas. The settings that exist within the Nordic Valley area mirror what a guest could see and experience in different locations across the Uinta-Wasatch-Cache National Forest ranging from dense forested stands, to developed recreation areas, to mountain meadows.

Following the guidance provided in Forest Service Manual 2343.14—Additional Seasonal and Year-Round Recreation at Ski Areas, this MDP has established “zones to guide placement and design of additional seasonal or year-round recreation facilities, basing the zones on the existing natural setting and level of development to support snow sports.” Zone designations were carried out through a two-step planning process.

The first step was to identify distinct areas within the proposed Nordic Valley SUP through careful consideration of the area's setting and the proximity to snow sports infrastructure. Features such as watersheds, topography, vegetation structure, level of existing disturbance, and existing infrastructure were considered in establishing 16 distinct areas across the proposed SUP that are unique in their location and/or features.

The second step of the zone designation process was to evaluate each distinct area based on characteristics of setting and level of development. Similar to the Forest Service Recreation Opportunity Spectrum (ROS) (refer to Appendix B), this analysis utilized the following characteristics to evaluate distinct areas:

- ❖ **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

Distinct areas were evaluated by applying a score for each characteristic on a scale of 1 to 3, with 1 being the most disturbed and 3 being the least disturbed as shown in the following table. Characteristics were considered within the context of the planned Nordic Valley developed ski area. These scores were then summed to provide a total score, and a corresponding summer activity zone designation, for each distinct area.

**Table 4-7. Zone Characteristics—Upgrade Plan**

Zone Characteristics	Scores
<b>Access</b>	
Road Access within Area	1
Limited Road Access/Trails	2
No Road Access	3
<b>Remoteness</b>	
Proximate to Human Activity	1
Distant Sight of Human Activity within SUP	2
Out of Sight of Human Activity within SUP	3
<b>Naturalness</b>	
Heavily Disturbed by Ski Area Activity	1
Moderately Disturbed by Ski Area Activity	2
Undisturbed by Ski Area Activity	3
<b>Infrastructure</b>	
Adjacent to 2 or More Ski Area Infrastructure	1
Ski Area Infrastructure in Area	2
Out of Site of 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

Refer to Figure 18 for an illustration of the summer activity zone designations within the proposed Nordic Valley SUP.

*Note:* Because summer and multi-season uses are continually being developed and activities that do not currently exist may be popular within the next several years, a list of compatible activities is provided for each zone. The intent of the list of compatible activities is to allow for a certain amount of flexibility, since it is impossible to foresee exactly what new activities will be developed over this time. Nordic Valley 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.

Existing summer recreation and maintenance occurs throughout developed portions of the ski area; therefore, no area within the developed ski area is off limits to administrative access and maintenance.

The designated zones at Nordic Valley include:

**a) Zone 1**

**Setting**

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

- Access to the area is 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 lifts and buildings, are present.

Three distinct areas at Nordic Valley have been designated as Zone 1. These three areas are the base areas—where the access roads, parking, and other guest facilities are located—and the summit/location of the top terminal of the gondolas, as this is where human activity and development is most concentrated at the resort.

**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. Guests will encounter a higher degree of maintenance and operations facilities and activities within Zone 1. Within Zone 1, the concepts in the BEIG will be followed to ensure appropriate design guidelines for both landscape architecture and built architecture are followed. Zone 1 is surrounded by other private land beyond the base area and Zone 2 up the mountain slope. 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 will offer interpretive opportunities in a developed setting, with goals of enhancing guests' understanding of the natural environment as they prepare to venture into less-developed areas.

**Compatible Activities and Facilities**

Services and activities within a Zone 1 may include food and beverage operations, lodges, special event venues, shelter and emergency services, restroom facilities, landscaped areas, and other activities. At Nordic Valley, Zone 1 serves as the mountain's gateways, hubs and activity centers, from which guests will access surrounding activities and refuel between activities. A wide range of guest service facilities and recreational, interpretive, and educational offerings are appropriate for Zone 1.

## b) Zone 2

### Setting

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

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

Four interconnected area within the planned Nordic Valley SUP and existing ski area was designated as Zone 2. This includes the in the vicinity of the two base areas and around the top terminals of the gondolas.

