HEAVENLY MOUNTAIN RESORT

Draft Master Plan Amendment

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TAHOE REGIONAL PLANNING AGENCY

Heavenly®
LAKE TAHOE

Heavenly Ski Resort Master Plan

Prepared and Adopted Pursuant to TRPA Code of Ordinances
Chapter 16

Adopted by the TRPA Governing Board
June 26, 1996

Ordinance # 96-13

Approved by USDA Forest Service
Record of Decision Dated August 20, 1996

This Master Plan has been amended on the following dates:

AMENDMENT #	DATE	TRPA ADOPTING ORDINANCE #
1	April 25, 2007	2007-04

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1 Introduction

1 INTRODUCTION

1.1 PURPOSE OF THE MASTER PLAN AMENDMENT

In 1996, a twenty year Master Plan for the improvement, expansion, and management of summer and winter uses and support facilities at the Heavenly Resort - Lake Tahoe Nevada/California was developed. This Master Plan document was approved by the United States Forest Service (USDA Forest Service), Tahoe Regional Planning Agency (TRPA), and other involved agencies in 1996.

As identified in section 1.4, page 1-11, of the Master Plan 1996 (MP '96), 'because of changing needs or conditions and monitoring, this Master Plan may be amended.' Due to change in ownership, as well as change in general conditions at Heavenly Resort, the Master Plan (1996) has been reviewed and is proposed for amendment through this document, Heavenly Master Plan Amendment 2007 (MPA '07).

This Master Plan Amendment provides a history of the resort, presents the goals and objectives of Heavenly Resort and regulatory agencies, describes the existing facilities and describes the amendments to the approved Heavenly projects presented in the existing Master Plan (1996).

The Master Plan Amendment provides:

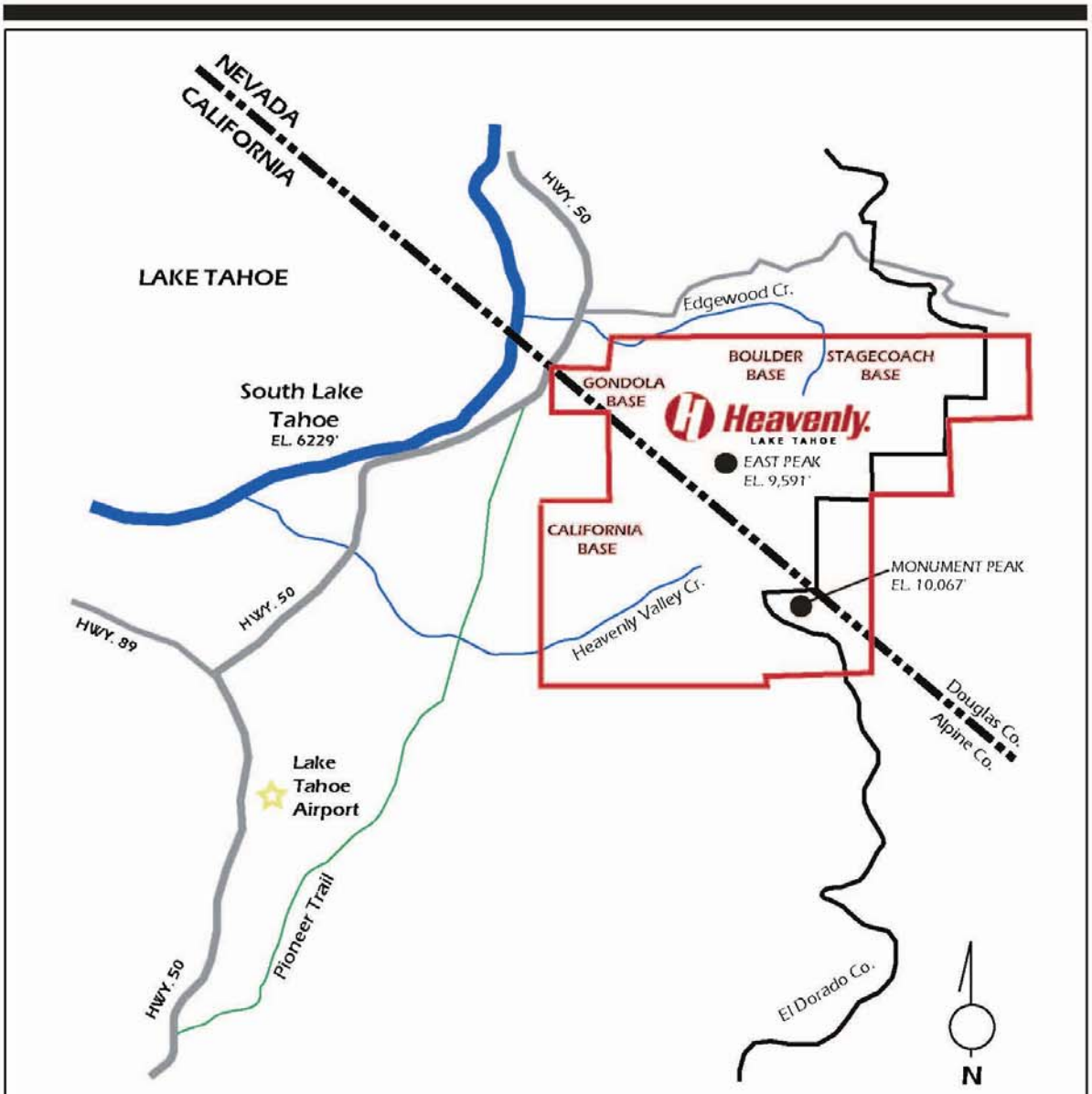
- Heavenly Resort to make known their intentions and expectations for future use and development of the area;
- The regulatory agencies with the ability to review and approval of projects which were contemplated and evaluated in the Master Plan; and
- The ability to disclose and analyze the environmental effects of Heavenly Resort Master Plan.

1.2 LOCATION

Heavenly Resort is located in the States of Nevada and California on the south shore of Lake Tahoe, as shown on Figure 1-1. The ski resort lies within El Dorado and Alpine Counties in California and within Douglas County in Nevada. A small parcel of the resort and gondola alignment lies within the City of South Lake Tahoe. The resort is also situated partially within the boundaries of the Tahoe Regional Planning Agency, partially on Federal lands of the USDA Forest Service, and partially on private lands of Heavenly Resort.

Ownership

Land ownership within the development boundaries Heavenly Resort is shared between the United States of America (USDA Forest Service) and the Heavenly Resort as shown on Figure 1-2. Property not owned or controlled by the United States or Heavenly Resort is not included in this Master Plan.



HEAVENLY RESORT
MASTER PLAN AMENDMENT 2007

FIGURE 1-1 Regional Location

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Figure 1-2	Property Ownership Map	1 (11 X 17)

Forest Service Special Use Permit and Boundary

The Special Use Permit Boundary was established by the USDA Forest Service Lake Tahoe Basin Management Unit in their 1989 permit to Heavenly Resort. This boundary encompasses approximately 10,530 acres of National Forest and Heavenly Fee Lands.

Governmental Jurisdictions

USDA Forest Service

The USDA Forest Service Lake Tahoe Basin Management Unit boundary encompasses approximately 7,020 acres of the 10,530 acres within the Heavenly permit boundary.

California/Nevada

The California/Nevada state line divides the special use permit boundary with approximately 60% (6,210 acres) of the ski area in Nevada and 40% (4,320 acres) in California.

Tahoe Regional Planning Agency (TRPA)

The TRPA Regional Boundary defines that portion of the Heavenly Resort which lies within the jurisdiction of the Tahoe Regional Planning Agency. Approximately 60% (6,470 acres) of the USDA Forest Service permit area is within the Lake Tahoe Basin.

Alpine County

Approximately 370 acres of the ski resort, as defined by the special use permit boundary, lies within Alpine County. The top station of the Comet & Dipper Chair and associated ski patrol building lie within Alpine County.

El Dorado County

Approximately 3,950 acres of land in the western portion of the resort, including the California Base, lie within El Dorado County.

Douglas County

Approximately 6,210 acres of land in the eastern portion of the resort, including the Stagecoach Base and Boulder Base areas, lie within Douglas County.

City of South Lake Tahoe

A total of 296 acres of the permit area lies within the City of South Lake Tahoe, however only a small portion of the resort is within the City. Access to the California Base is through the City via Ski Run Boulevard, Wildwood Avenue and Keller Road. The gondola base terminal is located within the City, adjacent to the California/Nevada state line, within Heavenly Village at Lake Tahoe.

Utility Districts

In addition to the afore mentioned jurisdictional boundaries, Heavenly Resort lies partially within the service districts of the South Tahoe Public Utility District (STPUD) in California and the Kingsbury General Improvement District (KGID) in Nevada. Sierra Pacific Power provides the electrical service to the resort. Southwest Gas provides natural gas to the Nevada side and Avista provides natural gas to the California portion of the resort.

JURISDICTION/AREA	ACREAGE*
USDA Forest Service	7,020
California/Nevada	6,210/4,320
Tahoe Regional Planning Agency	6,470
Alpine County	370
El Dorado County	3,950
Douglas County	6,210
City of South Lake Tahoe	296

**** Acreage of Jurisdiction within the Heavenly Special Use Permit boundary (Total area of the permit boundary is equal to 10,530 acres)***

1.3 PROJECT HISTORY

USDA Forest Service – ***Skiers At One Time (SAOT)***

In 1955, Heavenly Resort was issued its first special use permit by the USDA Forest Service and El Dorado County. Heavenly Resort continued expansion of its facilities until 1965 when the USDA Forest Service required the preparation of a master plan. The first Heavenly Master Plan (1966) was prepared and approved by the USDA Forest Service on March 3, 1966. This Master Plan called for a total of 14,719 Skiers At One Time (SAOT) at buildout.

On December 1, 1980, the USDA Forest Service adopted the Land Management Plan for the Lake Tahoe Basin. This plan would provide Heavenly Resort with an additional allocation of 5,400 Skiers at One Time (SAOT) 'in basin' and 3,600 SAOT 'out of basin'. Heavenly, however, was precluded from expanding the uphill capacity from its existing base condition until a new Tahoe Regional Planning Agency (TRPA) Regional Plan and a new ski area master plan were developed for the resort and approved by the TRPA and USDA Forest Service. Because no Master Plan was prepared for the resort, these SAOT allocations were not used.

In December 1988, the USDA Forest Service adopted a new Forest Land and Resource Management Plan (Forest Service LMP), again allocating to Heavenly, upon approval of a master plan, 5,400 SAOT over the then present level of 8,230 SAOT 'in basin' and 3,600 SAOT over the then present 4,470 SAOT 'out of basin'. This allocation would allow for a total of 21,700 SAOT at Heavenly. Table 1-1 provides a record of the USDA Forest Service historic, existing and proposed SAOT allocations for Heavenly Resort.

Table 1-1

Historical, Existing and Proposed Skier Allocations
Skiers At One Time (SAOT)

	In Basin	Out of Basin	Totals
1966 Heavenly Master Plan (Phase I)	11,424 SAOT (Eldorado Forest)	3,295 SAOT (Toiyabe Forest)	14,719 SAOT
1988 USDA Forest Service Land Management Plan (pending approval of Master Plan)	Existng 8,230 SAOT + Additonal 5,400 SAOT	Existing 4,470 SAOT + Additional 3,600 SAOT	21,700 SAOT (pending approval of Master Plan '96)
1996 Master Plan Approved SAOT	10,980 SAOT	7,120 SAOT	18,100 SAOT
2004 Existing SAOT	9,619 SAOT	3,807 SAOT	13,426 SAOT
Master Plan Amendment 2007 SAOT	11,214 SAOT	6,220 SAOT	17,434 SAOT

Notes:
* Skiers At One Time (SAOT) is a formula used by the ski industry to determine operating balance

Tahoe Regional Planning Agency – *Persons At One Time (PAOT)*

The TRPA uses a different classification system from the USDA Forest Service to determine capacity and use in the Lake Tahoe Basin. Rather than using a Skiers At One Time (SAOT) standard like the Forest Service, TRPA uses a Persons At One Time (PAOT) standard. As a result, a separate analysis of PAOT has been conducted for the TRPA and outlined below. PAOT calculations are shown in Appendix 1. Table 1-2 provides a record of TRPA historic, existing and proposed PAOT allocations for the Lake Tahoe Basin – as it relates to Heavenly Resort.

In 1987, the TRPA Regional Plan & Plan Area Statements allocated an additional 12,400 persons at one time (PAOT) to the Lake Tahoe Basin for winter day use ski facilities. Of the 12,400 PAOT for the region, Heavenly was allocated an additional 5,400 PAOT in the Lake Tahoe Basin through adoption of the Plan Area Statements (PAS).

Heavenly lies within two TRPA Plan Area Statements. A PAS outlines how land areas should be developed to achieve regional environmental and land use objectives. In 1996, the 1987 approved Plan Area Statements were amended upon adoption of the Master Plan (1996), in order to provide specific PAOT allocations. PAS 087 (entitled “Heavenly Valley California”) allocates 5,050 additional PAOT to Heavenly. PAS 086 (entitled “Heavenly Valley Nevada”) allocates 350 additional PAOT to Heavenly. Heavenly’s adopted Master Plan (1996) proposed to utilize only 4,471 of the 5,400 PAOT’s allocated to the ‘in basin’ portion of the resort.

Table 1-2

Historical, Existing and Proposed Skier Allocations
Persons At One Time (PAOT)

	In Basin	Out of Basin	Totals
1986 TRPA Regional Plan (pending Master Plan approval)	Additional 5,400 PAOT	N/A	17,800 PAOT
1996 Existing PAOT (prior to Master Plan approval)	6,751 PAOT	2,513 PAOT	9,264 PAOT
1996 Master Plan Approved PAOT	11,222 PAOT	4,903 PAOT	16,125 PAOT
2004 Existing PAOT	10,604 PAOT	2,914 PAOT	13,518 PAOT
Master Plan Amendment 2007 PAOT	11,910 PAOT	4,402 PAOT	16,312 PAOT

Notes:
1 Refer to Appendix 1 for definition of PAOT
2 Refer to Appendix 1 for explanation of how PAOT is calculated

Master Plan (1996)

In August of 1989, the USDA Forest Service renewed the Heavenly special term use permit for forty (40) years. The permit incorporated the 1966 Heavenly Master Plan and directed that a new Heavenly Master Plan be prepared. Heavenly initiated the Master Plan process by meeting with the TRPA and requesting that a Master Plan be prepared in compliance with Chapter 16.7 of the TRPA Code of Ordinances. Accordingly, a memorandum of understanding (MOU) that created an interagency steering committee was executed between Heavenly Resort, TRPA, USDA Forest Service, El Dorado County, Douglas County and the City of South Lake Tahoe.

Heavenly Resort contracted Sno-Engineering (Sno-E) in the summer of 1990 to inventory existing skier facilities including lifts, trails, and skier support facilities, and to proposed expansion to meet predicted demand. Based on the capacity analysis of Sno-E, Heavenly contracted with Design Workshop in 1992 to prepare a base areas and Mountain Facilities Master Plan. These documents, along with an operations plan, were submitted by Heavenly as a basis upon which to prepare the Master Plan.

In 1996, public hearings and workshops were held to receive comment on the Heavenly Master Plan and associated EIR/EIS. These meetings were held during the public circulation period of the Draft EIR/EIS. Public hearings were also held during the approval process for the Final Master Plan and environmental documentation. Agencies which required the public hearings were: TRPA, USDA Forest Service (called workshops), El Dorado County and Douglas County.

The Master Plan was adopted as follows:

USDA Forest Service

EIS Record of Decision	August 20, 1996
Master Plan Adoption	August 20, 1996

TRPA

EIS certification	June 26, 1996
Master Plan Adoption and Regional Plan Amendment	June 26, 1996

El Dorado County

EIR certification	September 17, 1996
Master Plan Adoption	September 17, 1996
General Plan/Zone Change Amendments	September 17, 1996

Douglas County

Master Plan Adoption	October 24, 1996

City of South Lake Tahoe

General Plan/Zone Change Amendments	April, 1997

Responsible agencies included: the California Regional Water Quality Control Board, Lahontan Region which may issue a Waste Discharge Permit, the United States Fish and Wildlife Service which may issue a biological opinion on threatened and endangered species, and the U.S. Army Corps of Engineers - which may issue a Wetlands 404 Permit for specific projects if fill is proposed in a jurisdictional wetland.

1996 – Present

In 1997, following the approval of the Master Plan, a new forty year term special use permit was issued by the Forest Service. Also at this time, the American Skiing Company (ASC) acquired the resort. Heavenly Resort and ASC participated as full partners to build the Park Avenue Redevelopment Project. The project would include a new high speed gondola, two hotels and a pedestrian oriented retail village. That same year, Heavenly Resort implemented a new chairlift and three new trails approved in the Master Plan 1996, including lift GG (Tamarack Express), trails 29A, 29B, & 82.

In 1998, Heavenly Resort upgraded lift B (Gunbarrel) and lift R (Stagecoach) to detachable quad lifts. Also that year, lift K (First Ride) was installed and Lift C (West Bowl) was removed.

The first phase of the Park Avenue Redevelopment Project (now Heavenly Village at Lake Tahoe) was completed in 2000 with installation of the Gondola. The Redevelopment Project is now generally complete. Access to Heavenly Resort via the gondola has met or exceeded original estimates and the community now has a true to downtown area for residents and visitors.

In May 2002, Vail Resorts, Inc. acquired Heavenly from ASC, and a new forty year term special use permit was issued by the Forest Service. During 2003, four new lifts were installed (Canyon Express, Big Easy, Von Schmidt I Mitey Mite and Von Schmidt Magic Carpet). This included a high speed quad to replace the Canyon and Ridge lifts & development of a new beginner area at the top of the gondola. These improvements are proving to have positive impacts on resort operations. The Existing Conditions Map (Figure 1-3), located at the end of this chapter, identifies Heavenly Resort facilities as of September 2004.

Master Plan Amendment (2007)

After acquisition of Heavenly in 2002, Vail Resorts pursued comprehensive studies and review of the facilities and operations at Heavenly. A major focus of these studies was to review the resort operations, the viability of the Master Plan and to determine the impact that the Stateline Gondola, installed in 2000, had on the operation of the resort, as well as the numerous other Master Plan approvals.

In the summer and fall of 2002, Heavenly contracted Ecosign Mountain Planners to conduct an extensive inventory and review of all facilities including lifts, trails, and skier support facilities. This inventory was reviewed extensively by Vail and Heavenly management staff and other ski area planning firms. It was determined that based on changes in conditions, consumer expectations, planning expertise, and lift technology, that the direction for Heavenly should be slightly different from that approved in the 1996 Master Plan.

In the winter of 2003, Heavenly contracted International Alpine Design (IAD) to assist in review of the Master Plan and conceptual planning of a more efficient, sustainable and balanced mountain plan. Over the summer of 2003, IAD conducted capacity and facility studies, as well as site meetings with Heavenly operational staff. After completing extensive review of the existing conditions and future needs of the resort, Heavenly operational staff and IAD had identified several 'areas of concerns' which are discussed in section 1.5, later in this chapter. IAD pursued more detailed planning to address these concerns and find efficient, sustainable solutions.

The result of this extensive planning is presented in the form of this Master Plan Amendment 2007. This plan provides for more optimal use of ski facilities and summer activities, a better balance of skiers/riders between lifts and trails, and overall, a more consistent distribution of skiers/riders on the mountain. Particular focus has been paid to improvement of the facilities within the existing, developed ski area to maximize the comfort and experience of the guest. The goal of the Master Plan Amendment is not focused expansion but rather on improvement, carried out through the use of modern lift technology and planning practices that are driven by efficiency, balance, and distribution.

1.4 MASTER PLAN AMENDMENT (2007) OBJECTIVES

This Master Plan Amendment represents a renewed, comprehensive development plan for Heavenly Ski Resort. The Heavenly Ski Resort, Tahoe Regional Planning Agency and USDA Forest Service objectives are:

Heavenly Ski Resort

- To comply with the directives of the State of California Resources Agency, Tahoe Regional Planning Agency and USDA Forest Service that within the Lake Tahoe Basin new ski resorts will not be allowed, but expansion of existing ski resorts may be permitted;
- To create an improved, multi-seasonal visitor/skier experience that is competitive with the experience offered by other destination resorts and reflects current market trends and preferences;
- To better integrate the operation of Heavenly Ski Resort into the evolving land use and economic goals of the Stateline and South Lake Tahoe community;
- To create a flexible ski area development implementation plan that allows realization of Heavenly Ski Resort's allocation of PAOTs (persons at one time), accommodates possible future market growth, and encourages investment decisions based upon evolving market and financial conditions;
- To make optimal use of the natural attributes of the site without creating a significant impact on the environment;
- To provide a cohesive theme throughout the entire mountain by means of new and remodeled skier support facilities;
- To modify and improve existing facilities for more efficient use;
- To supplement existing facilities to serve the number of people seeking recreation in the future as defined by the USDA Forest Service in its 1988 Land and Resource Management Plan and the Tahoe Regional Planning Agency in its 1986 Regional Plan;
- To more efficiently disperse traffic on the ski slopes through an expanded system of ski trails;
- To provide sufficient interconnection of the facilities and ski trails between Nevada and California;
- To assure that the Heavenly Ski Resort's support facilities on the mountain and at the base areas, together with accessory uses to the ski area, are in balance with the designed skiing capacity;
- To restore the health of the sub-watersheds and other natural resource values disturbed by past activities.

USDA Forest Service

- To assure that people enjoy the skiing and other recreation opportunities authorized for the site;
- To protect the environmental quality of the area;
- To provide a quality ski resort with ski runs and other disturbed areas stabilized to reduce the potential for soil erosion; and
- To improve the visual quality of the area.

Tahoe Regional Planning Agency

- To provide a fair share of the total basin capacity for public outdoor recreation;

- To provide for the appropriate type, location and rate of development of outdoor recreational uses in response to demand and in compliance with the Regional Plan;
- To provide for the efficient use of outdoor recreation resources, balancing seasonal and off-season utilization;
- To provide for the long-term preservation and restoration of Stream Environment Zones (SEZ);
- To reduce dependency on the automobile by making more effective use of existing transportation modes and to reduce air pollution caused by automobiles; and
- To effectively implement the environmental improvement program (EIP) for outdoor recreation.

The objectives of the TRPA are evaluated using the Planning Criteria established by the TRPA in Section 1.5 of this Master Plan Amendment (2007).

1.5 TRPA PLANNING CRITERIA

The 1990 Ski Area Master Plan Guidelines planning criteria provide guidance in the development of this Master Plan Amendment.

Criteria 1 - Expansion of existing ski areas to meet increased demand and needs is preferable to the development of new ski areas in the Tahoe Region.

Criteria 2 - The location and citing of expanded ski terrain and facilities shall be responsive to both environmental concerns and site amenities.

Criteria 3 - Expansion of existing ski areas is both targeted and limited during the twenty year life (1987 – 2007) of TRPA's Regional Plan, to expansions which accommodate a total of 12,400 new Persons At One Time.

Criteria 4 - Expansion of ski areas shall be consistent with TRPA's Regional Plan.

Criteria 5 - Expansion of ski areas shall be consistent with the availability of accommodations and infrastructure necessary to support visitors attracted to such ski areas.

Criteria 6 - All expansions of existing ski areas shall be implemented so as to not permit the expansion of existing day-use parking facilities at such ski areas.

Criteria 7 - All proposed expansions shall comply with the applicable requirements of other local, state, and federal laws.

Criteria 8 - The planning time frame for master plans is recommended to be at least ten years.

Criteria 9 - The master plan shall achieve a balanced facility as measured by the following criteria:
A. Cumulative Watershed Effects; B. Skier density; C. Uphill lift capacity/ski run capacity; and D. Skier support facilities.

1.6 MASTER PLAN AMENDMENT (2007) FOCUS AREAS

Critical analysis of the existing conditions at Heavenly identified several major 'areas of concern' that are detracting from the guest experience and overall efficiency of the resort. These concerns are the driving factors of the MPA (07), requiring improvement to ensure a positive guest experience at Heavenly Ski Resort. Improvement in these areas, as well as others, will improve circulation and balance on the mountain. Listed below is each major concern and brief discussion of the MPA (07) proposed improvements that address these long-term challenges.

- ***Higher distribution of skiers and snowboarders occurs on certain lift & trail pods served by detachable lifts creating distribution imbalance***
- ***The MP (96) does not effectively consider detachable lift technology***

This over concentration of skiers is most notable in the Dipper/Comet Pods, and the Sky Express/Canyon Pods. The MPA (07) proposes the installation of new high-speed, detachable technology in appropriate locations to attract skiers to new locations and create an even distribution of skiers (capacities) at the resort.

- ***Trail construction improvements in certain areas have lagged behind lift capacity improvements***

Detachable lift equipment delivers skiers onto slopes at much higher hourly rates than fixed-grip lift equipment, resulting higher skier densities on the trails. This impact is most notable in narrow or steep trail sections. These trail sections have been inventoried and where possible, the MPA (07) proposes widening and/or grading projects to improve skier circulation and visibility. These trail improvements will take priority over new trail construction. New trail construction has been designed to be balanced with new lift installations.

- ***Beginner skiers and snowboarders are currently limited to very isolated training zones on the mountain***

Review of the trail network at Heavenly indicates that there are no beginner trails on the upper half of the mountain, primarily the areas above Sky Meadows, The Top of The Gondola, and East Peak Lodge. Notably, many trail sections on the upper half of the mountain are consistently used as beginner routes but contain one or more steep areas that are not negotiable by beginners. The MPA (07) proposes to identify appropriate skier circulation routes and trail construction projects to allow safe, convenient, beginner access to more areas of the upper mountain.

- ***Current on mountain warming and restaurant facilities are undersized to provide adequate service***
- ***The MP (96) adequately addresses volume needs but not proper locations for mountain facilities***

Studies indicate that 1,200 – 2,000 additional seats are needed to adequately meet the current demand at Heavenly. The MPA (07) has prioritized three on mountain food service sites for new lodge construction. All proposed facilities are sized at or below the approved capacities of the MP (96).

- ***Skiers and snowboarders become "trapped" at certain locations***

The MP (96) did not address this issue. This issue is most notable at the East Peak Lodge site. Passage behind the restaurant, around the Lake and onto the Nevada Trail is very difficult, and requires all skiers and boarders to walk several hundred feet. Convenient skier circulation around all parts of the mountain is limited by skiways and roads that were built with long, flat sections, below acceptable industry design standards. The MPA (07)

proposes to inventory all reasonable solutions to these circulation constraints and design mitigations and/or new alignments where appropriate.

- ***The Gondola has become the predominant destination resort access point***

Destination skiers who stay in or near the Stateline area access the resort via the Gondola. As a result, the full range of adequately sized, on-mountain services is needed. This includes Ski School, Food and Beverage, Rentals, Retail, and Guest Services. The Ski School learning terrain should be expanded. The lodge at the Top of the Gondola should provide the services in an appropriately designed setting.

1.7 MASTER PLAN AMENDMENT (2007) SUMMARY

The purpose of the 1996 Master Plan was to guide the development of Heavenly Resort over a twenty year period and to provide a framework against which specific projects and development would be evaluated. The main emphasis of the 1996 Master Plan was to secure the approval and construction of the Stateline Gondola from South Lake Tahoe to the Mountain. Since the installation of this transportation system in 2000, a careful study and evaluation of the impacts on the operation of the resort has been conducted. Based on these findings and other current conditions, Heavenly Resort has prepared a Master Plan Amendment for submittal in 2004. The Master Plan Amendment (2007) submittal is carefully based on the Master Plan (1996) with a focus on updated and renewed details for all projects presented in the original plan.

Wherever possible, MP (96) projects have been critically studied and when necessary, redesigned to reflect the most current mountain conditions at Heavenly and latest technology options so that improved distribution and utilization of facilities can be achieved. The revised plans presented in the MPA (07) also minimize environmental impacts associated with the approved expansion of the existing, permitted ski area.

The overall concept contained in the MPA (07) is to improve rather than expand the resort. The MPA (07) provides for more efficient use of ski facilities and summer activities, a better balance of skiers and riders between lifts and trails, and a more consistent distribution of skiers and riders throughout the mountain. Particular focus has been paid to improving facilities within the existing, developed ski area in order to maximize the guest's experience. The goal of the MPA (07) is not focused on expansion, but rather on improvement, carried out through the use of modern lift technology and planning practices that are driven by efficiency, balance, and distribution.

Most notably, the MPA (07) proposes the use of high-speed, detachable lift equipment to replace older, fixed-grip lift equipment. By doing so, the renewed plan effectively reduces the total number of lifts required to improve the guest experience at Heavenly Ski Resort and improves overall balance, distribution and utilization of facilities by skiers. The MPA (07) lift proposals have been carefully planned and designed to meet the existing, approved persons at one time (PAOT) and skiers at one time (SAOT) limitations imposed by the MP (96). The goal of the MPA (07) is not to develop more 'skiable acres' outside of the USDA Forest Service permitted ski area but rather to focus improvement on the experience in the existing, approved ski area.

Lodge and facilities plans have been updated with a focus on improvements to the quality of the goods and services offered, site planning, on-mountain accessibility and guest service amenities. Major expansion plans for East Peak and Sky Meadows Lodges approved in the MP (96) have been relocated from their original

locations to different sites in the MPA (07) in order to meet these objectives. The lodge at the top of the gondola will be reduced in size and program in order to better respond to the known circulation patterns and distribution of resorts guests.

The Master Plan Amendment provides for improved year-round recreational opportunities through a series of upgrading and improvement programs. The major components of the MPA (07) are highlighted below, and shown in Table 1-3.

Lifts

The MP (96) approved a build out level of 33 lifts with a combined total capacity of 52,620 persons per hour (pph). The MPA (07) proposes a build out level of 38 lifts with a combined total capacity of 52,620 pph. The MPA (07) will achieve this capacity with a slightly larger amount of In-Basin capacity, and a slightly smaller amount Out-of-Basin. The MPA (07) effectively reduces major lift infrastructure while maintaining capacity without exceeding approved levels. The MP (96) includes twenty-nine aerial lifts and four surface lifts. The MPA (07) includes twenty-three aerial lifts and fifteen surface lifts (including two snow tubing-only lifts), a reduction of six major aerial lifts. As a result, there is a significant reduction in the number of the larger, aerial lifts in the amendment. Three new transport lifts with no uphill capacity are proposed as short, tow lifts that serve as surface transport along flat road segments that are identified as trapped areas. Proposed lift changes are categorized into lift consolidations, minor lift capacity changes, training lift installations, tubing-only lifts and transport/convenience lifts.

In California, the aerial tram will be replaced with a detachable lift as planned, however, it will extend further to land near the proposed Powderbowl Lodge site near the top of the Powderbowl Express lift. It will be a two-way lift that is capable of downloading. A small handle tow lift with no uphill capacity will allow skiers to exit the top of the gondola and enter California Trail. Currently, they have to walk or push across this very flat access route (approximately 320 feet in length) in order to reach the trail network. A second handle tow lift will connect skiers from the Gondola to the Ski School area located past the Tamarack Express lift. Approved but unbuilt lift capacity associated with the HH Lift will be reused for a short beginner-level chairlift at the Top of the Gondola.

In Nevada, the Mott Canyon lift will be extended to a new top station near the top of the existing Dipper Express lift. This will permit skiers to reach all of the Mott Canyon entrance gates and many of the Killebrew Canyon gates by riding only one lift. Presently, many of the gates cannot be reached without riding two existing lifts. Its capacity will increase from 1,000 to 2,000 skiers/hour. New express lifts will replace the existing North Bowl and Olympic lifts in their existing alignments. Galaxy lift (Lift U) will be upgraded to a detachable lift with a one-hour capacity increase of 600. A new East Peak Lake surface transport lift will assist skiers below East Peak Lodge on the flat section of Nevada Trail near East Peak Lake. The Alderman's lift (Lift EE) and trail pod will be eliminated. Stagecoach 2 lift (Lift Y) will also be eliminated.

Trails & Snowmaking

Additional trail capacity is needed in order to balance uphill lift capacity. The new trails will infill areas between existing trails. Overall, the MPA (07) proposes to implement 67.3 more acres of trails than in the MP (96). 23.9 of the 67.3 acres are located In-Basin, and 43.4 acres are located Out-of-Basin.

In California, one new run near the Powderbowl lift (trail G9) and two new trails in the Skiways area (trail I4 & I5) will be added. The Skiways trails will be semi-gladed and will contain some amount of trees within the runs (approximately 25% trees and 75% run area) but are not typical gladed areas (50% trees & 50% run area). A new gladed run will be created in the Maggie's Canyon area (trail I2). Advanced Round-A-Bout (trail 1) will be relocated to an improved location connecting the existing Groove and Round-A-Bout trails. A short segment of trail (trail H12) will improve the connection between Ridge run and Double Down near Woods Trail. An improved route down Lower California Trail (trail 5A) will be added for low-level skiers. Trail widening will occur primarily along specific sections of the existing Liz's, Ellie's, Powderbowl, Ridge and Jackpot trails in order to enhance circulation. On the existing High Roller trail (formerly Steamboat), a new, in-ground half-pipe will be constructed to provide roughly one-half of the height of the ultimate pipe dimensions. This will significantly reduce energy and water consumption associated with snowmaking

In general, snowmaking in California remains the same as was approved in 1996 with the following changes. New snowmaking will be added to the new Powderbowl run described above and to the existing section of High Roller trail containing the half-pipe. In addition, snowmaking will be added to the relocated Advanced Round-a-bout run. Snowmaking will be deleted from the West Bowl trail (trail B4) and a section of the Pistol trail located near the Gunbarrel Express lift.

In Nevada, new trails are proposed to infill areas between existing trails, or to provide balanced capacity associated with upgraded lifts. A new gladed trail (trail W5) will be created near the existing Aries trail. New trails serving the Northbowl Express lift will be added (trails S8, S9 and S10). Trails S9 and S10 will be gladed with no more than 50% of the vegetation removed with the ski trail area. New trails serving the Galaxy Express lift (trails U3 and U4) will infill between the existing Galaxy and Perimeter trails. Three new trails will be added near the Upper Stagecoach run (R3, R4 & 14) in areas that are presently used for tree skiing. The Wells Fargo pod will include three additional trials not included in the MP (96) (trails 17, Z5 and Z7). A new trail (trail V12) from Orion's run to the base of the Dipper Express lift will be added as an infill trail. A short trail connecting Lower Stagecoach run to the Ridge Tahoe will allow guests direct ski access to the Ridge Tahoe property (trail 18). The upper sections of the Nevada Trail near East Peak Lake (trail 6) which are too flat to allow gliding, will be replaced with a surface transport lift and a new, steeper trail alignment that will enter Stagecoach run at a location slightly lower than it presently does. Minor trail widening is proposed near the confluence of Orion's and Little Dipper trails. Other trail expansion that is contained in the MP (96) will remain as planned, except for trails contained in the Alderman's lift pod. These trails will be eliminated along with the lift.

New snowmaking in Nevada includes most of the trails that are described above except for trails R3 and R4. Under the MPA (07), new snowmaking will be added to with Jack's Run along with the trails in the Wells Fargo pod (Z1, Z3, Z5, Z6 & Z7).

Snowmaking system improvements are centered around improved safety, reliability and efficiency of energy and water consumption. The MPA (07) decreases snowmaking on in-basin trails by 7.5 acres, and increases it on out-of-basin trails by 37.3 acres for a net increase of 29.8 acres. However, snowmaking water consumption is increased by a total of only 2.0 acre-feet annually based on more precise applications and using lower volumes on certain trails.

Facilities

Overall, the total capacity of the base lodges and on-mountain lodges will not increase. Redevelopment plans for the California Base Lodge remain as approved in the MP (96), except for a 10,000 square foot reduction in food service. Plans for the Stagecoach and Boulder Lodges remain generally as indicated in the MP (96) except for minor outdoor deck additions at both lodges. These are shown in Chapter 4. The most significant change proposed for the Boulder Lodge site is to relocate the Boulder lift terminal and children's ski school facilities out of the Edgewood Creek stream environment zone and site it at the edge of the existing parking area. Implementation of the lift terminal location will occur when the lift is upgraded.

On the mountain, lodge capacity will be rearranged within the overall approved levels in order to provide better locations and accessibility for where guests are expected to be. Compared to the MP (96), on-mountain lodge changes will reduce capacity at East Peak Lodge and the Top of the Gondola. Lodge capacity will be eliminated at Sky Meadows Deck and Lodge. Capacity will be increased at the Lakeview Lodge at the Top of the Tram and Snow Beach (formerly Patsy's Hut). New lodge sites will be developed utilizing the reduced or eliminated capacity described above at the Sand Dunes and Powderbowl sites. See Chapter 4.

On-mountain maintenance and support facilities will also be reconfigured. The proposed new vehicle and lift maintenance facility proposed for the top of the gondola in MP (96) will be eliminated. In its place, expansion will occur at the existing Upper Vehicle Maintenance Shop site. A new lift maintenance building will be built near the Upper Shop. Minor expansion will occur at the existing East Peak lift maintenance facility. The Lower Vehicle Maintenance Shop will be relocated off of the California Base Lodge site as planned in the MP (96).

Activities

Several changes in activities, both winter and summer, are planned. In winter, the area between the gondola mid-station and top station will be used for cross-country and snowshoe trails. See Chapter 4. In summer, the area will be used for summer hiking and interpretive trails. A new year-round activity will be the Zipline adventure ride. Originating from the top of Tamarack Express lift, riders will slide on a cable down to the top of the gondola. The Discovery Forest, located near the new gondola lodge, will contain seasonal attractions for adults and children. In winter, the area will primarily focus on children's activities such as forest wildlife and related environmental education exhibits. A second tubing lift will be added along the same hillside as the existing tubing lift. The second one will be located slightly closer to the gondola.

In summer, a paved, barrier-free path will wind through the mature forest in the Discovery Forest area with interpretive and environmental exhibits. Active sports such as a climbing wall, bungee trampoline and similar outdoor activities will be added near the lodge. In summer, an outdoor performance amphitheater will be implemented near the existing tubing lift. Performances will include interpretive talks, presentations, theatrical and musical events. No large concerts are planned. The ultimate seating capacity will not exceed 1,100 persons. A stage, lighting and sound systems will be set up on a seasonal basis and removed each fall.

Two new destination-oriented hiking trials will be added for summer hikes. The first trail will leave the Discovery Forest area described above and end at the Sand Dunes Lodge site. The second trail will start at roughly the same place and wind its way down to East Peak Lodge. Both lodges will offer summer activities, including food and beverage services and sightseeing. Fishing and other guest amenities will be offered at East Peak Lodge.

Table 1-3

2007 Master Plan Amendment - Facility Summary at Buildout

	CA In-Basin		CA Out-of-Basin		NV In-Basin		NV Out-of-Basin		Totals in- and Out-of-Basin
Total Lifts	**25**		**0**		**6**		**7**		**38**
Hourly Capacity (pph)	28,620		0		9,800		14,200		52,620
VTF/Hour (000)	29,248		0		5,866		18,208		53,322
Ski Trails (acres)	**251.4**		**65.8**		**78.8**		**416.5**		**812.5**
Beginner/Novice	77.7	31%	0.0	0%	21.6	27%	21.7	5%	121.0
Low. Int./Intermediate	109.9	44%	19.1	29%	44.4	56%	193.8	47%	367.2
Adv. Int./Expert	54.1	22%	45.6	70%	12.0	15%	198.8	48%	310.5
Other	9.8	13%	1.1	2%	0.8	1%	2.1	1%	13.8
Snowmaking (acres)	**210.8**		**19.1**		**76.5**		**222.0**		**528.4**
Beginner/Novice	79.9	38%	0.0	0%	23.4	31%	20.3	11%	123.6
Low Int./Intermediate	90.8	43%	19.1	100%	41.1	54%	183.4	100%	334.4
Adv. Int./Expert	40.4	19%	0.0	0%	12.0	16%	18.3	10%	70.7
Support Facilities									
No. of Buildings	**6**		**1**		**1**		**2**		**10**
Seats	3,050		1,000		250		831		5,131
Space (sq. feet)	158,317		36,000		18,340		35,025		247,682
Maintenance Facilities									
No. of Buildings	**2**		**0**		**1**		**1**		**4**
Space (sq. feet)	14,620		0		1,500		18,000		34,120
Parking/Access									
Vehicles Parked (onsite)	1,310		None		450		410		2,170
Satellite Parking (offsite)	0		None		600		600		1,200
Structured Parking	822		0		0		0		822
Avg. Car Occupancy	2.8		2.8		2.8		2.8		2.8
Skiers/Visitors	5,970		None		2,940		2,828		11,738
Gondola (cap/day)	6,000		0		0		0		6,000
Utilities									
Domestic Water	10.2		2		2.1		4.7		19
Snowmaking (acre/ft. avail)	92		8		29		593		722
Sewer	STPUD		STPUD		KGID		KGID		
Power	Round Hill		Kingsbury		Kingsbury		Buckeye		
Skiers At One Time / CCC (SAOT)	7,739		0		3,475		6,220		17,434
PAOT	8,872		0		3,038		4,402		16,312

Notes:

2 Approved Facilities (1996) / Existing Facilities (2004)

2 APPROVED FACILITIES (1996) / EXISTING FACILITIES (2004)

This Chapter categorically discusses facilities approved in the Master Plan (1996), facilities implemented since 1996 and the existing facilities as of September 2004. Table 2-1 provides an overall summary of the facilities at build-out, as approved in the 1996 Master Plan. Table 2-2 provides an overall summary the existing facilities, current as of September 2004. A map of the Existing Conditions at Heavenly can found on page 2-3 of this chapter and is labeled Figure 2-1, Heavenly Existing Conditions – 2004.

Table 2-1

Master Plan (1996) Facility Summary at Buildout

	CA In-Basin		*CA Out-of-Basin*		*NV In-Basin*		*NV Out-of-Basin*		*Totals in- and Out-of-Basin*
Total Lifts	**21**		**0**		**4**		**8**		**33**
Hourly Capacity (pph)	31,020		0		5,600		16,000		52,620
VTF/Hour (000)	28,574		0		4,176		18,498		51,248
Ski Trails (acres)	**238.6**		**64.4**		**67.8**		**374.3**		**745.1**
Beginner/Novice	64.6	27%	0.0	0%	20.0	29%	0.0	0%	84.6
Low. Int./Intermediate	123.7	52%	17.8	28%	35.8	53%	142.7	38%	320.0
Adv. Int./Expert	50.3	21%	46.5	72%	12.0	18%	231.6	62%	340.4
Snowmaking (acres)	**227.0**		**20.2**		**67.8**		**183.8**		**498.8**
Beginner/Novice	62.9	28%	0.0	0%	20.0	29%	0.0	0%	82.9
Low Int./Intermediate	115.5	51%	17.8	88%	35.8	53%	139.7	76%	308.8
Adv. Int./Expert	48.6	21%	2.3	11%	12.0	18%	44.0	24%	106.9
Support Facilities									
No. of Buildings	**5**		**0**		**1**		**2**		**8**
Seats	3,775		0		103		1,256		5,134
Space (sq. feet)	178,900		0		17,340		40,363		236,603
Maintenance Facilities									
No. of Buildings	**1**		**0**		**1**		**1**		**3**
Space (sq. feet)	20,000				100				38,100
Parking/Access									
Vehicles Parked (onsite)	1,710		None		450		410		2,570
Satellite Parking (offsite)	0		None		600		800		1,400
Avg. Car Occupancy	2.8		2.8		2.8		2.8		11.2
Skiers/Visitors	4,790		None		1,053		3,390		9,233
Ski Area Shuttles (cap/day)	2,600		None		1,800		600		5,000
Gondola (cap/day)	6,000		None		None		None		6,000
Utilities									
Domestic Water	11.2		0		2.1		5.7		19
Snowmaking (acre/ft. avail)	92		8		29		593		722
Sewer	STPUD		n/a		KGID		KGID		
Power	Stateline		n/a		Buckeye		Buckeye		
Comfortable Carrying Cap. (CCC)	8,220		0		2,760		7,120		18,100
PAOT	9,506		0		1,716		4,903		16,125

Table 2-2

Facilities Summary - September 2004

	CA In-Basin		CA Out-of-Basin		NV In-Basin		NV Out-of-Basin		Totals In- and Out-of-Basin
Total Lifts	**20**		**0**		**5**		**5**		**30**
Hourly Capacity (pph)	29,065		0		5,640		9,400		44,105
VTF/Hour (000)	17,866		0		3,797		10,518		32,181
Ski Trails (acres)	**226.2**		**64.7**		**57.0**		**313.8**		**661.7**
Beginner/Novice	60.9	26%	0.0	0%	20.0	35%	0.0	0%	80.9
Low. Int./Intermediate	117.2	51%	17.8	29%	23.4	41%	146.2	47%	304.6
Adv. Int./Expert	50.4	22%	47.1	76%	12.0	21%	167.7	54%	277.2
Snowmaking (acres)	**173.3**		**14.4**		**39.5**		**80.4**		**307.6**
Beginner/Novice	71.0	31%	0.0	0%	23.5	35%	5.2	3%	99.7
Low Int./Intermediate	65.5	29%	14.4	71%	16.0	24%	75.1	41%	171.0
Adv. Int./Expert	36.9	16%	0.0	0%	0.0	0%	0.0	0%	36.9
Support Facilities									
No. of Buildings	**7**		**0**		**1**		**2**		**10**
Seats	3,775		0		180		614		4,569
Space (sq. feet)	101,619		0		9,528		26,892		138,039
Maintenance Facilities									
No. of Buildings	**4**		**0**		**1**		**0**		**5**
Space (sq. feet)	14,310		0		500		0		14,810
Parking/Access									
Vehicles Parked (onsite)	1,310		None		450		410		2,170
Satellite Parking (offsite)	0		None		600		200		800
Avg. Car Occupancy	2.8		2.8		2.8		2.8		11.2
Skiers/Visitors	6,530		None		2,940		2,268		11,738
Ski Area Shuttles (cap/day)	2,600		None		1,800		600		5,000
Gondola (cap/day)	6,000		None		None		None		6,000
Utilities									
Domestic Water	11.2		0		2.1		5.7		19
Snowmaking (acre/ft. avail)	92		8		29		593		722
Sewer	STPUD		n/a		KGID		KGID		
Power	Stateline		n/a		Buckeye		Buckeye		
Comfortable Carrying Cap. (CCC)	7,606		0		2,013		3,807		13,426
PAOT	9,010		0		1,748		2,914		13,672

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Figure 2-1	Existing Conditions Map	1(11X17)

2.1 LIFTS

Lifts Approved in Master Plan 1996

The Master Plan (1996) approved a build out level of 33 lifts, 7 more than the existing 26 in 1996. Eight new lifts were approved, with the West Bowl (Lift C) to be removed. A high speed gondola originating from near the Stateline intermodal transit center to the Von Schmidt's Flats area was the major component. The existing tram at the California base area was to be removed within a timeframe to be specified by TRPA in the gondola construction permit. New lifts originating from the Gondola Top Station included the Von Schmidt's 1 and 2 (Lifts HH and HH-1) serving beginner and novice terrain, California (Lift GG) serving intermediate terrain, and Von Schmidt's (Lift J) which provides access to the Gondola Top Station from the Sky Meadows Area.

Two new lifts were to be constructed out of basin and one existing lift was to be replaced by shorter lifts. Wells Fargo (Lift Z) and Aldermans (Lift EE) were approved to service additional advanced intermediate terrain. Stagecoach (Lift R) was to be split into two lifts to better serve the beginning skiers. At the California Base, the West Bowl Platter pull, California Ski School and Enchanted (Lifts K, L, and M) lifts were to be relocated and upgraded to improve the teaching terrain for beginning skiers. Table 2-3 summarizes Master Plan (1996) approved lifts by name, type, length, vertical and hourly capacity.

Lift Changes since 1996

Since approval of the Master Plan in 1996, 4 new aerial lifts and 2 new surface lifts have been installed, with 4 aerial lifts replaced, 3 surface lifts replaced and 3 lifts removed. The major component was the Stateline Gondola (Lift II), installed in 2000 with a capacity of 2,800 persons per hour (pph). Three other new aerial lifts have been installed, the Tamarack Express (Lift GG) in 1997, First Ride (Lift K) in 1998 and the Big Easy (Lift HH-1) in 2003. Two surface lifts (Lift HH allocation) were installed in 2003 and two surface lifts (Lifts X & X-1) installed in 2004. Lift replacements/ upgrades included the Gunbarrel Express (Lift B) and Stagecoach Express (Lift R) in 1998, Pioneer handle tow (Lift N) in 2001, Canyon Express (Lift H) in 2003, and Powderbowl Express (Lift G-1) in 2004. Lift removals included West Bowl (Lift C) in 1998, Ridge (Lift H-1) in 2002, and Waterfall (Lift G) in 2004.

In consideration of the Stagecoach (Lift R) realignment and lengthening, Stagecoach 2 (Lift Y) was eliminated from the plan per the 1998 Forest Service Decision Memo. Table 2-4 summarizes lifts implemented, replaced, or removed since 1996 by year, name, type, and capacity.

Existing Lift Conditions as of September 2004

As of September 2004, The Ski Resort operates a total of 30 lifts with a total one-hour uphill capacity of 43,605 skiers. The 30 lifts include 4 magic carpets, 5 handle tows, 4 double chairs, 6 triple chairs, 1 quad chair, 6 detachable quad chairs, 2 detachable six-person chairs, a gondola, and a tram. In Addition, Heavenly currently has two lifts, Von Schmidt's (Lift J) and Von Schmidt's II (Lift HH allocation), that are approved to be built but not yet constructed. Table 2-5 summarizes the existing lift conditions (as of September 2004) by name, type, length, vertical and hourly capacity.