### Desired Experiences

Most summer guests entering Zone 2 areas at Nordic Valley will do so from a Zone 1 area. 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 Nordic Valley, 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 these types of activities, Zone 2 should serve as a buffer between higher levels of development within Zone 1 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. Zone 2 will provide enhanced sightseeing opportunities when compared to Zone 1 as these areas are typically elevated and further within the mountain landscape. Activity offerings could include access to zip lines and canopy tours, guided hikes and interpretative opportunities, extended hiking trails, mountain biking trails, challenge/aerial adventure courses, and other natural resource and gravity-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. Thus, areas within Zone 2 serve as transitional zones, encouraging guest exploration into more natural portions of the National Forest in a setting that still feels comfortable for less-experienced Forest users. The setting of Zone 2 and the activities that occur within will offer sufficient challenge for first-time guests, and will prepare others to venture into the less developed areas of Zones 3 and 4.

## **c) Zone 3**

### **Setting**

The setting of Zone 3 contains areas of disturbance from ski trail and lift 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 lifts 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:

- Access to the area is 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, including lifts and buildings, are present.

Four independent areas within the Nordic Valley SUP are designated as Zone 3. These include areas to the north and toward the base areas.

### **Desired Experiences**

The majority of guests will access Zone 3 from the existing trails network. Once in Zone 3, guests will have a variety of opportunities to engage in their surroundings in a more natural and remote environment.

The desired experience in Zone 3 is to offer a diverse set of experiences for guests, which will promote the UWCNF as a recreationally, biologically, and geographically diverse landscape. Guests may enjoy interpretive signage that will provide education on their biological, cultural, and historical surroundings. Enhanced opportunities to experience the views of the UWCNF should be provided. Trail activities—including both hiking and mountain biking—and other recreational activities should be provided in forested settings. This will provide opportunities to learn about the importance of forest health and stewardship.

### **Compatible Activities and Facilities**

Activities could include mountain biking trails, scenic lift 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 lifts) exist to varying degrees within Zone 3, and potential seasonal and year-round facilities and activities will be consistent with the level of existing development for the ski area operation.

## d) Zone 4

### Setting

The setting of Zone 4 is more remote and provides a great degree of naturalness. Ski area development is limited and, where ski trails are present, larger tree islands and natural terrain 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, including a lift and small buildings, are present.

Four areas within the planned Nordic Valley SUP are designated as Zone 4.

It is primarily characterized by dense vegetation, challenging/isolated topography, minimal trail access, a lack of notable infrastructure/facilities, and predominately located on the furthest and most isolated extents of the area. Overall, natural characteristics and features dominant these areas beyond all ski area modifications.

### Desired Experiences

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

### Compatible Activities and Facilities

Activities will promote the surroundings and inform guests of similar environments throughout the National Forest. Activities include slower-moving actions to match the setting and character, which provide even greater opportunities for environmental education and exposure to unique environments. These activities include hiking trails with signage and interpretation and mountain biking trails.

Activities within Zone 4 will require minimal site modification to maintain the current level of naturalness. In this zone, the low density of guests is expected to maintain the feeling of remoteness.

## **e) Zone 5**

### **Setting**

The setting in Zone 5 is undisturbed by ski area activities. Zone 5 includes remote, dense forests and meadows and large, intact vegetation habitats. Very few people recreate in these areas of the operational 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 access is 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. One area within the planned Nordic Valley SUP is classified as Zone 5. This zone is located on the western portion of the land and intersects with Zones 3 and 4 as well as various USFS lands.

### **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.

---

# CHAPTER FIVE—PUBLIC INPUT

---

## A. INTRODUCTION

Since the outset of this project, Nordic Valley has expressed a strong interest in sharing information with the public and soliciting meaningful feedback. Stemming from their other successful resorts across the Mountain West, the Nordic Valley leaders understand the value of local support and open community dialog. Initial conversations with Forest Service personnel and elected officials emphasized public involvement during the mountain planning phase of the project, even prior to required public input efforts during possible National Environmental Policy Act (NEPA) review. This chapter summarizes the processes and outcomes of public involvement efforts for the proposed development. The efforts described below took place in spring and summer 2018.