Table 2-3

Master Plan (1996) Facilities - Lifts at Buildout

Lifts	Name	1996 Master Plan Approved Type	*Length*	*Vertical*	*1996 Master Plan Hourly Capacity*
In Basin					
A	TRAMWAY	DETACHABLE QUAD	3,660	1,570	2,000
B	GUNBARREL EXPRESS	DETACHABLE QUAD	3,390	1,591	2,000
C	WEST BOWL	REMOVED	3,710	1,660	0
D	WORLD CUP	FIXED DOUBLE	1,100	320	900
E	PATSY'S	QUAD CHAIR	1,160	217	1,800
F	GROOVE	QUAD CHAIR	1,180	300	1,800
G	WATERFALL	QUAD CHAIR	3,350	920	1,800
G-1	POWDERBOWL EXPRESS	QUAD CHAIR	2,360	810	1,800
H	CANYON EXPRESS	DETACHABLE QUAD	3,720	1,000	1,800
H-1	RIDGE	DOUBLE CHAIR	4,840	1,060	800
I	SKY EXPRESS	DETACHABLE QUAD	4,390	1,420	2,400
J	VON SCHMIDT'S	QUAD CHAIR	4,450	685	1,800
K	FIRST RIDE	QUAD CHAIR	970	180	1,800
L	CA SKI SCHOOL	J - BAR	800	110	500
L-1	CA SKI SCHOOL II	NOT PROPOSED	250	26	NA
M	ENCHANTED FOREST II	QUAD CHAIR	380	70	1,200
M-1	MAGIC CARPET	MAGIC CARPET	80	7	120
N	PIONEER I	QUAD CHAIR	380	40	1,000
O	PIONEER II	J - BAR	380	40	500
Q	BOULDER	QUAD CHAIR	2,870	440	1,800
S	NORTH BOWL	QUAD CHAIR	5,290	1,290	1,400
T	OLYMPIC	QUAD CHAIR	3,380	860	1,800
X	BOULDER I	MAGIC CARPET	490	50	600
X-1	BOULDER II	NOT PROPOSED	250	10	NA
GG	TAMARACK EXPRESS	QUAD CHAIR	2,630	600	2,000
HH (1/3)	VON SCHMIDT'S I	QUAD CHAIR	480	34	1,000
HH (1/3)	VON SCHMIDT'S II	NOT PROPOSED	490	68	NA
HH (1/3)	VON SCHMIDT'S CARPET	NOT PROPOSED	120	11	NA
HH-1	BIG EASY	QUAD CHAIR	2,010	200	1,000
II	STATELINE GONDOLA	GONDOLA	12,010	2,850	3,000
TOTAL			70,570		**36,620**
Out of Basin					
R	STAGECOACH EXPRESS	QUAD CHAIR	2,900	550	2,000
U	GALAXY	QUAD CHAIR	5,440	1,020	1,800
V	DIPPER EXPRESS	DETACHABLE CHAIR	4,910	1,140	2,400
W	COMET EXPRESS	DETACHABLE CHAIR	3,580	880	2,400
Y	STAGECOACH II	QUAD CHAIR	4,230	1,200	1,800
Z	WELLS FARGO	QUAD CHAIR	5,710	1,900	2,400
DD	MOTT CANYON	DOUBLE CHAIR	2,570	870	1,000
EE	ALDERMANS	QUAD CHAIR	5,810	1,420	2,200
TOTAL			35,150		**16,000**
Grand Total			105,720		**52,620**

Table 2-4

Lifts Implemented Since Master Plan (1996) Adoption

Year	Name	Type	Action	*Hourly Capacity*	*Net Change In Capacity*
1997					
GG	TAMARACK EXPRESS	DETACHABLE SIX	NEW INSTALLATION	2,400	2,400
1998					
B	GUNBARREL EXPRESS	DETACHABLE QUAD	REPLACE EXISTING	2,400	720
C	WEST BOWL Removal	FIXED DOUBLE	REMOVE EXISTING	930	(930)
R	STAGECOACH EXPRESS	DETACHABLE QUAD	REPLACE EXISTING	2,400	1,200
K	FIRST RIDE	FIXED TRIPLE	NEW INSTALLATION	1,000	1,000
1999					
	NONE				
2000					
II	STATELINE GONDOLA	GONDOLA	NEW INSTALLATION	2,800	2,800
J	VON SCHMIDT'S	FIXED QUAD	UNBUILT	1,800	1,800
HH	GONDOLA I (revised & built in 2003)	FIXED QUAD	NEW INSTALLATION	1,000	0
HH-1	GONDOLA II (revised & built in 2003)	FIXED TRIPLE	NEW INSTALLATION	1,000	0
M	ENCHANTED FOREST	TOW	RELOCATE EXISTING	380	0
2001					
N	PIONEER 1	TOW	REPLACE EXISTING	465	465
2002					
	NONE				
2003					
H	CANYON EXPRESS	DETACHABLE QUAD	REPLACE EXISTING	2,600	800
H-1	RIDGE Removal	FIXED DOUBLE	REMOVE EXISTING	900	(900)
HH-1	BIG EASY	FIXED QUAD	NEW INSTALLATION	1,400	1,400
HH (portion)	VON SCHMIDT'S I	TOW	NEW INSTALLATION	250	250
HH (portion)	VON SCHMIDT'S II	TOW	NEW INSTALLATION	250	250
HH (portion)	VON SCHMIDT'S CARPET	BELT	NEW INSTALLATION	450	450
2004					
G-1	POWDERBOWL EXPRESS	DETACHABLE SIX	REPLACE EXISTING	3,400	1,860
G	WATERFALL Removal	FIXED TRIPLE	REMOVE EXISTING	1,800	(1,800)
X	BOULDER CARPET I	TOW	REPLACE EXISTING	750	150
X-1	BOULDER CARPET II	BELT	NEW INSTALLATION	400	400

Table 2-5

Existing Lifts Summary - September 2004

Lift	Name	2004 Existing Type	Length	Vertical	2004 Existing Hourly Capacity
In Basin					
A	TRAMWAY	TRAM 50	3,660	1,570	650
B	GUNBARREL EXPRESS	DETACHABLE QUAD	3,390	1,591	2,400
C	WEST BOWL	REMOVED	3,710	1,660	0
D	WORLD CUP	FIXED DOUBLE	1,100	320	900
E	PATSY'S	FIXED TRIPLE	1,160	217	1,800
F	GROOVE	FIXED TRIPLE	1,180	300	1,800
G	WATERFALL	REMOVED	3,350	920	0
G-1	POWDERBOWL EXPRESS	DETACHABLE SIX	2,360	810	3,400
H	CANYON EXPRESS	DETACHABLE QUAD	3,720	1,000	2,600
H-1	RIDGE	REMOVED	4,840	1,060	0
I	SKY EXPRESS	DETACHABLE QUAD	4,390	1,420	2,400
*J	VON SCHMIDT'S	APPROVED - UNBUILT	4,450	685	1,800
K	FIRST RIDE	FIXED TRIPLE	970	180	1,800
L	CA SKI SCHOOL	HANDLE TOW	800	110	500
L-1	CA SKI SCHOOL II	HANDLE TOW	250	26	500
M	ENCHANTED FOREST II	HANDLE TOW	380	70	380
M-1	MAGIC CARPET	MAGIC CARPET	80	7	120
N	PIONEER I	HANDLE TOW	380	40	465
O	PIONEER II	REMOVED	380	40	0
Q	BOULDER	FIXED TRIPLE	2,600	400	1,800
S	NORTH BOWL	FIXED TRIPLE	5,290	1,290	1,700
T	OLYMPIC	FIXED DOUBLE	3,380	860	990
X	BOULDER I	MAGIC CARPET	490	50	750
X-1	BOULDER II	MAGIC CARPET	250	10	400
GG	TAMARACK EXPRESS	DETACHABLE SIX	2,630	600	2,400
HH (1/3)	VON SCHMIDT'S I	HANDLE TOW	480	34	250
*HH (1/3)	VON SCHMIDT'S II	APPROVED - UNBUILT	490	68	250
HH (1/3)	VON SCHMIDT'S CARPET	MAGIC CARPET	120	11	450
HH-1	BIG EASY	FIXED QUAD	2,010	200	1,400
II	STATELINE GONDOLA	GONDOLA	12,010	2,850	2,800
TOTAL			70,300		**34,705**
Out of Basin					
R	STAGECOACH EXPRESS	DETACHABLE QUAD	2,900	550	2,400
U	GALAXY	FIXED DOUBLE	5,440	1,020	1,200
V	DIPPER EXPRESS	DETACHABLE QUAD	4,910	1,140	2,400
W	COMET EXPRESS	DETACHABLE QUAD	3,580	880	2,400
Y	STAGECOACH 2	ELIMINATED	4,230	1,200	0
Z	WELLS FARGO	NOT APPROVED	5,710	1,900	0
DD	MOTT CANYON	FIXED DOUBLE	2,570	870	1,000
EE	ALDERMANS	NOT APPROVED	5,810	1,420	0
TOTAL			35,150		**9,400**
Grand Total			105,450		**44,105**

Notes:

* Approved to be built but not yet constructed (Lift J: 1,800 pph & Lift HH: 250 pph)

2.2 SKI TRAILS

Trails Approved in Master Plan 1996

The Master Plan (1996) approved widening of existing trails and the construction of new trails totaling 117 acres to the existing skiable terrain for a total of 745.1 acres at buildout. Table 2-6 summarizes the trails approved in the 1996 Master Plan by name, length, width, acreage and ability. To the extent possible, an attempt was made to add as much intermediate and advanced intermediate terrain as possible, and to de-emphasize the low intermediate terrain in order to improve the overall breakdown of ability levels and meet industry standards.

Trails Implemented since 1996

Since approval of the Master Plan in 1996, 8 new trails have been implemented, totaling 28.2 acres. Trails implemented include Sam's Dream (29A), Tamarack Return (29B), Cascade (82), Enchanted Forest II (32), Easy Street (81), Silver Spur (81A), Meteor (72) and Von Schmidt's – Gondola Meadow (83). Table 2-7 provides a breakdown of the trails implemented since 1996 by year, name, acreage, and ability level. Two other trails, Meteor II (75) and Von Schmidt's – Gondola Meadow II (83) have been approved but have not yet been implemented.

Existing Trails as of September 2004

As of September 2004, Heavenly provides 661.7 acres of ski trails, including the 4.4-acre Meteor II trail. Of the 661.7 acres, a variety of ability levels are provided including: 2% beginner, 10% novice, 26% low intermediate, 20% Intermediate, 6% advanced intermediate, and 36% expert. Table 2-8 summarizes the existing trail conditions (as of September 2004) by name, type, length, vertical and hourly capacity. Table 2-9 provides a breakdown of existing trails by ability level.

Table 2-6

Master Plan (1996) Facilities - Trails at Buildout

Master Plan '96 Trail #	Trail Name	*Length (feet)*	*Width (feet)*	*Acreage (acres)*	*Ability (skill class)*
California In Basin					
1	EAST BOWL -THE FACE	3,220	220	16.3	EXP
2	GUNBARREL	2,030	175	8.2	EXP
3	PISTOL	1,220	130	3.6	EXP
4	WEST BOWL	2,040	100	4.7	ADV
5	WORLD CUP	1,000	260	6.0	LOW
6	ROUND-A-BOUT	17,000	40	15.6	INT
7	PATSY'S	1,730	200	7.9	NOV
8	GROOVE	1,640	100	3.8	NOV
9	MAGGIES	5,210	70	8.4	NOV
10	CAT TRACK	1,070	40	1.0	LOW
11	SWING TRAIL	1,190	30	0.8	LOW
12	WATERFALL	760	200	3.5	ADV
13	MOMBO MEADOWS	1,190	150	4.1	LOW
14	MOMBO	1,700	25	1.0	LOW
14	LOWER MOMBO	1,200	90	2.5	LOW
15	LOWER POWDER BOWL	1,540	100	3.5	INT
16	RIDGE RUN	1,200	60	1.7	NOV
16	LOWER RIDGE RUN	4,610	150	15.9	NOV
17	WOODS TRAIL	2,960	25	1.7	NOV
18	BETTY'S SWING	1,080	30	0.7	INT
19	RIDGE BOWL	1,400	100	3.2	INT
19	RIDGE CHUTE	860	50	1.0	INT
20	BETTY'S RUN	3,680	150	12.7	INT
20	BETTY'S BOWL	400	180	1.7	EXP
21	LOWER BETTY'S	710	50	0.8	INT
22	BETTY'S CUTOFF	570	130	1.7	INT
23	CANYON	2,400	110	6.1	LOW
24	YAHOO (RUSUTSU)	1,860	100	4.3	LOW
25	LIZ'S	4,660	90	9.6	INT
26	STEAMBOAT	1,430	100	3.3	INT
27	UPPER ELLIE'S / ELLIE'S	4,490	120	12.4	ADV
27	ELLIE'S SWING	2,140	70	3.4	INT
28	SKYLINE TRAIL	3,100	40	2.8	LOW
29	(UPR.) CALIFORNIA TRAIL	2,900	130	8.7	LOW
29	CALIFORNIA TRAIL	6,010	40	5.5	LOW
29A	NEW - 49ER	1,420	125	4.1	NOV
30	PERFECT RIDE (WEST BOWL)	1,260	300	8.7	NOV
31	LOWER SKI SCHOOL	300	200	3.7	BEG
32	CHILDRENS SKI CENTER	180	400	0.9	BEG
33	PIONEER PLATTER PULL	700	150	2.4	BEG
34	LEARN TO SKI CENTER	400	150	1.4	BEG
64	49ER	1,710	40	1.6	LOW
67	VON SCHMIDT'S (1/4)	1,050	50	1.2	LOW
81	NEW (1/2) - EASY STREET	1,150	600	15.8	LOW
82	NEW - CASCADE	1,980	150	6.8	LOW
83	NEW - GONDOLA MEADOW	600	300	4.1	BEG
In Basin Total		101,670		**238.6**	
Out of Basin					
51	W. MILKY WAY BOWL (2/3)	1,800	900	37.2	EXP
51	E. MILKY WAY BOWL	0	0	0.0	EXP
53	DIPPER KNOB	1,730	30	1.2	INT
54	BIG DIPPER (1/5)	1,080	150	3.7	INT
57	DIPPER BOWL (1/2)	680	450	7.0	EXP
58	ORION (1/2)	1,820	200	8.4	LOW
61	SAND DUNES	1,610	80	3.0	INT
72	NEW (1/2)	780	130	2.3	ADV
75	NEW (1/3)	470	150	1.6	INT
Out of Basin Total		9,970		**64.4**	
California Total		111,640		**303.0**	

Table 2-6 (cont'd)

Master Plan (1996) Facilities - Trails at Buildout

Master Plan '96 Trail #	Trail Name	*Length* (feet)	*Width* (feet)	*Acreage* (acres)	*Ability* (skill class)
Nevada					
In Basin					
40	EDGEWOOD BOWL	3,000	250	17.2	NOV
44	OLYMPIC DOWNHILL	5,190	130	15.5	LOW
44		0	0	0.0	LOW
45	O75	1,330	90	2.7	INT
46	UPPER NORTH BOWL (2/3)	1,260	145	4.2	ADV
46	NORTH BOWL	3,770	90	7.8	ADV
65	STEVE'S	740	30	0.5	LOW
67	VON SCHMIDT'S (1/4)	1,050	50	1.2	LOW
68	BOULDER SKI SCHOOL	700	175	2.8	BEG
81	NEW (1/2)	1,150	600	15.8	LOW
In Basin Total		18,190		**67.8**	
Out of Basin					
41	WAY HOME	9,090	30	6.3	LOW
41	LOWER WAY HOME	1,900	120	5.2	LOW
41	STAGECOACH-W.H.	0	0	0.0	LOW
42	(LOWER) STAGECOACH	4,500	120	12.4	INT
43	(UPPER) STAGECOACH	1,810	100	4.2	INT
44	OLYMPIC DOWNHILL (2/5)	3,460	130	10.3	LOW
47	(UPPER) PEPI'S	3,500	50	4.0	LOW
48	CROSSOVER	4,500	65	6.7	LOW
48	(LOWER) CROSSOVER	0	0	0.0	LOW
49	PERIMETER	5,870	100	13.5	LOW
50	GALAXY	4,900	90	10.1	LOW
51	W. MILKY WAY BOWL (1/3)	900	900	18.6	EXP
51	E. MILKY WAY BOWL	0	0	0.0	EXP
52	UPPER PERIMETER (RIM TRAIL)	3,280	50	3.8	EXP
54	BIG DIPPER (4/5)	4,300	150	14.8	INT
54	LOWER BIG DIPPER (RETURN)	1,600	100	3.7	INT
55	ORION'S BELT	580	80	1.1	LOW
56	ARIES	920	60	1.3	INT
57	DIPPER BOWL (1/2)	680	450	7.0	EXP
58	ORION (1/2)	1,820	200	8.4	LOW
59	LOWER ORION	1,590	80	2.9	LOW
60	JACK'S	1,080	120	3.0	INT
62	LITTLE DIPPER	2,600	175	10.4	INT
63	COMET	3,250	190	14.2	LOW
66	PONDEROSA (BONANZA BOWL)	2,160	80	4.0	INT
66a	EAST PEAK	2,150	80	3.9	INT
67	VON SCHMIDT'S (1/4)	2,100	50	2.4	INT
72	NEW (2/3)	780	130	2.3	ADV
73	NEW	3,280	30	2.3	ADV
75	NEW (2/3)	940	150	3.2	ADV
76	NEW	3,390	150	11.7	ADV
77	NEW	2,570	150	8.8	ADV
79	MOTT CANYON	2,000	2000	91.8	EXP
79	KILLEBREW	1,900	1000	43.6	EXP
86	NEW (AA #3)	2,100	150	7.2	ADV
87	NEW (OLD WELLS FARGO)	4,190	150	14.4	ADV
89	NEW (WELLS FARGO)	5,580	30	3.8	EXP
91	NEW (L. OLYMPIC)	3,760	150	12.9	EXP
Out of Basin Total		99,030		**374.3**	
Nevada Total		117,220		**442.1**	
Grand Total		228,860		**745.1**	

Table 2-7

Trails Implemented Since Master Plan (1996) Adoption

Year	Master Plan '96 Trail Name	*Acreage (acres)*	*Ability (skill class)*
1997			
29A	SAM'S DREAM	4.3	LOW
29B	TAMARACK RETURN	0.7	LOW
82	CASCADE	7.8	LOW
1998			
	NONE		
1999			
	NONE		
2000			
32	ENCHANTED FOREST II	0.9	BEG
81	EASY STREET (UPPER PORTION)	3.4	LOW
2001			
72	METEOR	5.7	INT
*75	METEOR II	4.4	ADV
2002			
	NONE		
2003			
81	EASY STREET (LOWER PORTION)	3.5	BEG
83	VON SCHMIDT'S TEACHING AREA - CA	1.7	BEG
*83	VON SCHMIDT'S TEACHING AREA - NV	1.6	BEG
81A	SILVER SPUR (LOWER PORTION)	0.2	BEG
2004			
	NONE		

Notes:

* Approved to be constructed but not yet implemented

Table 2-8

Existing Trails Summary - September 2004

Master Plan '96 Trail #	Existing '04 Trail #	Trail Name	*Length* (feet)	*Width* (feet)	*Acreage* (acres)	*Ability* (skill class)
California						
In Basin						
1	B1	EAST BOWL -THE FACE	3,220	220	16.3	EXP
2	B2	GUNBARREL	2,030	175	8.2	EXP
3	B3	PISTOL	1,220	130	3.6	EXP
4	B4	WEST BOWL	2,040	100	4.7	ADV
5	D1	WORLD CUP	1,000	260	6.0	LOW
6	1	ROUND-A-BOUT	17,000	40	15.6	INT
7	E1	PATSY'S	1,730	200	7.9	NOV
8	E2	GROOVE	1,640	100	3.8	NOV
9	G1	MAGGIE'S	5,210	70	8.4	NOV
10	G2	CAT TRACK	1,070	40	1.0	LOW
11	G3	SWING TRAIL	1,190	30	0.8	LOW
12	G4	WATERFALL	760	200	3.5	ADV
13	G5	MOMBO MEADOWS	1,190	150	4.1	LOW
14	G6	MOMBO	1,700	25	1.0	LOW
14	G7	LOWER MOMBO	1,200	90	2.5	LOW
15	G8	POWDER BOWL	1,540	100	3.5	INT
16	2	RIDGE RUN	1,200	60	1.7	NOV
16	3	LOWER RIDGE RUN	4,610	150	15.9	NOV
17	H1	WOODS TRAIL	2,960	25	1.7	NOV
18	H2	BETTY'S SWING	1,080	30	0.7	INT
19	H3	RIDGE BOWL	1,400	100	3.2	INT
19	H4	RIDGE CHUTE	860	50	1.0	INT
20	H5	HIGH ROLLER (BETTY'S RUN)	3,680	150	12.7	INT
20	H6	DOUBLE DOWN (BETTY'S BOWL)	400	180	1.7	EXP
21	H7	LOWER BETTY'S	710	50	0.8	INT
22	H8	BETTY'S CUTOFF	570	130	1.7	INT
23	H9	CANYON/SKY CANYON	2,400	110	6.1	LOW
24	H10	JACKPOT (RUSUTSU)	1,860	100	4.3	LOW
25	I1	LIZ'S	4,660	90	9.6	INT
26	H11	HIGH ROLLER (STEAMBOAT)	1,430	100	3.3	INT
27	I3	UPPER ELLIE'S / ELLIE'S	4,490	120	12.4	ADV
27	I2	ELLIE'S SWING	2,140	70	3.4	INT
28	4	SKYLINE TRAIL	3,100	40	2.8	LOW
29	GG1	UPPER CALIFORNIA TRAIL	2,900	130	8.7	LOW
29	5	CALIFORNIA TRAIL	6,010	40	5.5	LOW
*29A	GG2	SAM'S DREAM	1,500	125	4.3	LOW
*29B	GG3	TAMARACK RETURN	450	75	0.8	LOW
30	K1	POMA TRAIL	1,260	300	8.7	NOV
30	K2	FIRST RIDE	500	150	1.7	BEG
31	L1	LOWER SKI SCHOOL	500	200	2.3	BEG
*32	M1	ENCHANTED FOREST II	390	100	0.9	BEG
33	N1	PIONEER TRAINING AREA	700	150	2.4	BEG
34	O1	LEARN TO SKI CENTER	400	150	1.4	BEG
64	GG5	49ER	1,710	40	1.6	LOW
67	10	VON SCHMIDT'S (1/4)	1,050	50	1.2	LOW
*81	HH1	EASY STREET (1/2)	750	200	3.4	LOW
*82	GG6	CASCADE	1,980	175	8.0	LOW
*83	11	VON SCHMIDT'S - GONDOLA MEADOW	600	125	1.7	BEG
In Basin Total			**101,390**		**226.2**	
Out of Basin						
51	V1	MILKY WAY BOWL (2/3)	1,800	900	37.2	EXP
53	V3	DIPPER KNOB	1,730	30	1.2	INT
54	V4	BIG DIPPER (1/5)	1,080	150	3.7	INT
57	V7	DIPPER BOWL (1/2)	680	450	7.0	EXP
58	V8	ORION (1/2)	1,820	200	8.4	LOW
61	GG4	SAND DUNES	1,610	80	3.0	INT
*72	V10	METEOR (1/2)	950	130	2.8	INT
**75	V11	METEOR II (1/3)	500	120	1.4	ADV
Out of Basin Total			**10,170**		**64.7**	
California Total			**111,560**		**290.9**	

Notes:
* All or partially implemented since adoption of the Master Plan in 1996
** Approved to be implemented but not yet constructed
NC not considered in the Master Plan 1996

Table 2-8 (cont'd)

Existing Trails Summary - September 2004

Master Plan '96 Trail #	Existing '04 Trail #	Trail Name	*Length* (feet)	*Width* (feet)	*Acreage* (acres)	*Ability* (skill class)
Nevada						
In Basin						
40	Q1	BOULDER (EDGEWOOD) BOWL	3,000	250	17.2	NOV
44	S1	OLYMPIC DOWNHILL (3/5)	5,190	130	15.5	LOW
45	S2	BOULDER CHUTE (O75)	1,330	90	2.7	INT
46	S3	NORTH BOWL	3,770	90	7.8	ADV
46	S4	UPPER NORTH BOWL (2/3)	1,260	145	4.2	ADV
65	9	STEVE'S	740	30	0.5	LOW
67	10	VON SCHMIDT'S (1/4)	1,050	50	1.2	LOW
68	X1	BOULDER SKI SCHOOL	700	175	2.8	BEG
*81	HH1	EASY STREET (1/2)	760	200	3.5	LOW
*83	HH2	VON SCHMIDT'S - GONDOLA MEADOW II	300	230	1.6	BEG
In Basin Total			**17,800**		**57.0**	
Out of Basin						
41	6	NEVADA TRAIL (WAY HOME)	9,090	30	6.3	LOW
41	7	LOWER NEVADA TRAIL (WAY HOME)	1,900	120	5.2	LOW
42	R1	STAGECOACH	4,500	120	12.4	INT
43	R2	UPPER STAGECOACH	1,810	100	4.2	INT
44	S1	OLYMPIC DOWNHILL (2/5)	3,460	130	10.3	LOW
47	8	PEPI'S	3,500	50	4.0	LOW
48	S5	CROSSOVER	4,500	65	6.7	LOW
49	U1	PERIMETER	5,870	100	13.5	LOW
50	U2	GALAXY	4,900	90	10.1	LOW
51	V1	MILKY WAY BOWL (1/3)	900	900	18.6	EXP
52	V2	MILKY WAY	3,280	50	3.8	EXP
54	V4	BIG DIPPER (4/5)	4,300	150	14.8	INT
54	V5	LOWER DIPPER RETURN	1,600	100	3.7	INT
55	V6	ORION'S BELT	580	80	1.1	LOW
56	W1	ARIES	920	60	1.3	INT
57	V7	DIPPER BOWL (1/2)	680	450	7.0	EXP
58	V8	ORION'S (1/2)	1,820	200	8.4	LOW
59	V9	LOWER ORION'S	1,590	80	2.9	LOW
60	W2	JACK'S	1,080	120	3.0	INT
62	W3	LITTLE DIPPER	2,600	175	10.4	INT
63	W4	COMET	3,250	190	14.2	LOW
66	S6	PONDEROSA (BONANZA BOWL)	2,160	80	4.0	INT
66a	S7	BONANZA (EAST PEAK)	2,150	80	3.9	INT
67	10	VON SCHMIDT'S (1/4)	2,100	50	2.4	INT
*72	V10	METEOR (1/2)	985	130	2.8	INT
**75	V11	METEOR II (2/3)	985	130	2.9	ADV
79	DD1	MOTT CANYON	2,000	2000	91.8	EXP
79	DD2	KILLEBREW	1,900	1000	43.6	EXP
*81A	HH3	SILVER SPUR	450	50	0.5	LOW
Out of Basin Total			**74,860**		**313.8**	
Nevada Total			**92,660**		**370.8**	
Grand Total			**204,220**		**661.7**	

Notes:
* All or partially implemented since adoption of the Master Plan in 1996
** Approved to be implemented but not yet constructed
NC not considered in the Master Plan 1996

Table 2-9

Existing Ski Trail Classification - September 2004

CA and NV

Ability Level	Acreage CA	Acreage NV	Acreage Total	Percent CA	Percent NV	Percent Total	Industry Standard
Beginner	12.3	2.3	14.6	4%	1%	2%	2%
Novice	48.1	17.2	65.3	16%	5%	10%	13%
Low Intermediate	70.1	103.9	174.0	24%	28%	26%	20%
Intermediate	64.9	65.7	130.6	22%	18%	20%	35%
Advanced Intermediate	23.5	14.9	38.4	8%	4%	6%	20%
Expert	74.0	164.8	238.8	25%	45%	36%	10%
Totals	292.9	368.8	661.7	100%	100%	100%	100%

In and Out of Basin

Ability Level	Acreage In	Acreage Out	Acreage Total	Percent In	Percent Out	Percent Total	Industry Standard
Beginner	14.6	0.0	14.6	5%	0%	2%	2%
Novice	65.3	0.0	65.3	23%	0%	10%	13%
Low Intermediate	82.4	91.6	174.0	29%	24%	26%	20%
Intermediate	58.2	72.4	130.6	21%	19%	20%	35%
Advanced Intermediate	32.6	5.8	38.4	12%	2%	6%	20%
Expert	29.8	209.0	238.8	11%	55%	36%	10%
Totals	282.9	378.8	661.7	100%	100%	100%	100%

2.3 SUMMER USES

Summer Uses Approved in Master Plan 1996

The Master Plan (1996) approved facilities to serve approximately 2,200 persons a day during the summer months. Approved activities are shown in the table below. Heavenly estimated that the uses would be broken out as follows: sightseeing/hiking (85 percent); restaurant dining (12 percent); fishing at East Peak Lake (3 percent). These uses will be accessed predominantly by the gondola with exception of the fishing, which is accessed primarily from the Stagecoach base area.