## B. PUBLIC INPUT PROCESS

### 1. MEDIA AND PUBLIC OUTREACH EFFORTS

Early in the planning effort, Nordic Valley and Salt Lake City-based public relations firm Love Communications, met with stakeholders ranging from public officials to Ski Utah representatives. Love Communications, SE Group, and Nordic Valley developed a robust set of frequently asked questions (FAQs) so that information about the proposed development would be clear, consistent, and targeted to public questions and concerns. Love Communications and Nordic Valley then developed a robust public outreach campaign including a webpage, social media, and other outreach to ensure broad public engagement. During the mountain planning phase, there was consistent coverage from the Ogden Standard Examiner, Salt Lake Tribune, and ski industry media, among others.

### 2. PUBLIC MEETINGS

Five public meetings and panel discussions were held during the MDP effort, as follows. Panel representatives included Mountain Capital Partners, Ski Utah, SE Group, and the Forest Service. Maps and other general information about the proposed expansion were shared at the public meetings. Mountain Capital Partners introduced the project to the public at the beginning of each public meeting, with technical assistance from SE Group and Ski Utah. Forest Service personnel explained to the public that a formal proposal had not been submitted to nor accepted by the Forest Service, but that the agency was invited to listen and serve on the panels. Love Communications staff hosted the meetings and provided meeting support (media, notes, Q&A moderation, etc.)

- Tuesday, July 10<sup>th</sup>, 2018, 6:00 p.m. at the North Ogden City Council chambers, approximately 100 people attended.
- Thursday, July 12, 2018, 5:00 p.m. to 7:00 p.m. at the Barn at Nordic Valley in Eden. Approximately 70 people attended.
- Monday, August 13, 2018, 6:00 p.m. to 7:30 p.m. at the Ogden Eccles Conference Center in Ogden. Approximately 85 people attended.

- Tuesday, August 14, 2018, 6:00 p.m. to 7:30 p.m. at the North Ogden Library in North Ogden. Approximately 200 people attended; the attendance maximized the fire code at the library, so the meeting hosts promised to schedule additional meetings for those turned away.
- Wednesday, September 5, 2018, 7:00 p.m. to 8:30 p.m. at the Weber High School auditorium in North Ogden. Approximately 50 people attended.

### **3. WEBPAGE AND COMMENT FORM**

A website with general project information, a visual of the proposed development, and FAQs was developed and posted at <https://nordicvalleyproject.com/>. This website was “live” throughout the entire mountain planning phase. The website was also linked off the main Nordic Valley Resort website.

The project website also contained a web-based form that allowed for members of the public to submit questions or concerns. Love Communications team members responded to all incoming questions and comments during the mountain planning phase. As of August 20, 2018, approximately 120 public comments were submitted through the webpage. Though this was not a completely representative survey, of these 120 comments, around 45% expressed support for the project, around 30% expressed dissent with the project, and the remaining approximately 25% asked clarifying questions. A copy of the webpage, including the FAQs, can be found in Appendix C.

## **C. COMMENT THEMES AND RESPONSES**

General themes and concerns emerged in the public comments that were submitted online and shared in person at the three public meetings listed above. Common themes and concerns are summarized below, with the understanding that a complete environmental review and formal NEPA comment period(s) will follow. Related and additional topics with responses can be found in the FAQs in Appendix C. Comments and concerns have been grouped generally into six themes for clarity purposes, however some of the concerns naturally overlap into multiple areas.

### **1. WINTER SEASON RECREATION AND AMENITIES**

- Comparison of this development to others in Utah (with respect to elevation and snowfall)
- Comparison to Snowbasin – why this development is different or better
- Concerns about snowmaking capacity at low elevation and with limited water
- Questions about types and variety of ski runs (e.g., terrain, ability level)
- Questions about use of explosives to reduce avalanche risk
- Questions about tree clearing in Coldwater Canyon and western slopes

### **2. SUMMER SEASON RECREATION AND AMENITIES**

- Concerns about limitations on public use and access: hiking, hunting, horseback riding

- Questions about potential for gondola connections for recreational use (e.g., hiking)
- Questions about plans for golf course across from Nordic Valley