Hiking was originally approved in 1996 to occur on the Tahoe Rim Trail and Tahoe Vista Trail, but hikers are free to use onsite roadways which are maintained by Heavenly for operations and maintenance purposes. Roads which are experiencing erosion problems or have been closed, as defined by the CWE analysis, will be signed as “off limits for erosion control purposes”.

In the Master Plan (1996), the East Peak Lake area was to be used for all horseback activities. The lake will also be available for fishing by permit issued from Heavenly. East Peak summer uses were to be accessed primarily from the Stagecoach base area.

Regular summer activities and special events are approved to occur at the top of the Gondola. Activities and events may include outdoor recreation uses, food & beverage opportunities and live music, concerts, conferences or other social activities. The Top of the Tram offered these types of events but is no longer to be used for summer activities. Following the development of the top of the Gondola facilities, concert sound levels are regulated to comply with TRPA PAS noise levels. Sound levels are to be controlled at the concert mixing board to comply with a pre-determined dB level to ensure CNEL compliance at the PAS boundary. As required by mitigation measure 7.5-25 (Master Plan Chapter 7), Heavenly shall not conduct any summer concerts at the Gondola Top Station prior to August 1. This prohibition was recommended in order to allow most local resident birds to complete fledging and minimize the potential for nest failure.

Table 2-10 summarizes summer use activities approved in the Master Plan (1996) by activity, description of use and location.

Table 2-10

Master Plan (1996) Facilities - Summer Uses at Buildout

Activity	Description of Use	Access/Location
Hiking	Unguided hiking on mountain - Tahoe Rim Trail (TRT) and Tahoe Vista trail access	Gondola/roadways on mountain
Horseback Riding	Horse and hay rides on existing roads. Stable located below East Peak Lake (out of basin)	Gondola using Heavenly trails and Nevada Base (TRT) areas/Von Schmidts Flat & Nevada trails
Wildlife Viewing/ Interpretive Walks	Guided by USDA Forest Service or Heavenly staff persons	Gondola/hiking trails
Camp Activities	Private organizations use of Heavenly facilities at East Peak Lake	Gondola/East Peak Lake (from TRT)
Fishing	Guided tours at East Peak Lake	Gondola/East Peak Lake (from TRT)
Restaurant at Gondola Mid-Station	Full service restaurant and sight seeing overlooking Lake Tahoe	Gondola
Von Schmidt's Flats Events	Daytime special use events utilizing facilities at Gondola Top Station	Gondola

Summer Uses Implemented since 1996

Since approval of the Master Plan in 1996, most summer uses and activities have operated as approved or have not been implemented. No changes or additions to the approved summer uses have been made.

Existing Summer Uses as of September 2004

As of September 2004, the predominant summer use is found at the Top of the Gondola area. Sight seeing, outdoor food service and hiking are the primary activities offered by Heavenly. Sightseeing occurs primarily at

the Gondola Mid-Station Observation Deck. Café Blue, a walk-up food and beverage service, is located at the Observation Deck. Adventure Peak Grill located at the Top of the Gondola offers outdoor barbecue-themed lunches. A seasonal climbing wall is set up near Adventure Peak Grill. Hiking now takes place on existing summer maintenance roads leaving from the Top of the Gondola. The Tahoe Vista Trail, a 1.05 mile loop trail that starts at the Top of Tram is still used, although with less frequency than previously. The Tahoe Rim Trail passes through the existing ski area beginning at the Stagecoach Base as it extends for 150 miles around the rim of the Lake Tahoe Basin and connects with the Pacific Crest Trail.

Mountain bikes are not permitted on the hiking trails but are allowed on existing roads on the mountain. However, mountain bikes are not encouraged by Heavenly. At this time, Heavenly has no commercial mountain bike activities onsite and there are presently no horseback activities or facilities in place. ATVs are not allowed for recreational use and are permitted only for maintenance needs on the mountain. Table 2-11 summarizes existing summer use activities as of September 2004 by activity, description of use, and location.

Table 2-11

Existing Summer Uses Summary - September 2004

Activity	Description of Use	Access/Location
Hiking	Unguided hiking on mountain - Tahoe Rim Trail (TRT) and Tahoe Vista trail access	Gondola/roadways and named trails on mountain
Horseback Riding	Riding happens only on existing roads and the Tahoe Rim Trail (TRT)	Access through Stagecoach Base Tahoe Rim Trail (TRT)
Wildlife Viewing/ Interpretive Walks & Talks	Led by USDA Forest Service or Heavenly staff persons	Gondola/hiking trails Mid-Station Observation Deck
Adventure Peak Grill	Outdoor barbecue serving lunch and snacks at gondola top station	Gondola
Adventure Peak	Climbing wall at gondola top station	Gondola
Sightseeing, Café Blue and Gondola Sports	Panoramic sightseeing, photography, snack bar and mountain related retail	Gondola and Mid-Station Observation Deck

2.4 LODGE FACILITIES

Lodge Facilities Approved in Master Plan 1996

Commercial uses were approved for the Gondola Mid and Top Stations. The Master Plan (1996) approval included a restaurant and a Lake Tahoe observation deck at the Gondola Mid-Station. The Top Station was to include a restaurant, ticket offices, and summer recreation information booths. The commercial square footage anticipated for these uses was to total approximately 33,750 square feet (9,750 for the Mid Station and 24,000 for the Top Station). Legally existing commercial floor area (CFA) was to be verified by the TRPA.

In addition to the year-round gondola facilities, the Master Plan included the replacement or remodeling of all existing lodge facilities. For a further discussion of the approved lodge facilities, please refer to Chapter 4, Development Areas. Table 2-12 summarizes Master Plan (1996) lodges by physical location. Table 2-13 summarizes the Master Plan (1996) lodges by name, seats available and use breakdown.

Table 2-12

Master Plan (1996) Facilities - Lodge Locations

Name	Location
In Basin	
California Lodge	Base of Lift B, California Side
Monument Peak Lodge	Top of Lift A (Old Tramway), California Side
Sky Meadow Lodge	Base of Lift I, California Side
Boulder Lodge	Base of Lift Q, Nevada Side
New Gondola Top Station	Top of Lift II, California Side
New Mid-Station Restaurant	3000 ft. from top of Gondola, California side
Out of Basin	
Stagecoach Lodge	Base of Lift R, Nevada Side
East Peak Lodge	Base of Lift W, Nevada Side

Table 2-13

Master Plan (1996) Facilities - Lodge Breakdown by Use (sq. ft.) at Buildout

	California Base	*Monument Peak Lodge*	*Gondola Mid Station*	*Gondola Top Station*	*Boulder Base*	*East Peak Lodge*	*Stagecoach Base*	*totals*
FOOD SERVICE	27,500'	6,100'	9,750'	21,575'	8,450'	26,838'	5,775'	131,688'
SEATS	1,400	375	200	900	103	1,000	256	5,134
TICKET SALES	2,000'	0'	0'	900'	1,200'	0'	400'	4,500'
COMMERCIAL	10,000'	0'	0'	8,200'	0'	990'	1,200'	20,390'
RESTROOMS	3,600'	1,000'	0'	1,800'	440'	1'860'	800'	11,450'
ADMIN. OFFICES	10,000'	0'	0'	0'	750'	0'	2,500'	13,250'
SKI RENTAL	10,000'	0'	0'	0'	0'	0'	0'	10,000'
SKI SCHOOL	7,000'	400'	0'	0'	3,100'	0'	0'	10,500'
EMPLOYEE CENTEF	10,000'	0'	0'	0'	3,400'	0'	0'	13,400'
ACCESS AREAS	0,	1,400'	0'	2,450'	0'	0'	0'	3,850'
GONDOLA			3,325'	14,250'				17,575'
TOTALS	**80,100'**	**8,900'**	**13,075'**	**49,175'**	**17,340'**	**29,688'**	**10,675'**	**236,603'**

Existing Lodge Facilities – September 2004

Since approval of the Master Plan in 1996, no new lodge facilities were developed, however, nearly every existing lodge has been remodeled. Table 2-14 summarizes lodge improvements implemented since Master Plan (1996) adoption by the lodge name, location, year and description of improvements. In 2002, TRPA verified 19,977 square feet of existing commercial floor area (CFA) at the top of the tram. Since 1996, approximately 1,328 square feet of CFA has been relocated from the top of the tram to the top of the gondola and gondola mid-station as a condition of specific project approvals. In 2000, implementation of the Gondola project included a new base station and resort entry point located in Heavenly Village. A new day lodge and terminal at the top of the gondola were approved as part of the project, however, only the gondola terminal and a small maintenance facility were constructed (phase 1A). Table 2-15 summarizes existing lodge facilities as of September 2004 by name, seats available, sq. footage and use breakdown.

Table 2-14

Lodge Improvements Implemented Since Master Plan (1996) Adoption

Lodge Name	Location	Year	*Description of Improvements*
California Main Lodge	California	1998	Add new day Care facility, remodel children's ski school, expand rental shop, add real estate sales Discovery Gallery (converted to snowboard retail shop in 2003)
		2002	Replace ticket booths and add new exterior ticket canopy, remodel food & beverage seating area and bar, remodel ticket lobby restrooms Expand retail shop
		2004	Install ADA platform lifts
Lakeview Lodge (formerly Top of the Tram)	California	2003	Remodel cafeteria scramble, remodel seating areas Remove exterior stairs, redesign entrance
Snow Beach (formerly Patsy's Hut)	California	2004	Remodel exterior façade
Sky Deck	California	2003	Remodel exterior façade
East Peak Lodge	Nevada	2002	Remodel cafeteria scramble remodel seating areas
		2004	Add roof to upper deck, add architectural features to lower deck, add entrances to both decks, construct restrooms on lower deck, add continuous windscreen to both decks, remodel BBQ & bar areas on the lower deck
Stagecoach Lodge	Nevada	2002	Remodel cafeteria scramble remodel seating areas
		2004	Install ADA lift & restroom
Boulder Lodge	Nevada	2004	Install ADA lift
Gondola Base Station	California	2000	Construct new base station terminal, ticket windows & retail store
Gondola Mid Station	California	2000	Construct new mid-station terminal & observation deck
		2002	construct new retail store
		2002	add Café Blue service window
Gondola Top Station	California	2000	Construct new top station terminal
		2003	add outdoor food & beverage service and seating area
		2004	Install elevator

Table 2-15

Existing Lodge Breakdown by Use (sq.ft.) - September 2004

	California Base	Lakeview Lodge (Top of Tram)	Gondola Base Station	Gondola Mid Station*	Gondola Top Station	Boulder Base	East Peak Lodge	Stagecoach Base	Patsy's Hut	Sky Deck	totals	
SEATS												
indoor	416	274	0	0	0	130	140	100	0	0	1,060	indoor seats
outdoor	130	102	0	72	192	50	270	104	60	270	1,250	outdoor seats
FOOD SERVICE	16,104	13,693	0	188	3,147	4,757	14,186	6,266	604	8,907	67,852	sq. feet
TICKET SALES	1,181	0	488	0	0	105	0'	167	0	0	1,941	sq. feet
ACCESSORY RETAIL	4,789	62	672	600	384	387	0	0	0	0	6,894	sq. feet
RESTROOMS	2,285	915	0	520	480	555	806	554	470	1,005	7,590	sq. feet
ADMINISTRATION	2,836	318	112	0	0	282	66	3,329	0	348	7,291	sq. feet
SKI RENTAL/REPAIR	6,885	0'	0	0	0	773	0	792	0	0	8,450	sq. feet
SKI SCHOOL/PATROL	12,742	53	195	0	0	1,722	0'	0'	0	0	14,712	sq. feet
EMPLOYEE FACILITIES	3,663	0'	216	0	205	34	212	0'	0	0	4,330	sq. feet
PUBLIC LOCKERS/ ACCESS AREAS	1,213	0	0	13,000	384	913	0	514	0	0	16,024	sq. feet
GONDOLA TERMINAL/ EQUIPMENT			3,599	3,325	9,031						15,955	sq. feet
TOTALS	**51,698**	**15,041**	**5,282**	**17,633**	**13,631**	**9,528**	**15,270**	**11,622**	**1,074**	**10,260**	**151,039**	**sq. feet**

Notes:
* Indicates the square footage of gondola mid-station observation deck and associated walks.

Exterior Lighting

Exterior Lighting Approved in Master Plan 1996

The Master Plan approved all exterior lighting be designed in keeping with TRPA Design Review Guidelines Section7 and Exterior Lighting Standards 30.8, including the following standards:

1. Exterior lights shall not blink, flash or change intensity. String lights, building or roof line tube lighting, reflective or luminescent wall surfaces are prohibited.
2. Exterior lighting shall not be attached to trees except for the Christmas season.
3. Parking lot, walkway, and building lights shall be directed downward.
4. Fixture mounting height shall be appropriate to the purpose. The height shall not exceed the limitations set forth in Chapter 22.
5. Outdoor lighting shall be used for purposes of illumination only, and shall not be designed for, or used as, an advertising display. Illumination for aesthetic or dramatic purposes of any buildings or surrounding landscape projecting above the horizontal is prohibited.
6. The commercial operation of searchlights for advertising or any other purpose is prohibited.

7. Seasonal lighting displays and lighting for special events which could conflict with other provisions of this section may be permitted on a temporary basis pursuant to Chapter 7.

The Guidelines recommended that lighting be designed as an integral part of the architecture and landscape and that consistent overall lighting and overly bright lighting be avoided. The guidelines recommended overall principles for the design of parking lot lighting, the lighting of structures, and height standards. In general, lighting was to be directed downward and away from adjacent properties, cut-off shields were to be incorporated and lighting was not to cause glare or excessive spillage to adjacent sites. To avoid significant impacts, each of the approved plan's lighted areas were to be consistent with this section of the Guidelines.

In addition, exterior lighting for the Gondola Mid Station, Top Station and Monument Peak Lodge must be concealed from view off-site. Glare or spillage lighting shall not be evident from any lakeward vista point. If, when installed, exterior lighting is evident from below, it shall be re-designed to eliminate glare or spillage or be removed entirely. If exterior lighting is necessary for the illumination of walks or paths, luminaries was to be installed in low bollards, with light directed downward and toward buildings and should not be concealed from view from the lakeward side. Non-directional floodlights should not be installed at any location visible from the lakeward side. Spotlights may be installed if their source is concealed, and light spillage and glare is not evident from the lakeward side. As constructed, none of the buildings or ancillary structures or buildings "glow" when viewed from the lakeward side.

As required by mitigation measure 7.4-12 (Master Plan 1996 Chapter 7), Heavenly is not to construct or use bright directional lights during construction, or facility operations, within a 200-foot radius(or other distance determined to be adequate by USFWS consultation) of known special-status bat roost sites. This prohibition is recommended in order to allow for the protection of special status bat roost sites which may be encountered within the Heavenly Ski Resort development boundary.

Exterior Lighting Implemented since 1996

Since approval of the Master Plan in 1996, the approved exterior lighting standards have been followed where applicable and no changes have occurred.

2.5 MAINTENANCE FACILITIES

Maintenance Facilities Approved in Master Plan 1996

The Master Plan (1996) approved maintenance facilities located at Kingsbury Grade, The Gondola Top Station and North Bowl for a total of 38,100 square feet. The new locations (Kingsbury Grade and The Gondola Top Station) for the two main maintenance buildings were chosen as being visually unobtrusive and as accessible. The Gondola Top Station was originally chosen because of its relative accessibility to both the California and Nevada sides for the grooming vehicles. The maintenance building at the Kingsbury Grade site is easily accessible to wheeled vehicles, and would remove the non-aesthetic use from the California Base Lodge. Table 2-16 summarizes the Master Plan (1996) approved maintenance facilities by location, use and square feet. Square footage of maintenance buildings shown in Table 2-16 does not include square footage for snowmaking. These were itemized separately in the snowmaking plan.

Table 2-16

Master Plan (1996) Facilities - Maintenance at Buildout

Location	Use	*Square Feet*
Kingsbury Grade Parking	Major maintenance, repair, storage, parts, supplies, office and lift maintenance.	18,000
Gondola Top Station	Remote storage, minor repair, fuel storage and lift maintenance.	20,000
North Bowl	Lift Maintenance	100
Square Footage Total		**38,100**

Maintenance Facilities Implemented since 1996

No changes to maintenance facilities have occurred since approval of the Master Plan in 1996.

Existing Maintenance Facilities – September 2004

Currently, maintenance facilities are located at the California Base, Top of Tram, West Bowl, East Peak, and Top of the Gondola for a total of 14,810 square feet. The California Base provides vehicle service and storage (7,500 square feet), Top of the Tram provides vehicle and lift maintenance (5,500 square feet), West Bowl provides lift maintenance (480 square feet), East Peak provides lift maintenance (500 square feet) and the Top of Gondola provides lift maintenance (830 square feet). Table 2-17 summarizes the existing maintenance facilities as of September 2004 by location, use and square feet.

Table 2-17

Existing Maintenance Facilities - September 2004

Location	Use	*Square Feet*
California Base	Vehicle Service and Storage	7,500
Top of the Tram	Over The Snow Vehicle Maintenance / Construction Vehicle Maintenance	5,500
West Bowl	Lift Maintenance	480
East Peak	Lift Maintenance	500
Top of Gondola	Lift Maintenance	830
Square Footage Total		**14,810**

2.6 TRANSPORTATION AND PARKING

Transportation and Parking Approved in Master Plan 1996

The Master Plan (1996) states that Heavenly will, if necessary, provide two-leveled structured parking at the California base area to maintain existing on-site parking capacities in order to accommodate a peak capacity of 22,625 skiers (125% of the 18,100 CCC). Existing offsite parking (400 spaces) at the California base area was to be discontinued upon construction and operation of the gondola and not replaced on-site. Along with the structured parking, it is desirable to maintain and enhance the skier shuttle service system. The shuttle and structured parking requirements are in turn made necessary by the fact that the creation of new parking spaces is not permitted either at the California or Nevada base areas.

Heavenly, in coordination with other resort developments, shall assist in the implementation of the Coordinated Transit System (CTS). This plan, referred to as the South Shore Transit Coordination /Expansion Study has been prepared by Leigh, Scott and Cleary, Inc. and was included in Appendix I of the Master Plan 1996. The addition of PAOTs at Heavenly is linked to CTS implementation through a Special Policy added to the Heavenly Plan Area Statements. Noise associated with the operation of the snow removal equipment in the parking lots is controlled with mitigation measures proposed in the Snow Removal Noise Mitigation Methods. This mitigation program was included in the Master Plan (1996) Chapter 7 - Mitigation and Monitoring Plan.

These measures require Heavenly to reduce the CNEL values to 1982 levels or the TRPA Plan Area Statement noise standards, whichever is less. To accomplish these levels, the measures recommend minimizing nighttime snow removal operations, and the construction of noise barriers along the perimeter of the parking lots. The

reduction in CNEL levels shall be reevaluated annually to ensure that Heavenly is implementing all possible measures to reduce CNEL values associated with snow removal operations.

Table 2-18 summarizes the Master Plan (1996) approved Heavenly skier shuttle system, and parking by location, number of spaces, and skier capacity.

Table 2-18

Master Plan (1996) Facilities - Parking at Buildout

Parking Capacity - Autos and Skiers

	California	*Boulder*	*Stagecoach*	*Kingsbury*	*Total*
Surface Parking Spaces	1,310	450	410	0	2,170
Offsite Parking Spaces	0	600	400	400	1,400
Structured Parking Spaces	400	0	0	0	400
Total Autos	1,710	1,050	810	400	3,970
Skiers Per Auto	2.8	2.8	2.8	2.8	2.8
Total Skiers	4,788	2,940	2,268	1,120	11,120

Parking and Shuttle Capacity

Ski Area Parking	11,120
Gondola	6,000
Ski Area Shuttle	3,800
Total	20,920

Ski Area Requirement for Shuttle System

Skiers to be Shuttled	3800
Number of Skiers per Bus	48
Sub-Total	79
Average Number of Trips per Hour	3
Sub-total	26
Access Periods (hours)	2
Number of Buses Required	13

Transportation and Parking Implemented since 1996

Since approval of the Master Plan in 1996, Heavenly has maintained and expanded its free skier shuttle service. The system has been expanded to include employee shuttle service. Both elements have been integrated into BlueGo (formerly known as CTS). The amount of parking for employees that is available at the Kingsbury off-site parking has been reduced due to the disposal of a portion of the land. All other parking capacities and locations remain as shown in the 1996 approved Master Plan.

Existing Transportation and Parking as of September 2004

As of September 2004, Heavenly provides public parking within the ski area at the California Base (1,710 spaces), Boulder Base (1,050 spaces), Stagecoach Base (810 spaces) and Kingsbury (200 spaces). An additional 422 spaces are located in the City-owned Heavenly Village parking structure. Including the Heavenly Village parking structure, the 4,192 total spaces accommodate approximately 11,738 persons assuming there are 2.8 persons per vehicle.

Off-site employee parking is provided during peak periods at satellite locations under permit from the City of South Lake Tahoe along the upper section of Ski Run Boulevard and on Heavenly-Owned Land located outside the Lake Tahoe Basin at the top of Kingsbury Grade. Employees are shuttled to the California Base from the Ski Run parking and to the Boulder/Stagecoach Bases from the Kingsbury lot. Table 2-19 summarizes the existing Heavenly skier shuttle system as of September 2004, as well as parking by location, number of spaces, and skier capacity.

Heavenly provides free shuttle bus service for guests and employees with an average daily capacity of 3,250 persons and a peak day capacity of 4800 persons using 20 vehicles. Heavenly owns the majority of buses used in the fleet and operates under contract with Area Transit Management (ATM). There are five service routes in the South Lake Tahoe/Stateline commercial core area, including the Red, Orange, Yellow, Green and Blue routes. The Red Route operates along the Highway 50 corridor west of Ski Run Boulevard, stops at numerous lodging properties and takes guests to the gondola via the Heavenly Village Transit Center. The Orange route is a gondola express route between the base of the gondola and the California Base. The Yellow route operates in the Stateline commercial and motel core, and takes guests to the gondola base. The Green Route operates in the Stateline casino core area and takes guests to the gondola. The Blue Route also operates in the Stateline casino core area and the Heavenly Village Transit Center. It delivers guests to the Boulder Base and Stagecoach Base areas.

Heavenly also operates five fixed-route daily shuttles which serve employees in the early morning and evening hours. During operating hours, three of these shuttles service California guests from the lower California parking lot and Ski Run street parking to the California base. The two Nevada shuttles circulate between the Stagecoach and Boulder lodges, transporting guests and employees. Independent hotel shuttles, taxis, walk-ins, rental shuttles, and drop offs also combine to serve approximately 2,500 skiers.

Including the employee shuttles, which are now operated by ATM, use of the Heavenly shuttle system has increased since the Master Plan was adopted in 1996. The following ridership figures are provided:

Year	Passengers
1998/99	427,209
1999/00	426,704
2000/01	421,704
2001/02	391,936
2002/03	395,157
2003/04	*468,646

*includes operation of Heavenly employee shuttles by ATM

Heavenly maintains a helipad at the California Base on top of the vehicle maintenance building. The Forest Service has approved seven helipads for emergency evacuation of injured guests and for search and rescue. Four of the emergency helipads are located in California at Sky Meadows, Milky Way Bowl, top terminal of the Dipper lift, and Von Schmidt's Flats. Three of the emergency helipads are located in Nevada at East Peak Lake, base of Galaxy and the base of Mott Canyon. In cases of extreme life threatening emergencies, the helicopter may land for medical evacuation in other than approved helipads.

Table 2-19

Existing Parking Facilities - September 2004

Parking Capacity - Autos and Skiers

	California	*Boulder*	*Stagecoach*	*Kingsbury*	*Heavenly Village*	***Total***
Surface Parking Spaces	1,310	450	410	0	0	**2,170**
Offsite Parking Spaces	0	600	400	200	0	**1,200**
Structured Parking Spaces	400	0	0	0	422	**822**
Total Autos	1,710	1,050	810	200	422	**4,192**
Skiers Per Auto	2.8	2.8	2.8	2.8	2.8	**2.8**
Total Skiers	4,788	2,940	2,268	560	1,182	**11,738**

Parking and Shuttle Capacity

Ski Area Parking	11,738
Within Walking Distance of Gondola	6,000
Ski Area Shuttle	3,250
Total	20,988

Ski Area Requirement for Shuttle Bus System

Skiers to be Shuttled (Average Day)	3,250
Number of Skiers per Bus	40
Sub-Total	81
Average Number of Trips per Hour	3
Sub-total	27
Access Periods (hours)	2
Number of Buses Required	14

2.7 SNOWMAKING COVERAGE

Snowmaking Approved in Master Plan 1996

The total man-made snow coverage was approved to be 499 acres, which approximately doubles the existing system. A detailed analysis of the snowmaking system appeared in Chapter 5 of the Master Plan (1996) and under separate cover in the Heavenly Snowmaking Manual. Table 2-20 summarizes the 1996 Master Plan approved snow making coverage by trail, length, width, acreage, ability, acre feet of water required for complete coverage per acre/year, and total acre feet needed to achieve complete coverage.

Noise associated with the operation of the snowmaking system is controlled with mitigation measures proposed in the Snowmaking Noise Mitigation Methods for Base Areas. For upper mountain areas, the measures are included in the Master Plan (1996) Chapter 7 - Mitigation and Monitoring Plan. These measures included interim targets for CNEL reductions at the base areas. The 1996 approved reductions are as follows:

- 20 dB reduction from 1994/95 CNEL at Stagecoach Base in Year 1999;
- 25 dB reduction from 1994/95 CNEL at Boulder Base in Year 2001; and
- 10 dB reduction from 1994/95 CNEL in Year 1999, 15 dB reduction from 1994/95 CNEL in Year 2001, and goal of 35 dB reduction from 1994/95 CNEL in Year 2006 at California Base.

Snowmaking Implemented since 1996

Since approval of the Master Plan in 1996, snowmaking has been approved for implementation on nine new trails and one existing trail. Snowmaking has been implemented on runs 29, 29B, 30, 81, 81A & 82. It has been approved but not implemented yet on ski runs 29A, 72 & 83. Additional detailed information about snowmaking can be found in Chapter 5 – Snowmaking Plan. Table 2–21 summarizes snowmaking implemented since Master Plan (1996) adoption.

Existing Snowmaking as of September 2004

As of September 2004, Heavenly provides manmade snow coverage on 309.4 acres of ski trails (including snowmaking approved to be constructed but not yet implemented). This equates to 45% of the total trail acreage, with a maximum utilization of 989 acre feet of water per ski season. Of the 309.4 acres of trails covered by snowmaking, a variety of ability levels are accommodated including: 5% beginner, 28% novice, 41% low intermediate, 15% intermediate, 4% advanced intermediate and 8% expert.

A detailed analysis of the snowmaking system appears in Chapter 5. Table 2-22 summarizes the existing Heavenly snowmaking system as of September 2004 by coverage of trail, length, width, acreage and ability. Table 2-23 provides a breakdown of the existing trails covered by snowmaking by ability level. Figure 3-2, Existing and Proposed Snowmaking, identifies Heavenly's existing snowmaking coverage.

Table 2-20

Master Plan (1996) Facilities - Snowmaking at Buildout

Master Plan '96 Trail #	Trail Name	Length (feet)	Width (feet)	Snowmaking Acreage	Ability (skill class)	Acre ft / Acre (1)	Acre ft (2)	Change (acres) (3)	Change (acre ft) (4)
California									
In Basin									
1	EAST BOWL -THE FACE	3,220	220	16.3	EXP	5.0	81.3	0.0	0.0
2	GUNBARREL	2,030	175	8.2	EXP	5.0	40.8	0.0	0.0
3	PISTOL	1,220	130	3.6	EXP	5.0	18.2	3.6	18.2
4	WEST BOWL	2,040	100	4.7	ADV	5.0	23.4	4.7	23.5
5	WORLD CUP	1,000	260	6.0	LOW	2.7	16.1	0.0	0.0
6	ROUND-A-BOUT	17,000	40	15.6	INT	2.7	42.1	0.0	0.0
7	PATSY'S	1,730	200	7.9	NOV	2.7	21.4	0.0	0.0
8	GROOVE	1,640	100	3.8	NOV	2.7	10.2	3.8	10.3
9	MAGGIES	5,210	70	8.4	NOV	2.7	22.6	0.0	0.0
10	CAT TRACK	1,070	40	1.0	LOW	2.7	2.7	0.0	0.0
11	SWING TRAIL	1,190	30	0.0	LOW	0.0	0.0	0.0	0.0
12	WATERFALL	760	200	3.5	ADV	5.0	17.4	3.5	17.5
13	MOMBO MEADOWS	1,190	150	4.1	LOW	2.7	11.1	0.0	0.0
14	MOMBO	1,700	25	1.0	LOW	2.7	2.6	0.0	0.0
14	LOWER MOMBO	1,200	90	2.5	LOW	2.7	6.7	0.0	0.0
15	LOWER POWDER BOWL	1,540	100	3.5	INT	4.0	14.1	3.5	14.0
16	RIDGE RUN	1,200	60	1.7	NOV	2.7	4.5	0.0	0.0
16	LOWER RIDGE RUN	4,610	150	15.9	NOV	2.7	42.9	0.0	0.0
17	WOODS TRAIL	2,960	25	0.0	NOV	0.0	0.0	0.0	0.0
18	BETTY'S SWING	1,080	30	0.0	INT	0.0	0.0	0.0	0.0
19	RIDGE BOWL	1,400	100	0.0	INT	0.0	0.0	0.0	0.0
19	RIDGE CHUTE	860	50	0.0	INT	0.0	0.0	0.0	0.0
20	BETTY'S RUN	3,680	150	12.7	INT	2.7	34.2	12.7	34.3
20	BETTY'S BOWL	400	180	0.0	EXP	0.0	0.0	0.0	0.0
21	LOWER BETTY'S	710	50	0.0	INT	0.0	0.0	0.0	0.0
22	BETTY'S CUTOFF	570	130	0.0	INT	0.0	0.0	0.0	0.0
23	CANYON	2,400	110	6.1	LOW	2.7	16.4	0.0	0.0
24	YAHOO (RUSUTSU)	1,860	100	4.3	LOW	2.7	11.5	0.0	0.0
25	LIZ'S	4,660	90	9.6	INT	2.7	26.0	0.0	0.0
26	STEAMBOAT	1,430	100	3.3	INT	2.7	8.9	0.0	0.0
27	UPPER ELLIE'S / ELLIE'S	4,490	120	12.4	ADV	4.0	49.5	0.0	0.0
27	ELLIE'S SWING	2,140	70	3.4	INT	2.7	9.3	3.4	9.2
28	SKYLINE TRAIL	3,100	40	2.8	LOW	2.7	7.7	2.8	7.6
29	(UPR.) CALIFORNIA TRAIL	2,900	130	8.7	LOW	2.7	23.4	8.7	23.5
29	CALIFORNIA TRAIL	6,010	40	5.5	LOW	2.7	14.9	0.0	0.0
29a	SAM'S DREAM	1,420	125	4.1	NOV	4.0	16.3	4.1	16.4
30	PERFECT RIDE (WEST BOWL)	1,300	300	8.7	NOV	2.7	23.5	8.7	23.5
31	LOWER SKI SCHOOL	300	200	3.7	BEG	2.7	10.0	2.3	6.2
32	CHILDRENS SKI CENTER	180	400	0.9	BEG	2.7	2.4	-0.8	-2.2
33	PIONEER PLATTER PULL	700	150	2.4	BEG	2.7	6.5	2.4	6.5
34	LEARN TO SKI CENTER	400	150	1.4	BEG	2.7	3.7	0.0	0.0
64	49ER	1,710	40	1.6	LOW	4.0	6.3	1.6	6.4
67	VON SCHMIDT'S (1/4)	1,050	50	1.2	LOW	2.7	3.3	0.0	0.0
81	NEW (1/2) - BIG EASY	1,150	600	15.8	LOW	2.7	42.8	15.8	42.7
82	NEW - CASCADE	1,980	150	6.8	LOW	4.0	27.3	6.8	27.2
83	NEW - GONDOLA MEADOW	600	300	4.1	BEG	2.7	11.2	4.1	11.1
In Basin Total				**227.0**			**733.0**	**91.7**	**295.7**
Out of Basin									
51	W. MILKY WAY BOWL (2/3)	1,800	900	0.0	EXP	0.0	0.0	0.0	0.0
51	E. MILKY WAY BOWL	0	0	0.0	EXP	0.0	0.0	0.0	0.0
53	DIPPER KNOB	1,730	30	1.2	INT	2.7	3.2	1.2	3.2
54	BIG DIPPER (1/5)	1,080	150	3.7	INT	2.7	10.0	0.0	0.0
57	DIPPER BOWL (1/2)	680	450	0.0	EXP	0.0	0.0	0.0	0.0
58	ORION (1/2)	1,820	200	8.4	LOW	2.7	22.6	0.0	0.0
61	SAND DUNES	1,610	80	3.0	INT	2.7	8.0	3.0	8.0
72	NEW (1/2)	780	130	2.3	ADV	4.0	9.3	2.3	9.3
75	NEW (1/3)	470	150	1.6	INT	4.0	6.5	1.6	6.5
Out of Basin Total				**20.2**			**59.6**	**8.1**	**27.0**
California Total				**247.1**			**792.6**	**99.8**	**322.7**

Notes:
(1) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.
(2) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.
(3) Change from existing conditions (1996) to Master Plan (1996) build out.
(4) Additional water requirements of Master Plan (1996) from existing conditions (1996).

Table 2-20 (cont'd)

Master Plan (1996) Facilities - Snowmaking at Buildout

Master Plan '96 Trail #	Trail Name	Length (feet)	Width (feet)	Snowmaking Acreage	Ability (skill class)	Acre ft / Acre (1)	Acre ft (2)	Change (acres) (3)	Change (acre ft) (4)
Nevada									
In Basin									
40	EDGEWOOD BOWL	3,000	250	17.2	NOV	4.0	68.8	0.0	0.0
44	OLYMPIC DOWNHILL	5,190	130	15.5	LOW	2.7	41.8	0.0	0.0
44		0	0	0.0	LOW	0.0	0.0	0.0	0.0
45	075	1,330	90	2.7	INT	4.0	11.0	2.7	11.0
46	UPPER NORTH BOWL (2/3)	1,260	145	4.2	ADV	5.0	21.0	0.0	0.0
46	NORTH BOWL	3,770	90	7.8	ADV	5.0	38.9	7.8	38.9
65	STEVE'S	740	30	0.5	LOW	2.7	1.4	0.0	0.0
67	VON SCHMIDT'S (1/4)	1,050	50	1.2	LOW	2.7	3.3	0.0	0.0
68	BOULDER SKI SCHOOL	700	175	2.8	BEG	2.7	7.6	2.8	7.6
81	NEW (1/2)	1,150	600	15.8	LOW	2.7	42.8	15.8	42.8
In Basin Total				**67.8**			**236.6**	**29.1**	**100.3**
Out of Basin									
41	WAY HOME	9,090	30	6.3	LOW	2.7	16.9	6.3	17.0
41	LOWER WAY HOME	1,900	120	5.2	LOW	2.7	14.1	0.0	0.0
41	STAGECOACH-W.H.	0	0	0.0	LOW	0.0	0.0	0.0	0.0
42	(LOWER) STAGECOACH	4,500	120	12.4	INT	4.0	49.6	0.0	0.0
43	(UPPER) STAGECOACH	1,810	100	4.2	INT	4.0	16.6	4.2	16.8
44	OLYMPIC DOWNHILL (2/5)	3,460	130	10.3	LOW	2.7	27.9	0.0	0.0
47	(UPPER) PEPI'S	3,500	50	4.0	LOW	2.7	10.8	0.0	0.0
48	CROSSOVER	4,500	65	6.7	LOW	2.7	18.1	0.0	0.0
48	(LOWER) CROSSOVER	0	0	0.0	LOW	0.0	0.0	0.0	0.0
49	PERIMETER	5,870	100	13.5	LOW	2.7	36.4	13.5	36.5
50	GALAXY	4,900	90	10.1	LOW	2.7	27.3	10.1	27.3
51	W. MILKY WAY BOWL (1/3)	900	900	0.0	EXP	0.0	0.0	0.0	0.0
51	E. MILKY WAY BOWL	0	0	0.0	EXP	2.7	0.0	0.0	0.0
52	UPPER PERIMETER (RIM TRAIL)	3,280	50	0.0	EXP	2.7	0.0	0.0	0.0
54	BIG DIPPER (4/5)	4,300	150	14.8	INT	2.7	40.0	7.4	20.0
54	LOWER BIG DIPPER (RETURN)	1,600	100	3.7	INT	2.7	9.9	3.7	10.0
55	ORION'S BELT	580	80	1.1	LOW	2.7	2.9	1.1	3.0
56	ARIES	920	60	1.3	INT	2.7	3.4	1.3	3.5
57	DIPPER BOWL (1/2)	680	450	0.0	EXP	0.0	0.0	0.0	0.0
58	ORION (1/2)	1,820	200	8.4	LOW	2.7	22.6	0.0	0.0
59	LOWER ORION	1,590	80	2.9	LOW	2.7	7.9	0.0	0.0
60	JACK'S	1,080	120	0.0	INT	0.0	0.0	0.0	0.0
62	LITTLE DIPPER	2,600	175	10.4	INT	5.0	52.2	0.0	0.0
63	COMET	3,250	190	14.2	LOW	2.7	38.3	0.0	0.0
66	PONDEROSA (BONANZA BOWL)	2,160	80	4.0	INT	4.0	15.9	4.0	16.0
66a	EAST PEAK	2,150	80	3.9	INT	4.0	15.8	3.9	15.6
67	VON SCHMIDT'S (1/4)	2,100	50	2.4	INT	2.7	6.5	2.4	6.5
72	NEW (1/2)	780	130	2.3	ADV	4.0	9.3	2.3	9.2
73	NEW	3,280	30	2.3	ADV	4.0	9.0	2.3	9.2
75	NEW (2/3)	940	150	3.2	ADV	4.0	12.9	3.2	12.8
76	NEW	3,390	150	0.0	ADV	0.0	0.0	0.0	0.0
77	NEW	2,570	150	8.8	ADV	4.0	35.4	8.8	35.2
79	MOTT CANYON	2,000	2000	0.0	EXP	0.0	0.0	0.0	0.0
79	KILLEBREW	1,900	1000	0.0	EXP	0.0	0.0	0.0	0.0
86	NEW (AA #3)	2,100	150	0.0	ADV	0.0	0.0	0.0	0.0
87	NEW (OLD WELLS FARGO)	4,190	150	14.4	ADV	4.0	57.7	14.4	57.6
89	NEW (WELLS FARGO)	5,580	30	0.0	EXP	0.0	0.0	0.0	0.0
91	NEW (L. OLYMPIC)	3,760	150	12.9	EXP	2.7	35.0	12.9	34.8
Out of Basin Total				**183.8**			**592.5**	**101.8**	**331.0**
Nevada Total				**251.6**			**829.1**	**131.0**	**431.3**
Grand Total				**498.7**			**1621.7**	**230.9**	**754.0**

Notes:

(1) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(2) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(3) Change from existing conditions (1996) to Master Plan (1996) build out.

(4) Additional water requirements of Master Plan (1996) from existing conditions (1996).

Table 2-21

Snowmaking Implemented Since Master Plan (1996) Adoption

Year	Master Plan '96 Trail Name	*Acreage (acres)*	*Ability (skill class)*
1997			
29	UPPER CALIFORNIA TRAIL	7.4	LOW
29B	TAMARACK RETURN	0.8	LOW
1998			
30	FIRST RIDE	8.7	NOV
1999			
	NONE		
2000			
	NONE		
2001			
82	CASCADE	8.0	LOW
2002			
	NONE		
2003			
	NONE		
2004			
81	EASY STREET	6.9	LOW
81A	SILVER SPUR	0.5	LOW
APPROVED BUT NOT INSTALLED			
64	49ER	1.6	NOV
72	METEOR	5.7	ADV
83	VON SCHMIDT'S TEACHING AREA	4.1	BEG

Table 2-22

Existing Snowmaking Facilities - September 2004

Master Plan '96 Trail #	Existing '04 Trail #	Trail Name	*Length (feet)*	*Width (feet)*	*Acreage (acres)*	*Ability (skill class)*	*Acre ft. / Acre (1)*	*Acre ft. (2)*	*Change from Master Plan '96 Approved Acres (3)*	*Change from Master Plan '96 Approved Acre ft. (4)*
California										
In Basin										
1	B1	EAST BOWL -THE FACE	3,220	220	16.3	EXP	5	81.3	0	0
2	B2	GUNBARREL	2,030	175	8.2	EXP	5	40.8	0	0
5	D1	WORLD CUP	1,000	260	6.0	LOW	2.7	16.1	0	0
6	1	ROUND-A-BOUT	17,000	40	15.6	NOV	2.7	42.1	0	0
7	E1	PATSY'S	1,730	200	7.9	NOV	2.7	21.4	0	0
9	G1	MAGGIES	5,210	80	8.4	NOV	2.7	22.7	0	0
10	G2	CAT TRACK	1,070	40	1.0	LOW	2.7	2.7	0	0
13	G5	MOMBO MEADOWS	1,190	170	4.1	LOW	2.7	11.1	0	0
14	G6	MOMBO	1,700	25	1.0	LOW	2.7	2.6	0	0
14	G7	LOWER MOMBO	1,200	90	2.5	LOW	2.7	6.7	0	0
16	2	RIDGE RUN	1,200	60	1.7	LOW	2.7	4.5	0	0
16	3	LOWER RIDGE RUN	4,610	155	15.9	NOV	2.7	42.9	0	0
23	H9	CANYON - SKY CANYON	2,400	128	6.1	LOW	2.7	16.5	0	0
24	H10	JACKPOT (RUSUTSU)	1,860	125	4.3	LOW	2.7	11.6	0	0
25	I1	LIZ'S	4,630	100	9.6	INT	2.7	25.9	0	0
26	H11	STEAMBOAT	1,430	130	3.3	INT	2.7	8.9	0	0
27	I3	UPPER ELLIE'S / ELLIE'S	4,490	130	12.4	ADV	4	49.6	0	0
*29	GG1	UPPER CALIFORNIA TRAIL	2,900	145	7.4	LOW	2.7	20.0	-1.3	-3.4
29	5	CALIFORNIA TRAIL	6,010	50	5.5	LOW	2.7	14.9	0	0
**29A	GG2	SAM'S DREAM	1,500	125	4.3	LOW	4	17.2	0	0
*29B	GG3	TAMARACK RETURN	650	50	0.8	LOW	2.7	2.2	0.8	2.0
*30	K1	PERFECT RIDE (WEST BOWL)	1,260	300	8.7	NOV	2.7	23.4	0	0
31	L1	ENCHANTED FOREST	500	200	2.3	BEG	2.7	6.2	-1.4	-3.8
32	M1	ENCHANTED FOREST II	390	100	0.9	BEG	2.7	2.4	0	0
33	N1	PIONEER PLATTER PULL	700	150	2.4	BEG	2.7	6.5	0	0
34	O1	LEARN TO SKI CENTER	400	150	1.4	BEG	2.7	3.7	0	0
*81	HH1	EASY STREET (1/2)	750	200	3.4	NOV	2.7	9.3	-4.5	-12.2
*82	GG6	CASCADE	2,800	125	8.0	LOW	4	32.1	1.2	4.8
**83	HH2	VON SCHMIDT'S TEACHING AREA	600	300	4.1	NOV	2.7	11.2	0	0
In Basin Total					**173.4**			**556.5**	**-5.2**	**-12.6**
					30.4					
Out of Basin										
54	V4	BIG DIPPER (1/5)	1,080	150	3.7	INT	2.7	10.0	0	0
58	V8	ORION'S (1/2)	1,820	200	8.4	LOW	2.7	22.6	0	0
**72	V10	METEOR (1/2)	970	130	2.9	INT	2.7	7.8	0.6	-1.5
Out of Basin Total					**15.0**			**40.4**	**0.0**	**-1.5**
California Total					**188.4**			**596.9**	**-5.2**	**-14.1**

Notes:

(1) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(2) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(3) Change from Master Plan (1996) Approved to Master Plan Amendment (2004) Proposed build out.

(4) Additional water requirements of Master Plan Amendment (2004) from Master Plan (1996).

* All or partially implemented since adoption of the Master Plan in 1996.

** Approved to be implemented but not yet constructed.

Table 2-22 (cont'd)

Existing Snowmaking Facilities - September 2004

Master Plan '96 Trail #	Existing '04 Trail #	Trail Name	*Length (feet)*	*Width (feet)*	*Acreage (acres)*	*Ability (skill class)*	*Acre ft. / Acre (1)*	*Acre ft. (2)*	*Change from Master Plan '96 Acres (3)*	*Change from Master Plan '96 Acre ft. (4)*
Nevada										
In Basin										
40	Q1	BOULDER (EDGEWOOD) BOWL	3,000	250	17.2	NOV	4	68.9	0	0
44	S1	OLYMPIC DOWNHILL (3/5)	5,190	130	15.5	LOW	2.7	41.8	0	0
65	9	STEVE'S	740	30	0.5	LOW	2.7	1.4	0	0
68	X1	BOULDER SKI SCHOOL	700	175	2.8	BEG	2.7	7.6	0	0
*81	HH1	EASY STREET (1/2)	760	200	3.5	NOV	2.7	9.4	-4.5	-12.2
In Basin Total					**39.5**			**129.1**	**-4.5**	**-12.2**
Out of Basin										
41	7	LOWER WAY HOME	1,900	120	5.2	BEG	2.7	14.1	0	0
44	S1	OLYMPIC DOWNHILL (2/5)	3,460	130	10.3	LOW	2.7	27.9	0	0
47	8	PEPI'S	3,500	50	4.0	LOW	2.7	10.8	0	0
48	S5	CROSSOVER	4,500	65	6.7	LOW	2.7	18.1	0	0
54	V4	BIG DIPPER (4/5)	4,300	150	14.8	INT	2.7	40.0	0	0
55	V6	ORION'S BELT	580	80	1.1	LOW	2.7	2.9	0	0
58	V8	ORION'S (1/2)	1,820	200	8.4	LOW	2.7	22.6	0	0
59	V9	LOWER ORION'S	1,590	108	2.9	LOW	2.7	7.8	0	0
62	W3	LITTLE DIPPER	2,600	175	10.4	INT	5	52.2	0	0
63	W4	COMET	3,250	190	14.2	LOW	2.7	38.3	0	0
**72	V10	METEOR (1/2)	985	130	2.9	INT	2.7	7.9	0.6	-1.5
*81A	HH3	SILVER SPUR	450	50	0.5	LOW	2.7	1.4	0.5	1.4
Out of Basin Total					**81.5**			**244.1**	**1.1**	**-0.1**
Nevada Total					**121.0**			**373.2**	**-3.4**	**-12.3**
Grand Total					**309.4**			**970.1**	**-8.6**	**-26.4**

Notes:

(1) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(2) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(3) Change from Master Plan (1996) Approved to Master Plan Amendment (2004) Proposed build out.

(4) Additional water requirements of Master Plan Amendment (2004) from Master Plan (1996).

* All or partially implemented since adoption of the Master Plan in 1996.

** Approved to be implemented but not yet constructed.

Table 2-23

Existing Snowmaking Classification - September 2004

CA and NV

Ability Level	Acreage CA	Acreage NV	Acreage Total	Percent CA	Percent NV	Percent Total	Industry Standard
Beginner	7.0	8.0	15.0	4%	7%	5%	2%
Novice	64.0	20.7	84.7	34%	17%	28%	13%
Low Intermediate	61.0	63.6	124.6	32%	53%	41%	20%
Intermediate	18.9	27.5	46.4	10%	23%	15%	35%
Advanced Intermediate	12.4	0.0	12.4	7%	0%	4%	20%
Expert	24.5	0.0	24.5	13%	0%	8%	10%
Totals	187.8	119.8	307.6	100%	100%	100%	100%

In and Out of Basin

Ability Level	Acreage In	Acreage Out	Acreage Total	Percent In	Percent Out	Percent Total	Industry Standard
Beginner	9.8	5.2	15.0	5%	5%	5%	2%
Novice	84.7	0.0	84.7	40%	0%	28%	13%
Low Intermediate	68.6	56.0	124.6	32%	59%	41%	20%
Intermediate	12.9	33.5	46.4	6%	35%	15%	35%
Advanced Intermediate	12.4	0.0	12.4	6%	0%	4%	20%
Expert	24.5	0.0	24.5	12%	0%	8%	10%
Totals	212.9	94.7	307.6	100%	100%	100%	100%

2.8 UTILITIES

Sewage Treatment

As of September 2004, treatment of sewage on the California side of Heavenly is by connection to the central sewer system of the South Tahoe Public Utility District (STPUD). Heavenly has reserved treatment capacity with the STPUD. A five-inch diameter collection line serves the California side of the mountain. Treatment of sewage on the Nevada side of Heavenly for new facilities will be by connection to the central sewage treatment facilities of the Douglas County Sewer Improvement District (DCSID) using transmission lines operated by the Kingsbury General Improvement District (KGID). Additional treatment capacity has been reserved at the DCSID treatment facility. A six-inch diameter collection line serves the Nevada side of the mountain.

Since approval of the Master Plan in 1996, Heavenly has maintained approved capacity for additional sewage flows and has utilized a portion of the additional on-mountain capacity at the gondola mid-station and top station.

The Master Plan approval of a new year round restaurant at the Gondola Mid Station and a new lodge at the Gondola Top Station was determined to increase the current sewage flows to the South Tahoe Public Utility District (STPUD) treatment facility. Additional capacity is available at their treatment facilities under the terms of Heavenly's existing sewer allocation. Other restaurant modifications on the mountain were not to exceed Heavenly's authorized capacities.

Water Service

Water service to Heavenly on the California side is provided by STPUD and from on-mountain wells. STPUD serves potable water to the California Base Lodge and snowmaking water at a point near the California Base Lodge. Snowmaking water is pumped up the mountain for direct use in snowmaking, or pumped to on-mountain storage reservoirs for later use. Water service on the Nevada side is from connection to KGID facilities where it is pumped to be used for snowmaking, or from wells on the Nevada side where it is used for both potable and snowmaking purposes.

There are also either surface water diversion rights and/or underground pumping water rights both in California and Nevada for snowmaking.

A new potable well and water storage tank was approved in the Master Plan (1996) to be located near the Gondola alignment to serve the Gondola Mid and Top Stations. That system was implemented in 2000.

Electricity

Electric Power is supplied to Heavenly by Sierra Pacific Power (SPP) in both California and Nevada. Service is through a single primary meter in each state. In California, SPP operates under the tariffs and regulations of the California Public Utilities Commission. In Nevada, it operates under the Nevada Public Utilities Commission tariffs and regulations.

Modification and capacity increases to the 1996 existing SPP facilities on the mountain were determined to be required. The modifications include power to all proposed lifts, significant lodge expansions, and the Gondola Mid and Top Stations. The increased size of the snowmaking system would require upgrading the existing overhead and underground power lines. The California Base redevelopment and future on-mountain facilities may require increased service levels from SPP.

Since approval of the Master Plan in 1996, Heavenly and SPP have upgraded the system components to new and expanded facilities as needed.

Heavenly works closely with each utility provider in order to ensure continuity of service as needed in order to implement the Master Plan.

2.9 SIGNAGE

No new offsite signage owned by Heavenly was proposed in the Master Plan 1996. Signs are to be addressed on an as needed basis when ski runs or lifts are built and approved under the Special Use Permit, USFS. Existing offsite directional and guide signage shall be replaced with TCORP standard sign face within one year from issuance of the TCORP sign standards. In addition, the offsite signs located on the Summit Village entrance signs near the top of the Kingsbury Grade were to be removed by October 1, 1997.

Since approval of the Master Plan in 1996, Heavenly has removed the overhead entry sign at the California Main Lodge, installed a new monument sign that replaced the non-conforming overhead entry sign at the California Main Lodge, and installed a new monument sign at the base of the gondola in Heavenly Village. TCORP off-site entry sign standards have not been developed or approved for use, therefore no changes have occurred to off-site directional highway signs.

In 2003, Heavenly began implementing a resort-wide program to significantly improve way finding and trail signage. This program was deemed to be very successful from guest service and aesthetic perspectives. Overall, there was very little or no increase in the total number of on-mountain signs. In 2004, the informational and way finding sign replacement program continued with the addition of new communication technology used in way finding and information signs at key locations. Current lift status information was incorporated into electronic message centers as an aid to resort guests. The lift status signs were installed at the base of the gondola, the California Base Lodge, the base of the Sky Express lift and base of Comet and Dipper Express lifts.