### **3. TRAFFIC, PARKING, AND ACCESS**

- Questions about widening access road in Coldwater Canyon
- Concerns about parking lot sizes and locations
- Concerns about impacts on local traffic
- Questions about widening E 2600 N
- Questions about seasons and conditions (e.g., wind) in which gondola could be used
- Questions about gondola base location
- Questions about the number of people that could be served by gondola
- Concerns about whether road construction is needed for gondola or other lift installation
- Questions about transit connections with airports, Utah Transit Authority, other towns, Snowbasin, and Powder Mountain

### **4. ENVIRONMENTAL IMPACTS**

- Questions about the acreage of terrain and the acreage of vegetation to be cleared
- Concern about removal of trees and possible runoff/erosion
- Concerns about trash and trespassing
- Concerns about impacts on wildlife (noise, habitat removal)
- Questions about availability of water and water rights (sources for snowmaking)
- Concerns about climate change, drought, and water availability
- Concerns about geologic faults in the area
- Concerns about impacts to Weber County North Fork Park dark sky designation
- Concerns about air quality impacts in the area

### **5. COMMUNITY AND SOCIOECONOMIC FACTORS**

- Concern that land that is now free/public would become a commodity to be paid for
- Questions about how much acreage would be public vs. privately owned and managed
- Questions about where funding for additional utilities, water, sewer, law enforcement, and roads would come from and plans for utilities, water and sewer
- Questions about whether local government is providing Nordic Valley a “tax break”
- Questions about public vs. private financing of the development
- Questions about future development of convention center, hotels, restaurants
- Suggestion for “locals discount” for tickets

- Questions about lift ticket prices – affordability vs. ability to be financially viable
- Concerns about changing area from bedroom community to resort community
- Questions about why North Ogden is a needed component of the project, why not keep it focused in Eden
- Concerns about potential property tax increases
- Questions about whether a land exchange is being considered

## **6. LOCAL GOVERNANCE AND FOREST SERVICE POLICIES**

- Suggestion for garnering local elected officials and town input, and “voting” on the project
- Questions about Nordic Valley annexation by North Ogden and potential public funding sources for the project
- Concerns about eminent domain being applied
- Questions about how this project fits into the Ogden Valley Plan and other land use policies
- Questions about the applicability of 2001 Roadless Area Conservation Rule, and exemptions therein for inventoried roadless areas
- Questions about timeline for the overall NEPA project and public involvement opportunities therein
- Questions about decision-making authorities within the Forest Service, namely who would make the final decision on the project
- Questions about future public meeting locations, announcements, and meeting format

## **D. SUMMARY OF PUBLIC INVOLVEMENT**

The overall goals of the public input process for this MDP were twofold: (1) ensure that Nordic Valley engaged a broad sector of the community in a meaningful way that provided information and allowed for feedback/responses, and (2) ensure that Nordic Valley became aware of the local public sentiments about the projects and key areas of concern. To that end, five public meetings were held in July, August, and September 2018, engaging approximately 500 members of the Eden, Ogden, and North Ogden communities. Numerous questions were posed by the public, either on-line or in person, and answers were provided either on the project website, in person at public open houses, or both. Nordic Valley continues to provide updated information to the public.

---

## CHAPTER SIX—GLOSSARY

---

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

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

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

**Adjusted Hourly Capacity:** The hourly capacity adjusted by reducing up-mountain access percentage and loading efficiency percentage.

**Average Grade:** The average slope gradient (in percent) of the terrain under the length of the lift, from top terminal to bottom terminal.

**Average Width:** The average width of the entire trail, from top to bottom. This is determined by calculations utilizing the given trail acreage and slope length.

**Base Area Portal:** The facilities and land at the base of a ski area where guests transfer from their car, accommodations or transportation system on to the lifts and ski slopes. Base area portals have parking lots, drop-off areas, skier services and lift access on to the mountain.

**Carrier Spacing:** The distance in feet between each guest carrier (chair).

**Climbing Wall:** An artificially constructed wall that includes grips for hands and feet which simulates the activity of outdoor rock climbing. Top ropes and belay systems are often used as safety systems.