2.10 ANALYSIS OF COMFORTABLE CARRYING CAPACITY (CCC)

Comfortable Carrying Capacity (CCC) is described as the maximum level of utilization of a ski area (the number of skiers that can be accommodated at any given time) which guarantees a pleasant recreational experience. It is based on a variety of factors, including the uphill loading capacity of the lifts, the downhill capacity of the trail systems, the total vertical rise of the lift system, and the total amount of time spent in the lift waiting line, on the lift itself, and on the ski slopes. It is acceptable within the ski industry to exceed the CCC/SAOT on peak days by a total of 25%. Table 2-24 summarizes the CCC at buildout approved in the Master Plan 1996. Table 2-25 summarizes the existing CCC at Heavenly, as of September 2004.

Density figures take into account all of the skiers distributed throughout the ski area and not just those actually populating the ski trails themselves. Ski industry surveys indicate that between 25% and 35% will be using the trail system while the remaining numbers will be on the lifts, in the waiting lines, and/or in the base buildings and milling area. This means that an “acceptable density” of 35 skiers per acre reflects an actual “trail density” of between 9 and 12 skiers per acre. Table 2-26 summarizes the density analysis at build out of the Master Plan 1996. Table 2 -27 summarizes the existing density analysis, as of September 2004.

While the comfortable carrying capacity is used to determine utilization of a ski area and analyze whether the ski resort is balanced, Persons At One Time (PAOT) is used for determining skier allocation in this Heavenly Master Plan. PAOT is a TRPA Regional Plan unit of outdoor recreation which is used in measuring the skier capacity of a ski area, and for which other Regional capacities (e.g., tourist accommodations, commercial floor area,

roadway capacity, sewer and water capacity) must be sufficient. See Appendix 1 for Heavenly's PAOT calculations.

2.11 MASTER PLAN IMPLEMENTATION/PHASING

The 1996 Master Plan phasing plan shown on Table 2-28 reflected Heavenly's best judgment based on existing conditions (1992/1993) and was anticipated to be modified in response to changing conditions and circumstances. For example, a project in phase 3 may be implemented before a project in phase 1. Modifications to the phasing plan do not require amendment of the Master Plan. The Cumulative Watershed Effects implementation schedule developed for the Master Plan EIR/EIS/EIS was incorporated into this phasing schedule following certification of the environmental document and prior to adoption of the Master Plan.

2.12 LAND COVERAGE

Land Coverage Approved in Master Plan 1996

As analyzed in the Final EIR/EIS/EIS (Volume 5, pages 8.A-22 through 8.A-39), the Master Plan was approved to add new land coverage within the in-region portion of the Heavenly permit boundary. This new land coverage was approved to consist of the facilities referenced above. The existing land coverage analysis showed that Heavenly has approximately 40,000 square feet of potential land coverage available, assuming a one percent allowable land coverage limit. The Master Plan was approved to add approximately 101,992 square feet of new land coverage (Final EIR/EIS/EIS, Table 4.4-5, page 8.A-29), and would therefore exceed allowable limits by approximately 62,000 square feet.

To allow the addition of this excess land coverage, the Master Plan indicated that Heavenly must remove and restore existing onsite land coverage in accordance with the Code of Ordinances. Land coverage removal could occur from the obliteration of existing onsite roadways. Many roadways have been identified for abandonment/obliteration in the CWE analysis included in the EIR/EIS/EIS. There are 12.01 acres (7.59 acres within watershed CA-1, 2.29 acres within watershed CA-6, and 2.13 acres within watershed NV-3) of onsite roadways identified in the CWE analysis which could be abandoned and obliterated. These roadways are currently assumed to be soft land coverage, as they meet the TRPA definition of soft land coverage (subject to TRPA verification).

Land Coverage Implemented since 1996

Since approval of the Master Plan in 1996, Heavenly has utilized the remaining 40,000 square feet of potential land coverage on several projects approved by TRPA. In addition, existing land coverage was retired, verified and banked in order to use on additional projects.

Table 2-29 summarizes land coverage by TRPA for Master Plan projects from 1997-2004. Appendix 2 contains a detailed listing of land coverage approved and implemented by project. Included in the additional land coverage line of the summary table is the approved land coverage for the Sky Meadows Lodge (1998) which was not built and will be relocated in the Master Plan Amendment 2004, and a larger approved amount of land coverage than was built for the gondola project. Chapter 3 identifies projects that will utilize additional or relocated land coverage, and potential sources for retirement and relocation.

Existing Land Coverage as of September 2004

Existing land coverage within the USDA Forest Service and Heavenly owned portions of the special use permit boundary consists of skier support facilities, parking lots, ski lifts, and paved & unpaved roads. Existing coverage for which Heavenly has the responsibility to disclose under the Bailey Land Capability Classification system include those facilities and roads within the Lake Tahoe Region. TRPA has determined (for purposes of implementing the Master Plan 1996) that Heavenly's project area shall consist of all lands within the In-Region portion of Heavenly's special use permit area that are owned by either Heavenly or the USDA Forest Service (see figure 2-1). Using this project area, Heavenly is within allowable Bailey land coverage limits for the existing condition. Refer to Table 2-29 and Appendix 2. The reader is also referred to section 3.4 of the Heavenly Mountain Resort Master Plan Amendment 2005 Final EIR/ EIS, January 29, 2007.

Table 2-24

Master Plan (1996) Facilities - Classification of CCC at Buildout

Lift	Name	Approved Type	Length Feet	Vertical Feet	Hourly Capacity	Loading Efficiency	VTF/HR (000's)	CCC (1)
California / In basin								
A	TRAMWAY	Detach	3,370	1,530	2,000	50%	3,060	420
B	GUNBARREL EXPRESS	Detach	3,390	1,670	2,000	50%	3,340	410
C	WEST BOWL	Remove	0	0	0	0%	0	0
D	WORLD CUP	Double	1,100	320	900	90%	288	160
E	PATSY'S	Quad	1,160	220	1,800	75%	396	260
F	GROOVE	Quad	1,180	300	1,800	75%	540	260
G	WATERFALL	Quad	3,350	920	1,800	90%	1,656	900
G-1	POWDER BOWL	Quad	2,360	810	1,800	50%	1,458	280
H	CANYON	Detach	3,720	1,000	1,800	95%	1,800	1,050
H-1	RIDGE	Double	4,840	1,060	800	95%	848	440
I	SKY EXPRESS	Detach	4,390	1,420	2,400	85%	3,408	1,150
J	VON SCHMIDTS	Quad	3,720	560	1,800	50%	1,008	410
K	PERFECT RIDE	Quad	1,280	250	1,800	90%	450	450
L	CA SKI SCHOOL	J-Bar	800	110	500	90%	55	110
M	ENCHANTED FOREST 2	Quad	400	80	1,200	75%	96	120
M-1	MAGIC CARPET	Belt	80	7	120	90%	1	20
N	PIONEER 1PLATTER	Quad	640	130	1,000	75%	130	180
O	PIONEER 2 WIRE	J-Bar	380	40	500	90%	20	70
GG	TAMARACK	Quad	2,630	600	2,000	90%	1,200	800
HH	VON SCHMIDTS 1	Quad	1,640	250	1,000	90%	250	380
HH-1	BIG EASY	Quad	2,010	200	1,000	90%	200	350
II	GONDOLA	Gondola	12,010	2,850	3,000	0%	8,550	0
			54,450	14,327	**31,020**		28,754	**8,220**
Nevada / In basin								
Q	BOULDER	Quad	2,870	440	1,800	90%	792	850
S	NORTH BOWL	Quad	5,290	1,290	1,400	75%	1,806	810
T	OLYMPIC	Quad	3,380	860	1,800	90%	1,548	1,040
X	BOULDER 2	Wire Rope	490	50	600	90%	30	60
			12,030	2,640	**5,600**		4,176	**2,760**
Nevada / Out of basin								
R	STAGECOACH	Quad	2,900	550	2,000	25%	1,100	210
U	GALAXY	Quad	5,440	1,020	1,800	90%	1,836	1,410
V	DIPPER	Detach	4,910	1,140	2,400	95%	2,736	1,560
W	COMET	Detach	3,580	880	2,400	95%	2,112	1,340
Y	STAGECOACH 2	Quad	4,230	1,200	1,800	90%	2,160	1,150
Z	WELLS FARGO	Quad	5,710	1,900	2,400	50%	4,560	720
DD	MOTT CANYON	Quad	2,570	870	1,000	95%	870	170
EE	ALDERMANS	Quad	5,810	1,420	2,200	90%	3,124	560
			35,150	8,980	**16,000**		18,498	**7,120**
Grand Total			101,630	25,947	**52,620**		51,428	**18,100**

Notes:

(1) The Comfortable Carrying Capacity (CCC) is calculated using the following formula:
CCC = (Vertical Rise x Hourly Capacity x Loading Efficiency x Hours of Operation) / Vertical Demand

Using Sky Express as an example:
Vertical Rise = 1,420 feet — Hourly Capacity = 2,400 PPH
Loading efficiency = 85% — Hours of Operation = 6 hours
Vertical demand = 15,115 feet/day (The amound of vertical that the average skier on the lift will ski in one day. This is a product of round trip interval which takes into account the amount of time skiing, waiting in lift line, and riding the lift)

Sky Express CCC = (1,420 X 2,400 X .85 X 6)/15,115 — The Sky Express CCC is therefore 1,150

Table 2-25

Existing Facilities - Classification of CCC - September 2004

Lift	Name	Existing '04 Type	Length Feet	Vertical Feet	Hourly Capacity	Loading Efficiency	VTF/HR (000's)	CCC saot (1)
California / In basin								
A	AERIAL TRAMWAY	AERIAL TRAM	3,660	1,570	650	95%	1,021	189
B	GUNBARREL EXPRESS	DETACHABLE QUAD	3,390	1,591	2,400	95%	3,818	709
C	WEST BOWL	REMOVED	0	0	0	0%	0	0
D	WORLD CUP	FIXED DOUBLE	1,100	320	900	85%	288	215
E	PATSY'S	FIXED TRIPLE	1,160	120	1,800	85%	216	462
F	GROOVE	FIXED TRIPLE	1,180	300	1,800	85%	540	465
G	WATERFALL	REMOVED	3,350	920	0	85%	0	0
G-1	POWDERBOWL EXPRESS	DETACHABLE SIX	2,360	810	3,400	95%	2,754	1,017
H	CANYON EXPRESS	DETACHABLE QUAD	3,800	1,000	2,600	95%	2,600	951
H-1	RIDGE	REMOVED	0		0	0%	0	0
I	SKY EXPRESS	DETACHABLE QUAD	4,390	1,420	2,400	95%	3,408	944
*J	VON SCHMIDT'S	APPROVED - UNBUILT	4,450	685	1,800	85%	1,233	638
K	FIRST RIDE	FIXED TRIPLE	970	180	1,800	85%	324	430
L	CA SKI SCHOOL	HANDLE TOW	180	30	500	70%	15	80
L-1	CA SKI SCHOOL II	HANDLE TOW	250	26	500	70%	13	84
M	ENCHANTED FOREST II	TOW	380	60	380	70%	23	69
M-1	MAGIC CARPET	BELT	80	10	120	70%	1	18
N	PIONEER I	HANDLE TOW	380	40	465	70%	19	85
O	PIONEER II	REMOVED	0	0	0	70%	0	0
GG	TAMARACK EXPRESS	DETACHABLE SIX	2,630	571	2,400	95%	1,370	748
HH (1/3)	VON SCHMIDTS I	HANDLE TOW	520	45	250	70%	11	49
*HH (1/3)	VON SCHMIDTS II	APPROVED - UNBUILT	450	70	250	70%	18	47
HH (1/3)	VON SCHMIDTS CARPET	BELT	100	15	450	70%	7	68
HH-1	BIG EASY	FIXED QUAD	960	140	1,400	85%	196	338
II	STATELINE GONDOLA	GONDOLA	12,149	2,847	2,800	0%	0	0
			47,889	12,770	**29,065**		17,874	**7,606**
Nevada / In basin								
Q	BOULDER	FIXED TRIPLE	2,600	400	1,800	85%	720	564
S	NORTH BOWL	FIXED DOUBLE	5,290	1,290	1,700	85%	2,193	853
T	OLYMPIC	FIXED DOUBLE	3,380	860	990	85%	851	418
X	BOULDER I	BELT	200	35	750	70%	26	120
X-1	BOULDER II	BELT	60	15	400	70%	6	58
			11,530	2,600	**5,640**		3,797	**2,013**
Nevada / Out of basin								
R	STAGECOACH EXPRESS	DETACHABLE QUAD	5,710	1,490	2,400	95%	3,576	1,090
U	GALAXY	FIXED DOUBLE	5,440	1,020	1,200	85%	1,224	613
V	DIPPER EXPRESS	DETACHABLE QUAD	4,910	1,140	2,400	95%	2,736	917
W	COMET EXPRESS	DETACHABLE QUAD	3,580	880	2,400	95%	2,112	854
Y	STAGECOACH II	ELIMINATED	0	0	0	0%	0	0
Z	WELLS FARGO	NOT APPROVED	0	0	0	0%	0	0
DD	MOTT CANYON	FIXED DOUBLE	2,570	870	1,000	90%	870	333
EE	ALDERMANS	NOT APPROVED	0	0	0	0%	0	0
			22,210	5,400	**9,400**		10,518	**3,807**
Grand Total			81,629	20,770	**44,105**		32,189	**13,426**

Notes:

* Approved to be built but not yet constructed (Lift J: 1,800 pph & Lift HH: 250 pph)

(1) Skiers At One Time (SAOT) is calculated using the following formula:

SAOT = skiers per minute x (((lift ride time + maze wait time) x 100%) + skiing time x returning skier utilization)

Table 2-26

Master Plan (1996) Facilities - Density Analysis at Buildout

Lift	Name	Ability Levels	CCC (1)	Delineated Acreage	Tree Skiing	Actual Density	Industry Standard	Comparison (Actual / Accept.)
California / In basin								
A	AERIAL TRAMWAY	Expert	420	27.0	3.0	14	20	70%
B	GUNBARREL EXPRESS	Inter. - Expert	410	22.5	6.0	14	19	74%
D	WORLD CUP	Novice	160	4.7	1.0	28	35	80%
E	PATSY'S	Novice	260	4.3	0.0	60	50	120%
F	GROOVE	Novice - Adv. Inter.	260	7.4	1.5	29	50	58%
G	WATERFALL	Novice - Adv. Inter.	900	18.5	4.0	40	37	108%
G-1	POWDERBOWL EXPRESS	Novice - Adv. Inter.	280	7.1	3.0	28	34	82%
H	CANYON EXPRESS	Novice - Adv. Inter.	1,050	29.2	5.0	31	40	78%
H-1	RIDGE	Novice - Adv. Inter.	440	14.4	3.5	25	34	74%
I	SKY EXPRESS	Novice - Adv. Inter.	1,150	38.9	20.0	20	28	71%
J	VON SCHMIDTS	Novice - Low Inter.	410	5.5	5.0	39	50	78%
K	FIRST RIDE	Novice	450	8.7	1.0	46	50	92%
L	CA SKI SCHOOL	Beginner	110	3.7	0.0	30	60	50%
M	ENCHANTED FOREST II	Beginner	120	0.9	2.5	35	60	58%
M-1	MAGIC CARPET	Beginner	20	0.2	0.0	100	60	167%
N	PIONEER I	Beginner	180	2.4	4.0	28	60	47%
O	PIONEER II	Beginner	70	1.4	0.0	50	60	83%
GG	TAMARACK EXPRESS	Low Inter.	800	22.3	3.0	32	42	76%
HH	VON SCHMIDTS I	Beginner	380	17.9	2.0	19	35	54%
HH-1	BIG EASY	Beginner	350	17.8	1.0	19	35	54%
II	GONDOLA		0	0.0	0.0	0	0	0%
			8,220	254.8	65.5			
Nevada / In basin								
Q	BOULDER	Novice	850	17.2	0.0	49	50	99%
S	NORTH BOWL	Novice - Adv. Inter.	810	25.9	9.0	23	28	83%
T	OLYMPIC	Low Inter.	1,040	25.9	7.0	32	32	99%
X	BOULDER II	Beginner	60	2.8	0.0	21	60	36%
			2,760	71.8	16.0			
Nevada / Out of basin								
R	STAGECOACH EXPRESS	Novice - Low Inter.	210	7.0	2.0	23	31	75%
U	GALAXY	Novice - Low Inter.	1,410	31.1	10.0	34	35	98%
V	DIPPER EXPRESS	Low Inter. - Expert	1,560	58.9	6.0	24	24	100%
W	COMET EXPRESS	Low Inter. - Inter.	1,340	50.3	10.5	22	30	73%
Y	STAGECOACH II	Novice - Inter.	1,150	28.2	6.0	34	33	102%
Z	WELLS FARGO	Adv. Inter. - Expert	720	35.4	8.0	17	32	52%
DD	MOTT CANYON	Adv. Inter. - Expert	170	144.7	0.0	1	17	7%
EE	ALDERMANS	Adv. Inter.	560	70.4	8.0	7	25	29%
			7,120	426.0	50.5			
Grand Total			**18,100**	**752.6**	**132.0**			

Notes: Definitions of Table 2-26 Headings

CCC=	Comfortable Carrying Capacity of the Lift (see Table 2-24 for discussion of CCC calculation).
Delineated Runs =	Acreage of ski trails serving the Lifts (the acreage of all ski trails is shown on Table 2-6).
Tree Skiing=	Acreage of tree skiing associated with delineated ski trails (includes treed areas frequently used by skiers).
Actual Density =	CCC divided by Delineated Runs plus Tree Skiing (skiers per acre of ski trail)
Industry Standard=	The number of skiers per acre of each Ability Level as determined by industry standards. Beginner trails are 60 skiers per acre while expert trails are 17 per acre. Combinations of different ability levels results in different Industry Standards for each lift system.
Comparison=	Actual Density divided by Acceptable Density (shows whether the trail system is in balance with the Lift CCC).

Table 2-27

Existing Facilities - Density Analysis - September 2004

Lift	Name	Lift Capacity *skiers*	Trail Capacity *skiers*	Comparison 1 *trails:lifts*	Total Pod Acreage *acres*	Average Density *skiers per acre*	Optimum Density *skiers per acre*	Comparison 2 *average:optimum*
California / In basin								
A	AERIAL TRAMWAY	189	201	106%	17.2	11.7	11.5	102%
B	GUNBARREL EXPRESS	709	698	98%	33.6	20.8	15.6	133%
D	WORLD CUP	215	150	70%	6.3	23.8	24.0	99%
E	PATSY'S	462	184	40%	6.1	30.2	30.0	101%
F	GROOVE	465	184	40%	6.1	30.2	30.0	101%
G-1	POWDER BOWL	1,017	660	65%	45.1	14.6	20.9	70%
H	CANYON	951	898	94%	41.8	21.5	21.0	102%
I	SKY EXPRESS	944	831	88%	94.7	8.8	18.8	47%
*J	VON SCHMIDT'S	638	0	transport	0.0	0.0	0.0	transport
K	PERFECT RIDE	430	328	76%	10.9	30.1	30.0	100%
L	CA SKI SCHOOL	80	78	98%	2.6	30.0	30.0	100%
L-1	CA SKI SCHOOL 2	84	32	38%	1.1	29.1	30.0	97%
M	ENCHANTED FOREST 2	69	65	94%	1.3	50.0	30.0	167%
M-1	MAGIC CARPET	18	26	144%	0.9	28.9	30.0	96%
N	PIONEER 1	85	76	89%	2.5	30.4	30.0	101%
GG	TAMARACK	748	661	88%	27.5	24.0	24.0	100%
HH (PORTION)	VON SCHMIDTS I	49	52	106%	2.2	23.6	24.0	98%
*HH (PORTION)	VON SCHMIDTS II	47	52	111%	2.2	23.6	24.0	98%
HH (PORTION)	VON SCHMIDTS CARPET	68	52	76%	2.2	23.6	24.0	98%
HH-1	BIG EASY	338	218	64%	9.1	24.0	24.0	100%
II	GONDOLA	0	0	transport	0.0	0.0	0.0	transport
		7,606			313.4			
Nevada / In basin								
Q	BOULDER	564	542	96%	18.1	29.9	30.0	100%
S	NORTH BOWL	602	596	99%	73.5	8.1	18.0	45%
T	OLYMPIC	418	606	145%	71.0	8.5	19.6	44%
X	BOULDER MC I	120	44	37%	1.5	29.3	30.0	98%
X-1	BOULDER MC II	58	44	76%	1.5	29.3	30.0	98%
		1,762			165.6			
Nevada / Out of basin								
R	STAGECOACH	1,090	822	75%	38.6	21.3	21.6	99%
U	GALAXY	613	595	97%	24.8	24.0	24.0	100%
V	DIPPER	917	953	104%	64.8	14.7	13.0	113%
W	COMET	854	783	92%	33.4	23.4	22.8	103%
DD	MOTT CANYON	333	192	58%	106.4	1.8	3.6	50%
		3,807			268.0			
Grand Total		**13,175**			747.0			

Notes: Definintions of Table 2-27 Headings

Lift Capacity =	The Capacity of the lift (see Table2-25 for a discussion of the Capacity).
Trail Capacity =	The Capacity of the trail (calculated by multiplying the trail acreage by the acceptable skier density for the trail).
Comparison 1 =	Trail Capacity divided by lift capacity (shows whether the trail capacity is in balance with the lift capacity)
Total Pod Acreage =	Total acreage of the lift pod (includes tree skiing acreage that is consitently skiable - calculated at a reduced density)
Average Density =	The trail capacity divided by the total pod acreage (shows the average number of skiers per acre on the trail).
Optimum Density =	The optimum number of skiers per acre for the trail (based on skill class of the trail) as determined by industry standards.
Comparison 2 =	The average density divided by the optimum density (shows whether the number of skiers per acre in that pod are in balance with industry standards).

Table 2-28

Master Plan (1996) Facilities - Estimated Project Phasing

Phase One

Lift II (Gondola) Construction
- Gondola Base Station
- Gondola Mid Station
- Gondola Top Station

Relocate Upper CA Maintenance to Von Schmidts
Lift J (Sky Meadow to Gondola Top Station) Construction
Lift HH - 1 (Von Schmidts Learn to Ski) Construction
- Trails 81 (Partial)

Lift GG (California) Construction
- Trails 29a and 82

Replace Lift R (Stagecoach 1) with Quad
Replace Lift R (Stagecoach 2) with Quad
- Trail 44B

Replace Lift V (Dipper) with Detach Quad
Replace Lift A (Tram) with Detach Quad
- Remove Lift C (West Bowl)

Phase Two

Replace East Peak Lodge
Replace Sky Meadow Lodge
Replace Lift B (Gunbarrel) with Detach Quad
Top of Tram Restaurant Remodeling
Lift EE (Aldermans) Construction
- Trails 72,73,75,76, and 77

Replace Lift H (Canyon) with Detach Quad
Replace Lift N (Pioneer) with Quad
Replace Lift S (North Bowl) with Quad

Phase Three

Kid's Camp (California Base)
- Lift K Replacement
- Trail 30
- Lift L Replacement
- Trail 31
- Lift M Replacement
- Trail 32

Replace Lift T (Olympic) with Quad Construction
Relocate Lower California Snowmaking Building
Replace Lift U (Galaxy) with Quad
Replace California Base Lodge
- Relocate Lower California Maintenance Off-Site

Remodel Boulder Base Lodge
- Replace Lift X
- Trail 68

Lift Z (Wells Fargo) Construction
- Trails 86 and 80
- Trails 87 and 91 Clean-up

Lift HH (Von Schmidt's Learn to Ski 2) When Necessary

Table 2-29

Land Coverage Summary (1997 - 2004)

Item	***Land Coverage Totals (Sq. Feet)***
Existing Land Coverage at Time of Master Plan Adoption (1996)	2,013,854
Remaining Allowable Potential Land Coverage to Add	40,000
Maximum Allowable Land Coverage Available in MP (96)	2,053,854
Land Coverage Approved Since Master Plan Adoption	106,311
Land Coverage Banked*	427,087
Remaining Land Coverage Balance	434,580

Source: Heavenly Ski Resort TRPA Project Files, 1997 - 2004

* - Boulder Parking Lot BMP Installation project includes 4,464 sq. ft., to be recognized following project completion in 2005 (See TRPA File 20051422), and an additional 422,623 sq. ft. of banked land coverage.

3 Physical Plan - Upgraded Ski Facilities

3 PHYSICAL PLAN - UPGRADED SKI FACILITIES

Facilities in this Master Plan Amendment (2007) are briefly discussed in the beginning of this chapter. The bulk of the information is contained in the tables throughout the chapter. Table 3-1 provides a summary of the facilities at build-out of this MPA (07). The MPA (07) - Proposed Facilities map, (Figure 3-1) displays the location of each of these facilities.

Table 3-1

2007 Master Plan Amendment - Facility Summary at Buildout

	CA In-Basin		*CA Out-of-Basin*		*NV In-Basin*		*NV Out-of-Basin*		*Totals in- and Out-of-Basin*
Total Lifts	**25**		**0**		**5**		**7**		**38**
Hourly Capacity (pph)	28,620		0		9,800		14,200		52,620
VTF/Hour (000)	29,248		0		5,866		18,208		53,322
Ski Trails (acres)	**251.4**		**65.8**		**78.8**		**416.5**		**812.5**
Beginner/Novice	77.7	31%	0.0	0%	21.6	27%	21.7	5%	121.0
Low. Int./Intermediate	109.9	44%	19.1	29%	44.4	56%	193.8	47%	367.2
Adv. Int./Expert	54.1	22%	45.6	70%	12.0	15%	198.8	48%	310.5
Other	9.8	13%	1.1	2%	0.8	1%	2.1	1%	13.8
Snowmaking (acres)	**210.8**		**19.1**		**76.5**		**222.0**		**528.4**
Beginner/Novice	79.9	38%	0.0	0%	23.4	31%	20.3	11%	123.6
Low Int./Intermediate	90.8	43%	19.1	100%	41.1	54%	183.4	100%	334.4
Adv. Int./Expert	40.4	19%	0.0	0%	12.0	16%	18.3	10%	70.7
Support Facilities									
No. of Buildings	**6**		**1**		**1**		**2**		**10**
Seats	3,050		1,000		250		831		5,131
Space (sq. feet)	158,317		36,000		18,340		35,025		247,682
Maintenance Facilities									
No. of Buildings	**2**		**0**		**1**		**1**		**4**
Space (sq. feet)	14,620		0		1,500		18,000		34,120
Parking/Access									
Vehicles Parked (onsite)	1,310		None		450		410		2,170
Satellite Parking (offsite)	0		None		600		600		1,200
Structured Parking	822		0		0		0		822
Avg. Car Occupancy	2.8		2.8		2.8		2.8		2.8
Skiers/Visitors	5,970		None		2,940		2,828		11,738
Gondola (cap/day)	6,000		0		0		0		6,000
Utilities									
Domestic Water	10.2		2		2.1		4.7		19
Snowmaking (acre/ft. avail)	92		8		29		593		722
Sewer	STPUD		STPUD		KGID		KGID		
Power	Round Hill		Kingsbury		Kingsbury		Buckeye		
Skiers At One Time / CCC (SAOT)	7,739		0		3,475		6,220		17,434
PAOT	8,872		0		3,038		4,402		16,312

Notes:

3.1 LIFTS

The MP (96) approved a build out level of thirty-three lifts with a combined total capacity of 52,620 pph. The MPA (07) proposes a build out level of thirty-eight lifts with a combined total capacity of 52,620 pph. The MPA (07) will achieve this capacity with a slightly larger amount of In-Basin uphill capacity, and a corresponding smaller amount Out-of-Basin. The MPA (07) proposal effectively reduces major lift infrastructure while maintaining overall lift capacity without exceeding approved levels. The MP (96) includes twenty-nine aerial lifts and four surface lifts, while the MPA (07) includes twenty-four aerial lifts and eleven surface lifts (including two snow tubing-only lifts), a reduction of five major aerial lifts. As a result, there is a significant reduction in the number of larger aerial lifts in the amendment. Three new transport lifts with no uphill capacity are proposed as short tow lifts that serve as surface transport along flat road segments (these are the areas identified as 'trapped areas' on page 1-12 in Chapter 1). Proposed lift changes are categorized into lift consolidations, minor lift capacity changes, training lift installations, transport/convenience lifts, and tubing–only lifts – as identified below.

Heavenly lift consolidations

Lifts E & F:	Patsy's & Groove consolidation
Lifts DD & EE:	Mott Canyon & Alderman's consolidation

Heavenly minor lift capacity changes

Lift A:	Tramway replacement - capacity increase	2,000 pph to 2,400 pph
Lift B:	Gunbarrel – capacity increase	2,000 pph to 2,400 pph
Lift Q:	Boulder replacement - capacity increase	1,800 pph to 2,200 pph
Lift R	Stagecoach replacement– capacity increase	2,400 pph to 2,600 pph
Lift S:	North Bowl replacement – capacity increase	1,700 pph to 2,400 pph
Lift T:	Olympic replacement – capacity increase	990 pph to 2,400 pph
Lift U:	Galaxy replacement - capacity increase	1,800 pph to 2,400 pph

Heavenly training lift installations

Lift F:	Groove magic carpet(s) installations
Lift 0:	Pioneer 2 magic carpet(s) installations

Heavenly transport/convenience lifts
(not previously proposed – no uphill lift capacity)

Lift JJ-1:	Gondola Transport 1 surface
Lift JJ-2:	Gondola Transport 2 surface
Lift KK:	East Peak Lodge Transport surface

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Figure 3-1	Heavenly MPA (07) Proposed Facilities	1(24 X 36)

Table 3-2

2007 Master Plan Amended Facilities - Lifts at Buildout

Lifts	Name	2004 Existing Type	1996 Master Plan Approved Type	*1996 Master Plan Hourly Capacity*	2007 Amendment Proposed Type	*2007 Amendment Hourly Capacity*
In Basin						
A	TRAMWAY EXPRESS	AERIAL TRAMWAY	DETACHABLE QUAD	2,000	DETACHABLE	2,400
B	GUNBARREL EXPRESS	DETACHABLE QUAD	DETACHABLE QUAD	2,000	RETAIN EXISTING	2,400
C	WEST BOWL	REMOVED	REMOVED	0	REMOVED	0
D	WORLD CUP	FIXED DOUBLE	FIXED DOUBLE	900	RETAIN EXISTING	900
E	PATSY'S	FIXED TRIPLE	QUAD CHAIR	1,800	DETACHABLE	2,400
F	GROOVE	FIXED TRIPLE	QUAD CHAIR	1,800	SURFACE LIFT(S)	600
G	WATERFALL	REMOVED	QUAD CHAIR	1,800	REMOVED	0
G-1	POWDERBOWL EXPRESS	DETACHABLE SIX	QUAD CHAIR	1,800	RETAIN EXISTING	3,400
H	CANYON EXPRESS	DETACHABLE QUAD	DETACHABLE QUAD	1,800	RETAIN EXISTING	2,600
H-1	RIDGE	REMOVED	DOUBLE CHAIR	800	REMOVED	0
I	SKY EXPRESS	DETACHABLE QUAD	DETACHABLE SIX	2,400	RETAIN PROPOSED	2,400
*J	VON SCHMIDT'S	APPROVED - UNBUILT	QUAD CHAIR	1,800	RETAIN PROPOSED	1,800
K	FIRST RIDE	FIXED TRIPLE	QUAD CHAIR	1,800	RETAIN PROPOSED	1,400
L	CA SKI SCHOOL	HANDLE TOW	J - BAR	500	SURFACE LIFT(S)	400
L-1	CA SKI SCHOOL II	HANDLE TOW	NOT PROPOSED	0	SURFACE LIFT(S)	400
M	ENCHANTED FOREST II	HANDLE TOW	QUAD CHAIR	1,200	SURFACE LIFT(S)	400
M-1	MAGIC CARPET	MAGIC CARPET	MAGIC CARPET	120	RETAIN EXISTING	120
N	PIONEER I	HANDLE TOW	QUAD CHAIR	1,000	RETAIN PROPOSED	600
O	PIONEER II	REMOVED	J - BAR	500	SURFACE LIFT(S)	500
Q	BOULDER	FIXED TRIPLE	QUAD CHAIR	1,800	DETACHABLE	2,200
S	NORTH BOWL EXPRESS	FIXED TRIPLE	QUAD CHAIR	1,400	DETACHABLE	2,400
T	OLYMPIC EXPRESS	FIXED DOUBLE	QUAD CHAIR	1,800	DETACHABLE	2,400
X	BOULDER I	MAGIC CARPET	MAGIC CARPET	600	RETAIN EXISTING	750
X-1	BOULDER II	MAGIC CARPET	NOT PROPOSED	0	RETAIN EXISTING	400
GG	TAMARACK EXPRESS	DETACHABLE SIX	QUAD CHAIR	2,000	RETAIN EXISTING	2,400
HH (1/3)	VON SCHMIDT'S I	HANDLE TOW	QUAD CHAIR	1,000	RETAIN EXISTING	250
*HH (1/3)	VON SCHMIDT'S II	APPROVED - UNBUILT	NOT PROPOSED	0	HANDLE TOW	250
HH (1/3)	VON SCHMIDT'S CARPET	MAGIC CARPET	NOT PROPOSED	0	RETAIN EXISTING	450
HH-1	BIG EASY	FIXED QUAD	QUAD CHAIR	1,000	RETAIN EXISTING	1,400
II	STATELINE GONDOLA	GONDOLA	GONDOLA	3,000	RETAIN EXISTING	2,800
**JJ-1	GONDOLA TRANSPORT	NEW	NOT PROPOSED	0	SURFACE TRANSPORT	0
**JJ-2	GONDOLA TRANSPORT II	NEW	NOT PROPOSED	0	SURFACE TRANSPORT	0
TL-1	TUBING LIFT I	TUBING LIFT	NOT CONSIDERED	0	TUBING LIFT	0
TL-2	TUBING LIFT II	TUBING LIFT	NOT CONSIDERED	0	TUBING LIFT	0
TOTAL				**36,620**		**38,420**
Out of Basin						
R	STAGECOACH EXPRESS	DETACHABLE QUAD	QUAD CHAIR	2,000	RETAIN EXISTING	2,400
U	GALAXY EXPRESS	FIXED DOUBLE	QUAD CHAIR	1,800	DETACHABLE	2,400
V	DIPPER EXPRESS	DETACHABLE QUAD	DETACHABLE CHAIR	2,400	RETAIN EXISTING	2,600
W	COMET EXPRESS	DETACHABLE QUAD	DETACHABLE CHAIR	2,400	RETAIN EXISTING	2,400
Y	STAGECOACH II	ELIMINATED	QUAD CHAIR	1,800	ELIMINATED	0
Z	WELLS FARGO	NEW	QUAD CHAIR	2,400	DETACHABLE	2,400
DD	MOTT CANYON	FIXED DOUBLE	DOUBLE CHAIR	1,000	FIXED QUAD	2,000
EE	ALDERMANS	NEW	QUAD CHAIR	2,200	ELIMINATE	0
**KK	EAST LAKE TRANSPORT	NEW	NOT PROPOSED	0	SURFACE TRANSPORT	0
TOTAL				**16,000**		**14,200**
Grand Total				**52,620**		**52,620**

Notes:
(1) The change from Master Plan (1996) capacity to Master Plan Amendment (2007) proposed capacity.
(2) Length and vertical for Master Plan Amendment (2007) proposed lifts are shown in Table 3-10.
* approved to be built but not yet constructed
** serves a transportation function only - no uphill lift capacity allocated

Top of Gondola Tubing lifts
(no uphill lift capacity)

Tubing Lift 1:	Existing tubing lift
Tubing Lift 2	Proposed tubing lift

Heavenly In Basin – Lifts

As shown in Table 3-2, the Master Plan (96) approved 25 lifts, 21 aerial and 4 surface lifts with a combined hourly capacity of 36,620 pph 'In Basin'. This Master Plan Amendment (07) proposes to retain sixteen existing or proposed lifts, upgrade five lifts with detachable technology, and reduce the approved capacity of six lifts. This MPA (07) proposes twenty-seven (uphill capacity) lifts, seventeen aerial and ten surface lifts with a combined hourly capacity of 38,420 pph 'In Basin'. The MPA (07) also proposes to include two new surface transport lifts and two tubing lifts (one is existing) with no uphill capacity at the top of the gondola. The approved and proposed lift specifications are listed in Table 3-2.

Heavenly Out of Basin – Lifts

As shown in Table 3-2, the Master Plan (96) approved eight lifts, all major lifts, with a combined hourly capacity of 16,000 pph 'Out of Basin'. This Master Plan Amendment (07) proposes to retain three existing or proposed lifts, upgrade three lifts with detachable technology, add one surface transport lift with no uphill capacity near East Peak Lodge, and eliminate two lifts. The MPA (07) proposes six aerial lifts with a combined hourly capacity of 14,200 pph 'Out of Basin'. The approved and proposed lift specifications are discussed below and listed in Table 3-2.

Ski Lift and Trail Construction Mitigation Program & Best Management Practices

The Ski Lift and Ski Trail Construction Mitigation Program related to design and construction of ski lifts and trails includes the follow criteria:

1. Minimize the amount of tree removal, vegetation clearing and grading required for ski lifts.

2. For new run construction and for hazard reduction on existing runs, utilize the Easy Street Run Hazard Reduction Prescription, including pre- and post-treatment monitoring and reporting. The Easy Street Run Hazard Reduction Prescription is found in Appendix 3.

3. Utilize revegetation prescriptions and specifications for CWE restoration projects and permanent water quality BMP's that are associated with Master Plan implementation projects. The revegetation specifications will be developed in conjunction with the Forest Service. They will replace existing BMP specifications where inconsistencies are found.

4. Clearing for ski lifts and trails shall have varied edges to blend with the mountain topography and vegetation. Vegetation patterns shall be manipulated under and along the lift lines, edges shall be curved and irregular, and clearings with straight vegetation edges shall be avoided.

5. The color of the lift towers and chairs shall blend with the natural color of the slope in both summer and winter, and be constructed of non-reflective materials. Galvanized steel on towers and chairs shall be darkened to prevent glare.

6. Wherever possible, existing trees and vegetation shall be preserved as a visual screen between the California base area and the ski trails in order to preserve the area's natural appearance. This shall include the preservation and enhancement of the area south and southwest of the California base area parking lot, where native trees and shrubs shall be planted in dense groupings to improve the area's natural appearance.

7. Colors for the lift structures, lift operator's buildings, and other associated facilities shall be designed to be compatible with the natural landscape, using natural subdued color consistent with the overall design of the development.

3.2 SKI TRAILS

The MP (96) approved a total of 117.4 acres of trail widening and new trail construction. This MPA (07) proposes a total of 184.7 acres of existing trail improvements or new trail construction.

The goal of the MPA (07) – Upgraded Trail Network, is to focus trail work within the existing - developed Heavenly permitted ski area in order to enhance the guest experience at the resort and achieve better lift and trail balance. Figure 3-1, MPA (07) Proposed Conditions, displays the location of each of these facilities.

California – Trails

California - In Basin

The MP (96) approved four new trails with a total additional acreage of 30.9 acres - California 'In Basin'. Since the MP (96), all of the trails have either been constructed or approved for construction, totaling 20.8 acres. One new trail has been approved to be constructed but has not been implemented. Trails implemented since the MP (96) are highlighted with an asterisk in Table 3-3 and trails approved for construction but not yet implemented are highlighted with a double asterisk. The MPA (07) proposes to add two conventional trails, four new gladed trails, two transport trail realignment sections, and complete circulation improvement and widening projects on certain existing trails and trail intersections.

The MPA (07) proposes a total of 27.7 acres of existing trail improvements or trail construction - California 'In Basin'. The MPA (07) has also eliminated, reduced or minimized clearing on some MP (96) ski trail projects for a total of 14.8 acres – California 'In Basin'. The resulting net increase in acreage of the MPA (07) is therefore 12.9 acres – California 'In Basin'.

The MPA (07) proposes to implement a new half-pipe on High Roller trail that is partially constructed using soil from the run. The operational dimensions of the half-pipe (i.e., "with-snow") will be approximately 340 feet long by 50 feet wide by 17 feet high. The entire length, width and approximately one-half of the height will be regraded using soil. A runoff detention system will be incorporated into the design and operations in order to

prevent erosion and sedimentation caused by concentrated surface runoff. This design of the half-pipe will include a meandering surface channel in the bottom of the pipe that will be planted with appropriate native and adapted plant species. Cut and fill from the project will be balanced on-site to the greatest extent possible in order to prevent significant import or export of soil.

California - Out of Basin

The MP (96) approved portions of two new trails with a total additional acreage of 3.9 acres - California 'Out of Basin'. Since the MP (96), one new trail has been implemented for a total of 2.8 acres and one new trail has been approved to be constructed but has not been implemented. The MPA (07) proposes no new conventional trails. Widening projects on existing trails will total 1.1 acres. The resulting net increase in acreage of the MPA (07) is therefore 1.4 acres – California 'Out of Basin'.

Nevada – Trails

Nevada - In Basin

The MP (96) approved one new trail with a total additional acreage of 15.8 acres Nevada 'In Basin'. This trail has been implemented, although it is only 6.9 acres in area. The MPA (07) proposes to add one conventional trail, two gladed trails, and complete miscellaneous widening projects on existing trails.

The MPA (07) proposes a total of 23.4 acres of existing trail improvements or trail construction - Nevada 'In Basin'. The MPA (07) has also eliminated, reduced or minimized clearing on some MP (96) ski trail projects for a total of 12.4 acres – Nevada 'In Basin'. The resulting net increase in acreage of the MPA (07) is therefore 11.0 acres – Nevada 'In Basin'.

Nevada - Out of Basin

The MP (96) approved all or portions of nine new trails with a total additional acreage of 66.8 acres - Nevada 'Out of Basin'. Since the MP (96), two new trails have been implemented, totaling 3.1 acres. The MPA (07) proposes to add twelve conventional trails, one gladed trail, six transport trails, widen and complete miscellaneous widening projects on existing trails.

The MPA (07) proposes a total of 82.2 acres of existing trail improvements or trail construction - Nevada 'Out of Basin'. The MPA (07) has also eliminated, reduced or minimized clearing on some MP (96) ski trail projects for a total of 40.2 acres – Nevada 'Out of Basin'. The resulting net increase in acreage of the MPA (07) is therefore 42.0 acres – Nevada 'Out of Basin'.

Ski Trail Hazard Reduction Program

On several ski runs within the resort, a need exists to reduce dependency on man-made snow and associated resource use (i.e., water, electrical), while continuing to provide for skier safety and a consistent, high quality recreational opportunity. Additionally, with existing effective surface cover heights along newer trails of several feet, a snow depth of no less than 36-48 inches is necessary to provide coverage of obstacles (mainly poorly placed logs, tree stumps cut at two to three feet and large boulders) along the run prism. In 2004, a demonstration run hazard reduction project was implemented on Easy Street trail near the Big Easy lift at the top of the gondola. The full problem statement and prescription is attached in Appendix 3. The MPA (07) proposes

to expand the run hazard reduction prescription to many trails throughout the resort. The program objectives are shown below.

- Reduce height of existing effective surface cover (felled trees, large woody debris, stumps, and boulders) to between 12 to18 inches;
- Reduce consumption of electrical energy and water resources;
- Attain and maintain the 70% total effective surface cover as required by the Cumulative Watershed Effects (CWE) Analysis;
- Protect and maintain existing native woody shrub and groundcover populations;
- Provide a variety of surface cover for wildlife microhabitat.

Prescriptions will be developed on a site-specific (i.e., trail-specific) basis. This will include treatment and monitoring elements.

Table 3-3

2007 Master Plan Amended Facilities - Trails at Buildout

2007 Master Plan Amendment Trail #	1996 Master Plan Trail #	Trail Name	*slope Length (feet)*	*Width (feet)*	*Acreage (1) (acres)*	*Ability (skill class)*	*Change (2) from approved cond.*
California							
In Basin							
'pod' trails							
B1	1	EAST BOWL -THE FACE	3,220	220	16.3	EXP	*0.0*
B2	2	GUNBARREL	2,030	175	8.2	EXP	*0.0*
B3	3	PISTOL	1,220	130	3.6	EXP	*0.0*
B4	4	WEST BOWL	2,040	100	4.7	ADV	*0.0*
D1	5	WORLD CUP	1,000	260	6.0	LOW	*0.0*
E1	7	PATSY'S	1,730	200	7.9	NOV	*0.0*
E2	8	GROOVE	1,640	100	3.8	NOV	*0.0*
G1	9	MAGGIE'S	5,210	70	8.4	NOV	*0.0*
G2	10	CAT TRACK	1,070	40	1.0	LOW	*0.0*
G3	11	SWING TRAIL	1,190	30	0.8	LOW	*0.0*
G4	12	WATERFALL	760	200	3.5	ADV	*0.0*
G5	13	MOMBO MEADOWS	1,190	150	4.1	LOW	*0.0*
G6	14	MOMBO	1,700	25	1.0	LOW	*0.0*
G7	14	LOWER MOMBO	1,200	90	2.5	LOW	*0.0*
G8	15	POWDERBOWL	1,540	100	3.5	NOV	*0.0*
G9	NC	NEW - POWDERBOWL 2 (GLADED)	1,640	50	1.9	INT	*1.9*
H1	17	WOODS TRAIL	2,960	25	1.7	NOV	*0.0*
H2	18	BETTY'S SWING	1,080	30	0.7	INT	*0.0*
H3	19	RIDGE BOWL	1,400	100	3.2	INT	*0.0*
H4	19	RIDGE CHUTE	860	50	1.0	INT	*0.0*
H5	20	HIGH ROLLER (BETTY'S RUN)	3,680	150	12.7	INT	*0.0*
H6	20	DOUBLE DOWN (BETTY'S BOWL)	400	180	1.7	EXP	*0.0*
H7	21	LOWER BETTY'S	710	50	0.8	INT	*0.0*
H8	22	BETTY'S CUTOFF	570	130	1.7	INT	*0.0*
H9	23	CANYON/SKY CANYON - WIDENING	2,400	110	6.1	LOW	*0.0*
H10	24	JACKPOT (RUSUTSU) - WIDENING	1,860	100	4.3	LOW	*0.0*
H11	26	HIGH ROLLER (STEAMBOAT) - WIDENING	1,430	100	3.3	INT	*0.0*
H12	NC	NEW - DOUBLE DOWN CUTOFF	417	125	1.2	LOW	*1.2*
H13	NC	NEW - DOUBLE DOWN BYPASS	296	60	0.4	NOV	*0.4*
I1	25	LIZ'S - WIDENING	4,630	90	9.6	INT	*0.0*
I2	27	ELLIE'S SWING	2,140	70	3.4	INT	*0.0*
I3	27	UPPER ELLIE'S / ELLIE'S - WIDENING	4,490	120	12.4	ADV	*0.0*
I4	NC	NEW - SKIWAYS 1 (GLADED)	3,089	50	3.5	INT	*3.5*
I5	NC	NEW - SKIWAYS 2 (GLADED)	2,982	50	3.4	INT	*3.4*
K1	30	PERFECT RIDE (WEST BOWL)	1,260	300	8.7	NOV	*0.0*
*L1	31	LOWER SKI SCHOOL - WIDENING	500	200	2.3	BEG	*0.0*
M1	32	ENCHANTED FOREST	390	100	0.9	BEG	*0.0*
N1	33	PIONEER PLATTER PULL	700	150	2.4	BEG	*0.0*
O1	34	LEARN TO SKI CENTER	400	150	1.4	BEG	*0.0*
*GG1	29	(UPR.) CALIFORNIA TRAIL - WIDENING	2,900	130	8.7	LOW	*0.0*
*GG2	29A	SAM'S DREAM	1,500	125	4.3	LOW	*0.2*
*GG3	29B	TAMARACK RETURN	650	50	0.7	LOW	*0.7*
GG5	64	49ER	1,710	40	1.6	LOW	*0.0*
*GG6	82	CASCADE	1,950	175	7.8	LOW	*1.0*
*HH1	81	EASY STREET (1/2) (GLADED)	740	200	3.4	LOW	*-12.4*
*11	83	VON SCHMIDT'S - GONDOLA MEADOW	600	125	1.7	BEG	*-2.4*
non 'pod' transport trails							
1	6	ADVANCED ROUND-A-BOUT	17,000	40	15.6	NOV	*0.0*
1	6	ROUND-A-BOUT REALIGNMENT	1,691	40	1.6	NOV	*1.6*
2	16	RIDGE RUN	1,200	60	1.7	LOW	*0.0*
3	16	LOWER RIDGE RUN	4,610	150	15.9	NOV	*0.0*
4	28	SKYLINE TRAIL	3,100	40	2.8	LOW	*0.0*
5	29	CALIFORNIA TRAIL	6,010	40	5.5	LOW	*0.0*
5a	NC	CALIFORNIA TRAIL - ALTERNATIVE	1,700	40	1.6	BEG	*1.6*
10	67	VON SCHMIDT'S (1/4)	1,050	50	1.2	LOW	*0.0*
12	NC	NEW - MAGGIES CANYON (GLADED)	2,214	150	3.8	ADV	*3.8*
trail widening							
		SPOT WIDENING ON EXISTING TRAILS (G1, G5, H9, H10, H11, I1, I3, L1, GG1, 3, & 4)			9.8		*8.4*
In Basin Total			**115,649**		**251.4**		**12.9**
Out of Basin							
'pod' trails							
V1	51	MILKY WAY BOWL (2/3)	1,800	900	37.2	EXP	*0.0*
V3	53	DIPPER KNOB	1,730	30	1.2	INT	*0.0*
V4	54	BIG DIPPER (1/5)	1,080	150	3.7	INT	*0.0*
V7	57	DIPPER BOWL (1/2)	680	450	7.0	EXP	*0.0*
V8	58	ORION'S (1/2)	1,820	200	8.4	LOW	*0.0*
*V10	72	METEOR (1/2) - (GLADED)	950	130	2.8	INT	*0.5*
**V11	75	METEOR II (1/3) - (GLADED)	500	120	1.4	ADV	*-0.2*
GG4	61	SAND DUNES	1,610	80	3.0	INT	*0.0*
trail widening							
		SPOT WIDENING ON EXISTING TRAILS (V3, V4, V8, & GG4)			1.1		*1.1*
Out of Basin Total			**10,170**		**65.8**		**1.4**
California Total			**125,819**		**317.2**		**14.3**

Notes:
(1) Acreage on 'Gladed' trails are calculated at 50% tree density.
Acreage on 'Semi-Gladed' trails are calculated at 25% tree density. 'Semi-Gladed' trails can be considered conventional trails with tree islands.
(2) The change from Master Plan (1996) acreage to Master Plan Amendment (2007) proposed acreage.
* All or partially implemented since adoption of the Master Plan in 1996.
** Approved to be implemented but not yet constructed.
NC = Not considered in the Master Plan 1996.