**Comfortable Carrying Capacity (CCC):** Comfortable Carrying Capacity is a planning tool used to determine the optimum level of utilization that facilitates a pleasant recreational experience. This is a planning figure only and does not represent a regulatory cap on visitation. CCC is used to ensure that different aspects of a resort's facilities are designed to work in harmony, that capacities are equivalent across facilities, and sufficient to meet anticipated demand. CCC is based on factors such as vertical transport and trail capacities.

**Conveyor Lift:** A conveyor is a type of surface lift used to transport passengers in a standing position. Passengers slide onto the belt at the base of the conveyor and remain standing on the moving belt to the top, where they slide off the belt onto the snow. They are the easiest, least threatening form of lift, and as such are ideal for first-time beginner skiers or snowboarders, children's ski school, and tubing. Typically installed at snow level, the machinery and return belt are located below the surface. Options include covers or enclosures and raised sections. Maximum speed is 200 feet per minute and maximum (practical) length is around 1,000 feet.

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

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

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

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

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

**Disc Golf:** A recreational activity similar to the traditional game of golf, but instead of balls and clubs, players aim "flying discs" from designated tee areas into "baskets" (a pole with chains and a basket). The object is to complete a round with the fewest strokes or throws. The game can be played on a variety of surfaces and landscapes. The trees, shrubs, and terrain changes located in and around the fairways provide challenging obstacles for the golfer.

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

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

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

**Forest Plan:** A comprehensive management plan prepared under the National Forest Management Act of 1976 that provides standards and guidelines for management activities specific to each National Forest.

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

**Glades or Gladed Skiing Area:** Areas of trees stands that have been thinned specifically in varying degrees to improve the skiing experience by increasing the spacing between individual trees. Stands with less thinning are sometimes described as "Tree Skiing" areas. Stands with tree clearing to the extent that they can be groomed are described as "Groomable Glades."

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

**Grooming:** The preparation and smoothing of the developed trail network's snow surface, using large over-the-snow vehicles (commonly referred to as "snow cats" or "grooming machines"). Grooming machines are equipped with front-mounted blades to push snow and a rear-mounted implement to flatten and/or till the snow to an improved consistency.

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

**Handle Tow/Telecord Lift:** A type of surface lift in which skiers/riders are hauled uphill using a moving rope with an attached loop or handle they can grasp. Typically used for beginner skiers/riders on low gradient slopes.

**Hourly Capacity:** The number of guest trips (one ride for one guest = one guest trip) per hour that a lift can accommodate in each hour.

**Lift Capacity:** The number of skiers carried by a lift or lifts in one hour, measured in people per hour.

**Lift Loading Zone:** The area at the bottom of a ski lift where skiers congregate (generally in a lift maze) and load onto the lift.

**Lift Terminal:** The buildings or structures at the bottom and top of a lift that house the mechanical and electrical equipment necessary for operation of the lift. The lift terminals are also the points at which passengers load or unload from the lift.

**Management Area:** Used by the Forest Plan to define where different management activities may be carried out and to show where different kinds of public uses occur.

**Maximum Grade:** The maximum sustained gradient (in percent) occurring anywhere on the trail.

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

**Milling Area:** An area, typically in the base area or adjacent to lift terminals or mountain buildings, where skiers and/or pedestrians mill about to adjust equipment, prepare for their run, enter the lift maze area, talk with friends, etc.

**Misloading:** The lift loading efficiency; for example, when lift has to stop due to a misload or unload.

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

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

**Mountain Coaster:** A single- or double-person gravity-driven ride that features sled-like carts on an elevated rail track. Riders have the capability to control the car's speed with its rider-controlled brake system. Coasters can also operate year-round, even through light rain and snow.

**National Forest System (NFS) lands:** National Forests, National Grasslands, and other related lands for which the Forest Service is assigned administrative responsibility.

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

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

**Repeat Skiing or Round-trip Skiing:** Skiing repeatedly from one or more lifts. When skiers are not repeat skiing, they are either circulating to other parts of the ski area or egress skiing off the mountain.

**Ride Time:** The amount of time spent actually riding a lift, from the time the passengers load into/onto the carrier to the time they get off.

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

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

**Rope Speed:** The speed that a lift can transport guests, as expressed in number of feet per minute.

**Aerial Adventure/Challenge/Ropes Course:** A recreational and personal development/team building activity that requires individuals to move through of a series of elements (either high, above ground and/or low, on the ground).

**Skier Ability Level:** The maximum sustained gradients were used to determine the skier ability level of the mountain terrain.

**Skier Visit:** One skier skiing one day, or a portion of a day.

**Slope Area:** The total number of acres of terrain occurring within a trail boundary, as determined by GIS measurements.

**Slope Length (chairlift):** The length of the lift, from top terminal to bottom terminal, as measured on the ground (i.e., a three-dimensional measurement).

**Slope Length (terrain):** The three-dimensional length of the trail centerline, from beginning of the trail to the end, as measured by use of three-dimensional mapping technology (e.g., AutoCAD).

**Snowmaking Pond:** Storage/containment areas that holds surface water used for snowmaking.

**Snowmaking:** The production of snow by forcing water and pressurized air through a “snow gun” or similar equipment to help supplement coverage of the ski area, especially in the early season.

**Special Use Permit (SUP):** A legal document, similar to a lease, issued by the U.S. Forest Service. These permits are issued to private individuals or corporations to conduct commercial operations on NFS lands. They specify the terms and conditions under which the permitted activity may be conducted.

**Staging:** An area, or zone, where guests assemble and are prepared for a particular recreational pursuit. Examples of staging areas include milling and maze areas, check-in and guest drop-off areas, plazas, etc.

**Surface Lift:** A lift on which passengers are propelled by means of a circulating overhead wire rope while remaining in contact with the snow surface. Connection between the overhead wire and the passenger is by means of a towing device (e.g., T-bar, J-bar, platter, etc.) attached and circulating with the lift's haul rope. (Note: for definitional purposes, conveyor and belt lifts are considered surface lifts.)

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

**Trail Density Per Acre:** The number of skiers and snowboarders that occupy an acre of trail at any one given time. Trail density is reported in a persons-per-acre ratio.

**Trail Density:** The maximum number of skiers and snowboarders that can slide on an acre of trail at any given time without causing uncomfortable crowding on the trail. Acceptable trail density

is measured in skiers and snowboarders per acre. As a general rule, the difficulty of the trail and acceptable trail density share an inverse relationship.

**Tubing:** A recreational activity where an individual is transported downhill on a sloped surface in a large, inflated tube. Guests are typically transported back uphill using a conveyor lift.

**Uphill Hourly Capacity:** A calculation of the number of skiers and snowboarders transported—per hour—from the lower to the upper terminal of the lift. A resort's combined uphill hourly capacity is the aggregation of the resort's individual lift capacities.

**Up-Mountain Access Role:** Amount that a lift is used to access other lifts.

**Utilization Rate:** A comparison of a resort's actual annual skier visits to the theoretical annual ski area design capacity. Calculated by dividing the actual annual visitation by a number that represents the theoretical annual design skier capacity, which is obtained by multiplying the resort's CCC by the number of operating days. Typical utilization rates vary from 25 to 55% (depending on market niche, geographical location, etc.).

**Vertical Demand:** The vertical demand of a lift is the by-product of the lift's vertical rise, the average round-trip interval (i.e., number of runs per hour), and the number of hours the lift is used by an average skier or snowboarder. In short, vertical demand is the product of the lift's vertical rise and the number of runs skied/rode in a day of typical operation.

**Vertical Drop:** The difference in elevation between the beginning and end of the trail.

**Vertical Rise:** The difference in elevation between the top and bottom terminals.

**Vertical Transport Feet per Day (VTF/Day):** The number of persons a lift is able to transport 1,000 vertical feet in a day. VTF/Day is derived by multiplying a lift's uphill capacity (measured in persons per hour) by the lift's vertical rise (measured in feet) and dividing by the number of hours the lift operates in a day.

**Wind Scour:** A natural process where wind transports snow away from windward slopes, leaving them scoured with a hard surface.

**Zip Line:** A recreational activity that consists of an aerial ropeway and pulley system that transports an individual from one platform to another, generally in a downward incline.

**Zone Designations:** Areas at a resort identified for summer and multi-season activity offerings based on landscape characteristics, available infrastructure, and setting.