Table 3-3 (cont'd)

2007 Master Plan Amended Facilities - Trails at Buildout

2007 Master Plan Amendment Trail #	1996 Master Plan Trail #	Trail Name	Length (feet)	Width (feet)	Acreage (1) (acres)	Ability (skill class)	Change (2) from approved cond.
Nevada							
In Basin							
'pod' trails							
Q1	40	BOULDER (EDGEWOOD) BOWL	3,000	250	17.2	NOV	0.0
S1	44	OLYMPIC DOWNHILL (3/5)	5,190	130	15.5	LOW	0.0
S2	45	BOULDER CHUTE (O75) - WIDENING	1,330	90	2.7	INT	0.0
S3	46	NORTH BOWL - WIDENING	3,770	90	7.8	ADV	0.0
S4	46	UPPER NORTH BOWL	1,260	145	4.2	ADV	0.0
S8	NC	NEW - NORTH BOWL 2	1,785	125	5.1	LOW	5.1
S9	NC	NEW - NORTH BOWL 3 (GLADED)	2,835	125	8.1	INT	8.1
S10	NC	NEW - NORTH BOWL 4 (GLADED)	2,730	125	7.8	INT	7.8
X1	68	BOULDER SKI SCHOOL	700	175	2.8	BEG	0.0
*HH1	81	EASY STREET (1/2)	740	200	3.4	LOW	-12.4
**HH2	83	VON SCHMIDT'S - GONDOLA MEADOW II	300	230	1.6	BEG	1.6
Non 'pod' transport trails							
9	65	STEVE'S	740	30	0.5	LOW	0.0
10	67	VON SCHMIDT'S (1/4)	1,050	50	1.2	LOW	0.0
trail widening							
		SPOT WIDENING ON EXISTING TRAILS (S2 & S3)			0.8		0.8
In Basin Total			25,430		78.8		11.0
Out of Basin							
'pod' trails							
R1	42	STAGECOACH	4,500	120	12.4	INT	0.0
R2	43	(UPPER) STAGECOACH	1,810	100	4.2	INT	0.0
R3	NC	NEW - STAGECOACH 2	2,100	125	6.0	INT	6.0
R4	NC	NEW - STAGECOACH 3	1,387	100	3.2	INT	3.2
S1	44	OLYMPIC DOWNHILL (2/5)	3,460	130	10.3	LOW	0.0
S5	48	CROSSOVER	4,500	65	6.7	LOW	0.0
S6	66	PONDEROSA (BONANZA BOWL)	2,160	80	4.0	INT	0.0
S7	66a	BONANZA (EAST PEAK)	2,150	80	3.9	INT	0.0
U1	49	PERIMETER	5,870	100	13.5	LOW	0.0
U2	50	GALAXY	4,900	90	10.1	LOW	0.0
U3	NC	NEW - GALAXY 1	2,520	125	7.2	NOV	7.2
U4	NC	NEW - GALAXY 2	788	125	2.3	NOV	2.3
V1	51	MILKY WAY BOWL (1/3)	900	900	18.6	EXP	0.0
V2	52	MILKY WAY	3,280	50	3.8	EXP	0.0
V4	54	BIG DIPPER (4/5)	4,300	150	14.8	INT	0.0
V5	54	LOWER BIG DIPPER	1,600	100	3.7	INT	0.0
V6	55	ORION'S BELT	580	80	1.1	LOW	0.0
V7	57	DIPPER BOWL (1/2)	680	450	7.0	EXP	0.0
V8	58	ORION'S (1/2)	1,820	200	8.4	LOW	0.0
V9	59	LOWER ORION'S - WIDENING	1,590	80	2.9	LOW	0.0
*V10	72	METEOR (1/2) - (GLADED)	825	100	0.9	INT	-1.4
**V11	75	METEOR II (2/3) - (GLADED)	1000	100	1.1	ADV	-1.7
V12	NC	NEW - ORION'S II	1200	125	3.4	INT	3.4
W1	56	ARIES (GLADED)	920	60	1.3	INT	0.0
W2	60	JACK'S	1,080	120	3.0	INT	0.0
W3	62	LITTLE DIPPER	2,600	175	10.4	INT	0.0
W4	63	COMET	3,250	190	14.2	LOW	0.0
W5	NC	NEW - ARIES II (GLADED)	1730	125	2.5	ADV	2.5
Z1	86	NEW - WELLS FARGO 1	1,875	120	5.2	INT	-2.0
Z2	87	NEW - WELLS FARGO 2	3,619	100	8.3	INT	-6.1
Z3	NC	NEW - WELLS FARGO 3	3,963	120	10.9	ADV	10.9
Z4	91	NEW - WELLS FARGO 4	3,718	120	10.2	INT	-2.7
Z5	NC	NEW - WELLS FARGO 5	1,203	100	2.8	INT	2.8
Z6	NC	NEW - WELLS FARGO 6	1,354	85	2.6	INT	2.5
Z7	NC	NEW - WELLS FARGO 7	2,411	120	6.6	ADV	6.0
Z8	89	NEW - WELLS FARGO 8	4,776	100	11.0	ADV	6.4
NA	73	MP '96 NEW - MPA '04 ELIMINATED	0	0	0.0	NA	-2.3
NA	76	MP '96 NEW - MPA '04 ELIMINATED	0	0	0.0	NA	-11.7
NA	77	MP '96 NEW - MPA '04 ELIMINATED	0	0	0.0	NA	-8.8
DD1	79	MOTT CANYON	2,000	2000	91.8	EXP	0.0
DD2	79	KILLEBREW	1,900	1000	43.6	EXP	0.0
*HH3	81A	SILVER SPUR	200	50	0.2	LOW	0.2
non 'pod' transport trails							
NA	41	OLD WAY HOME - RECLAIMED	9,090	30	0.0	BEG	-6.3
6	41	NEW - NEVADA TRAIL (WAY HOME)	8,590	30	5.9	BEG	5.6
7	41	LOWER NEVADA TRAIL	1,900	120	5.2	BEG	0.0
8	47	PEPI'S - WIDENING	3,500	50	4.0	LOW	0.2
10	67	VON SCHMIDT'S (1/4)	2,100	50	2.4	INT	0.0
14	NC	NEW - GALAXY ACCESS	2,234	125	6.4	INT	5.8
15	NC	NEW - SCORPION	2,754	100	6.3	INT	4.9
16	NC	NEW - STAGECOACH ACCESS	475	100	1.1	NOV	2.3
17	NC	NEW - WELLS TO GALAXY	1,578	75	2.7	NOV	0.7
18	NC	NEW - STAGECOACH SPUR	1,249	75	2.2	INT	2.1
trail widening							
		SPOT WIDENING ON EXISTING TRAILS (S5, V9, & 8)			2.1		2.1
Out of Basin Total			**124,249**		**416.5**		**42.0**
Nevada Total			**149,679**		**495.3**		**53.0**
Grand Total			**275,498**		**812.5**		**67.3**

Notes:
(1) Acreage on 'Gladed' trails are calculated at 50% tree density.
Acreage on 'Semi Gladed' trails are calculated at 25% tree density. Semi-Gladed trails can be considered conventiional trails with tree islands.
(2) The change from Master Plan (1996) acreage to Master Plan Amendment (2007) proposed acreage.
* All or partially implemented since adoption of the Master Plan in 1996.
** Approved to be implemented but not yet constructed.
NC = Not considered in the Master Plan 1996.

Table 3-4

2007 Master Plan Amended Facilities - Ski Trail Classification at Buildout

CA and NV

Ability Level	Acreage CA	Acreage NV	Acreage Total	Percent CA	Percent NV	Percent Total	Industry Standard
Beginner	10.3	15.6	25.9	3%	3%	3%	2%
Novice	67.4	27.7	95.1	21%	6%	12%	13%
Low Intermediate	73.0	96.4	169.4	23%	20%	21%	20%
Intermediate	62.9	136.0	197.8	19%	28%	24%	35%
Advanced Intermediate	25.8	46.0	71.8	8%	9%	9%	20%
Expert	73.9	164.8	238.7	23%	34%	29%	10%
Other	10.9	2.9	13.8	3%	1%	2%	
Totals	324.2	489.4	812.5	100%	100%	100%	100%

In and Out of Basin

Ability Level	Acreage In	Acreage Out	Acreage Total	Percent In	Percent Out	Percent Total	Industry Standard
Beginner	14.7	11.2	25.9	4%	2%	3%	2%
Novice	84.6	10.5	95.1	25%	2%	12%	13%
Low Intermediate	89.6	79.8	169.4	27%	17%	21%	20%
Intermediate	68.6	130.3	197.8	21%	27%	24%	35%
Advanced Intermediate	36.4	35.4	71.8	11%	7%	9%	20%
Expert	29.7	209.0	238.7	9%	44%	29%	10%
Other	10.6	3.2	13.8	3%	1%	2%	
Totals	334.2	479.4	812.5	100%	100%	100%	100%

3.3 SUMMER USES

As shown in the summer uses table below, the MP (96) approved the following summer uses: sightseeing/hiking, horseback riding, wildlife viewing/interpretive walks, restaurant dining, fishing and camp activities at East Peak Lake, and events at Von Schmidt's Flats. The MPA (07) proposes to continue summer activities proposed in the MP (96). Additionally, Heavenly is proposing to add a zipline adventure ride, a multi-faceted interpretive center, a performance amphitheater, an adventure center, and wedding chapel.

These uses will be accessed predominantly by the gondola. Hiking will continue to occur on the Tahoe Rim Trail and Tahoe Vista Trail. To improve the health, safety and quality of experience, Heavenly is also proposing to eliminate hiking on mountain roads by implementing other single and double track trails in forested and trail areas. The East Peak Lake area (out of the Lake Tahoe basin) will be used for all horseback activities. The lake

will also be available for fishing by permit issued from Heavenly. East Peak summer uses will be accessed primarily from the Stagecoach base area and the Top of the Gondola. The interpretive center, performance amphitheater, Zipline ride, Discovery Forest and wedding chapel will be located in the Von Schmidt's Flats Area (Gondola Top Station). Other special events will also occur at the Von Schmidt's Flats Area. These events may include musical / entertainment concerts, conferences or other social activities. Concert sound levels will continue to be regulated to comply with TRPA PAS noise levels. Sound levels will be controlled at the mixing board to comply with a pre-determined dB level to ensure CNEL compliance at the PAS boundary. A summary of the MPA (07) summer uses at buildout can be seen in Table 3-5.

Additional summer day use PAOT's will be requested as needed for additional summer day use activities in the Tahoe Region. A detailed map of the Gondola Top Station and Von Schmidt's Flats Area can be found in Chapter 4, labeled Figure 4-1, MPA (07) Top of the Gondola Site Plan.

Table 3-5

2007 Master Plan Amended Facilities - Summer Uses at Buildout

Activity	Description of Use	Access/Location
Hiking	Guided and unguided hiking on mountain - Tahoe Rim Trail (TRT) and Tahoe Vista Trail access. Develop other single or double track trails through the forest rather than on mountain roads. Improves health, safety, and quality of experience.	Gondola hiking trails starting and ending at the Top of the Gondola with destinations to the Gondola Mid Station, East Peak, East Peak Lake & Lodge and Sand Dunes Lodge
Zipline Adventure Ride	An adventure experience of riding two zipline cables from fixed platforms located at the Top of Tamarack Express lift down to the Top of the Gondola	Gondola & Tamarack Express lifts with hiking trail return to gondola.
Interpretive Center	Multi-faceted interpretive centers that allow the guest to move through a maze to learn about Lake Tahoe, the surrounding ecosystem, the Washoe Tribe and Lake Tahoe environmental partners/concerns. Center would include a small, natural elements amphitheater for presentations.	Gondola/open air facility directly at the top of the gondola.
Performance Amphitheater	An 1,100 person amphitheater for performing arts that has morning, afternoon, and evening folk, jazz, and classical music performances, plays and other relevant presentations	Gondola/located in the ski school meadow area at the top of the gondola
Discovery Forest	A summer and winter use - activity center that has outdoor adventure programs like climbing, gyro, super tramp, and 'summer snow' for winter activities in the summer. In the summer, a 1/4 mile barrier-free loop trail with interpretive information and displays will be offered.	Gondola/located at the top of the gondola
Wedding Chapel	A wedding chapel	Gondola/located at the top of the gondola
Camp Activities	General public & private organizations use of Heavenly facilities at East Peak Lake	Gondola/East Peak Lake
Fishing	Guided tours at East Peak Lake	Gondola/East Peak Lake
Horseback Riding	Horse and hay rides on existing roads. Stable located below East Peak Lake (out of basin)	Gondola using Heavenly trails and Nevada Base (TRT) areas/Von Schmidts Flat & Nevada trails

3.4 LODGE FACILITIES

The MP (96) envisioned expanding or redeveloping each existing lodge facility in the same location. The MP (96) also included new lodges at the Gondola Mid and Top Stations. Approval of the gondola lodges included acknowledging that any future commercial uses would utilize existing commercial floor area that would be relocated from the Top of the Tram.

The MPA (07) proposes a reconfiguration of existing lodges and approved expansion plans in order to better serve guests with higher quality facilities that are more strategically located. The reconfiguration plans will not exceed the total seating capacity that was approved in the MP (96). Approved floor area and seating capacities of the Top of the Gondola Lodge and at East Peak Lodge will be reduced in order to develop a new lodge along Sand Dunes Trail between the top stations of Tamarack Express and Comet Express lift. The Sand Dunes Lodge will be conveniently located near two major trail pods. This will result in more efficient services for guests who will be able to eat or use other lodge services without leaving the area they are skiing. It will also be sited to take advantage of panoramic views of the Lake Tahoe Basin and the nearby Great Basin.

The second significant relocation of lodge capacity is at the Sky Meadows Deck and Lodge site. Both the existing deck and barbecue facilities as well as the approved expansion of Sky Meadows Lodge will be relocated to a site near the top of the Powderbowl Express lift. This site will offer better accessibility for guests on the upper California side and potential lake views from the relocated lodge. In addition, the existing Sky Deck improvements will physically be removed and the underlying Sky Meadows stream environment zone will be restored.

For a discussion of the approved and proposed lodge facilities, please refer to Chapter 4, Development Areas. Table 3-6 summarizes the lodges by name, seats available and use breakdown.

Lodge Locations

Name	Location
In Basin	
California Lodge	Base of Lift B, California Side
Lakeview Lodge	Top of Lift A (Old Tramway), California Side
Snow Beach	Patsy's Run, Near Base of Lift E, California Side
Powderbowl Lodge	Top of Powderbowl lift , California Side
Boulder Lodge	Base of Lift Q, Nevada Side
Gondola Top Station (Von Schmidt's)	500 ft. from top of Gondola, California side
Gondola Mid-Station Restaurant	Adjacent to existing Mid-Station
Out of Basin	
Stagecoach Lodge	Base of Lift R, Nevada Side
East Peak Lodge	Base of Lift W, Nevada Side
Sand Dunes Lodge	1000 ft. from top of Lift W, California Side

Table 3-6

2007 Master Plan Amended Facilities - Lodges at Buildout

	California Base	Lakeview Lodge	Powderbowl Lodge	Snow Beach	Sky Meadows	Gondola Mid Station *	Gondola Top Station	Boulder Base	East Peak Lodge	Sand Dunes	Stagecoach Base	Totals
SEATS												0
approved	1,400	375	0	0	900	200	900	103	1,000	0	256	5,134
proposed	1,100	375	850	200	0	275	250	250	575	1,000	256	5,131
FOOD SERVICE (includes deck areas)												
approved	27,500	6,100	0	0	25,700	200	16,124	8,450	26,838	0	5,775	116,687
proposed	17,500	13,500	20,000	500	0	3,800	5,000	9,450	21,000	27,000	5,775	123,525
TICKET SALES												0
approved	2,000	0	0	0	0	0	0	1,200	0	0	400	3,600
proposed	2,000	0	0	0	0	0	0	1,200	0	0	400	3,600
RETAIL												0
approved	10,000	0	0	0	0	600	1,553	0	990	0	1,200	14,343
proposed	10,000	0	500	100	0	600	400	0	990	1,000	1,200	14,790
RESTROOMS												0
approved	3,600	1,000	0		1,950	850	1,306	440	1,860	0	800	11,806
proposed	3,600	1,000	1,500	500	0	850	800	440	1,860	2,500	800	13,850
ADMIN. OFFICES												0
approved	10,000	0	0	0	0	0	614	750	0	0	2,500	13,864
proposed	10,000	350	500	0	0	0	500	750	500	500	2,500	15,600
SKI RENTAL												0
approved	10,000	0	0	0	0	0	484	0	0	0	0	10,484
proposed	10,000	400	0	0	0	0	1,200	0	0	0	0	11,600
SKI SCHOOL												0
approved	7,000	400	0	0	0	0	4,017	3,100	0	0	0	14,517
proposed	7,000	400	500	0	0	0	2,000	3,100	0	500	0	13,500
EMPLOYEE CENTER												0
approved	10,000	0	0	0	0	0	552	3,400	0	0	0	13,952
proposed	10,000	0	1,000	0	0	0	557	3,400	0	1,000	0	15,957
ACCESS AREAS												0
approved	0	1,400	0	0	0	10,392	13,130	0	0	0	0	24,922
proposed	0	1,400	1,000	0	0	11,392	0	0	0	3,500	0	17,292
GONDOLA												0
approved						4,525	18,989					23,514
proposed						4,525	13,443					17,968
TOTALS												
approved	**80,100**	**8,900**	**0**	**0**	**27,650**	**16,567**	**56,769**	**17,340**	**29,688**	**0**	**10,675**	**247,689**
proposed	**70,100**	**17,050**	**25,000**	**1,100**	**0**	**21,167**	**23,900**	**18,340**	**24,350**	**36,000**	**10,675**	**247,682**

* Includes 1500 sf. of outdoor seating

* Includes existing observation deck area

Exterior Lighting

The MPA (07) proposes no changes to exterior lighting approved in the MP (96).

The MP (96) approved all exterior lighting be designed in keeping with TRPA Design Review Guidelines – Section 7 and Exterior Lighting Standards 30.8. The MPA (07) proposes to maintain the approved TRPA Design Guidelines – Section 7 and Exterior Lighting Standards 30.8, including the following standards:

1. Exterior lights shall not blink, flash or change intensity. String lights, building or roofline tube lighting, reflective or luminescent wall surfaces are prohibited.

2. Exterior lighting shall not be attached to trees except for the Christmas season.

3. Parking lot, walkway, and building lights shall be directed downward.

4. Fixture mounting height shall be appropriate to the purpose. The height shall not exceed the limitations

set forth in Chapter 22.

5. Outdoor lighting shall be used for purposes of illumination only, and shall not be designed for, or use as, an advertising display. Illumination for aesthetic or dramatic purposes of any buildings or surrounding landscape projecting above the horizontal is prohibited.

6. The commercial operation of searchlights for advertising or any other purpose is prohibited.

7. Seasonal lighting displays and lighting for special events which could conflict with other provisions of this section may be permitted on a temporary basis pursuant to Chapter 7.

The Guidelines recommend that lighting be designed as an integral part of the architecture and landscape and that consistent overall lighting and overly bright lighting be avoided. The guidelines recommended overall principles for the design of parking lot lighting, the lighting of structures, and height standards. In general, lighting was to be directed downward and away from adjacent properties, cut-off shields were to be incorporated and lighting was not to cause glare or excessive spillage to adjacent sites. To avoid significant impacts, each of the approved plan's lighted areas were to be consistent with this section of the Guidelines.

Exterior lighting from facilities located on the upper mountain shall not be visible from view off-site, except as noted below. This includes the gondola mid-station observation deck, the mid-station restaurant, and the gondola top station. Lighting levels from the mid-station restaurant will be designed to be minimally visible from key viewpoints below. Based on the screening capabilities of the actual site, and on available building technologies, it is possible to develop a small restaurant facility with interior and minimal walkway lighting and avoid significant adverse impacts or glow from key viewpoints.

At the base of the gondola in Heavenly Village, less than desirable conditions presently exist with respect to nighttime lighting levels throughout the village. Some areas are worse than others. As the village center, it is critical that safe and adequate lighting levels are provided for users. Additional pedestrian lighting has been agreed to in concept between the village partners and the City of South Lake Tahoe. The lighting improvements are needed in order to provide safe levels of lighting within the village for all users. The additional lighting will be installed in 2005.

At the California Main Lodge, five parking lot lights were installed in 2003 for employees leaving work after dark. The lights were approved by TRPA and are consistent with the lighting standards found in Chapter 30, including the use of cutoff shields. Heavenly proposes to use the existing lights on the World Cup run at the base of the California side for night skiing on World Cup run. Night skiing will be offered during the majority of the season, generally beginning by December 15 and ending at the end of April. The existing lights provide sufficient levels for safe nighttime use. It will be open from 5:00 pm until 10:00 pm seven days/week. Additional parking lot lighting may be needed in order to support the night skiing activities.

No changes are expected to lighting levels at other lodge facilities, including Stagecoach Lodge and Boulder Lodge.

3.5 MAINTENANCE FACILITIES

Maintenance activities at Heavenly can generally be divided in to three types - Vehicle Maintenance, Lift Maintenance, and Building & Facilities Maintenance. Each a description of each type, its location and MPA (07) upgrade is described below:

Vehicle Maintenance

Vehicle maintenance activities presently occur at two locations:

Light duty repair and maintenance is performed on Heavenly's rubber-tired fleet vehicles at the Lower Vehicle Maintenance Shop, which is located at the California Main Lodge. The existing facility is approximately 7,500 square feet in area.

Over-the-snow vehicles (i.e., snowmobiles and snow grooming cats) and summer construction equipment are maintained at the Upper Vehicle Maintenance Shop. The Upper Shop is located near the Top of the Tram on the California side. It is approximately 6,800 square feet in area and also contains a 7,200 square foot concrete apron adjacent to the building and a fuel storage area that is located within a continuous concrete block containment compound. It is easily accessible to the upper mountain areas and has predictable snow cover.

The MPA (07) proposes the following changes:

Significantly reduce the Lower Vehicle Maintenance Shop at the California Base Lodge site. Many of the existing maintenance functions can be moved off-site to the Kingsbury site or to another location. Only minor functions need to remain at the California Base. The area presently occupied by the Lower Vehicle Shop will be incorporated into the site's redevelopment plans.

The Upper Vehicle Maintenance Shop will not be relocated to new facility constructed near the top of the gondola in Von Schmidt's Flats. The Von Schmidt's Flats area will remain dedicated for skiers, sightseers, other guests and all activities related to recreation. It is not the optimal site for a large vehicle and lift maintenance facility. The Upper Shop will remain in its present location and will be expanded slightly in order to accommodate a growing fleet of snow grooming vehicles. A new parking area for the grooming vehicles will be created and maintained, and include water quality BMPs. Landscape or other screening, which is effective during winter, will be added in order to reduce the facilities visual magnitude. In addition, a new Lift Maintenance facility will be added near the Upper Shop. It will be housed in a separate structure as described below. All future site investigation and remediation conditions which have been placed on the site will remain in effect. The expansion plans and site screening enhancements are shown in Section 4.11.

Lift Maintenance

Currently, lift maintenance activities occur at three designated sites on the mountain:

West Bowl Lift Maintenance. The existing facility is located near the top of Groove lift (Lift F) and the top of the former West Bowl lift. It shares space with the Ski Patrol Face duty station. It occupies approximately 750 square feet of space. Lift maintenance facilities will be relocated into a new facility to be built near the Upper

Vehicle Maintenance Shop. Approximately 3,200 square feet of new space will be constructed for Lift Maintenance.

Top of Gondola Lift Maintenance. The original gondola project approval included a gondola grip maintenance bay and a wash bay on the lower level of the lodge, adjacent to the cabin storage area. Phase 1a of the lodge has been implemented. It includes approximately 850 square feet of lift maintenance of space for the gondola activities. No gondola storage area has been constructed.

East Peak Lift Maintenance. East Peak lift maintenance is located near the top of the existing Olympic lift (Lift T). It is housed in a building that also contains the East Peak Ski Patrol duty station. Lift maintenance space is limited to approximately 800 square feet. Modernization of the existing facility will occur, along with an expansion of approximately 900 square feet, which will accommodate additional parts and testing equipment.

Building and Facilities Maintenance

Building and facilities maintenance is located off-site. No additional space is planned for their operations within the resort.

Future space needs for maintenance activities are shown below in Table 3-7.

Table 3-7

2007 Master Plan Amended Facilities - Maintenance at Buildout

Location	**Use**	*Square feet*	**Master Plan Status**
Kingsbury Grade employee parking lot	Vehicle maintenance and repair, storage, parts and supplies	18,000 18,000	Approved in MP (96) Maintain in MPA (07)
Gondola Top Station (Von Schmidt's Flats area)	Remote storage, minor repair, fuel storage and building maintenance	20,600 0	Approved in MP(96) Delete in MPA (07)
Top of Tram	Vehicle maintenance and repair, storage, parts and supplies, fuel storage, lift maintenance	6,800 11,420 plus fuel storage area	Delete in MP (96) Reuse site in MPA (07)
Top of Tram Lift Maintenance	Lift maintenance and parts storage	480 3,200	Maintain in MP (96) Delete in MPA (07), relocate to a new facility near the upper shop
East Peak Lift Maintenance	Lift maintenance and parts storage	1,000 1,500	Maintain in MP (96) Expand in MPA (07)
Square Footage Total		**34,120**	

3.6 TRANSPORTATION FACILITIES

The MPA (07) proposes no significant changes to the approved MP (96) Transportation and Parking Facilities. Table 3-7 summarizes the MPA (07) Heavenly skier shuttle system, parking facilities and other related measures. No significant changes are proposed with the exception of the addition of the gondola and Heavenly Village. There, Heavenly maintains parking spaces near the gondola for gondola-based employees.

The gondola base entry to the resort is performing as planned with respect to traffic and air quality mitigation. It intercepts vehicle trips previously destined for the other resort portals (i.e., California Main Lodge, Boulder and Stagecoach Lodges). The new gondola portal has resulted in significant trip conversions from vehicle to walking trips from lodging properties around the gondola. Heavenly operates continuous express shuttle service between the Main Lodge and the gondola.

Since the 1996 Master Plan, Heavenly has been closely involved in funding and implementing the South Shore Coordinated Transit System (CTS). The CTS is now known as BlueGo. Heavenly's winter shuttle fleet is integrated into BlueGo. Planned, ongoing replacement of the shuttle bus fleet and the use of newer, cleaner-burning compressed natural gas (CNG) engines are part of the MPA (07) transportation element. Through several organizations, Heavenly continues to seek and support additional funding for ongoing vehicle replacement and for access to operational funding to improve the BlueGo system as a whole.

Use of Heavenly's free shuttle system has grown significantly and as a result, more transit vehicles are in operation during peak times and holiday periods. Twelve vehicles are in service at one time during normal operations of all lodges. During peak periods, between twenty and twenty-four vehicles are in service at one time. Shown below in Table 3-8, future build out will require fourteen transit vehicles in service at one time during normal operating times. In addition, Heavenly provides free rides on all fixed BlueGo routes during the winter season for all employees displaying valid identification.

Seasonal employee parking areas near the base of Ski Run Blvd. and U.S. Highway 50 have been implemented at existing summer use parking facilities in order to reduce vehicle miles of travel by intercepting employees near U.S. 50 during peak times and holiday periods. From the parking areas, regular shuttle bus transfers to the California Main Lodge are provided throughout the day.

Table 3-8

2007 Master Plan Amended Facilities - Parking & Transportation at Buildout

Parking Capacity - Autos and Skiers

	California	*Boulder*	*Stagecoach*	*Kingsbury*	*Heavenly Village*	***Total***
Surface Parking Spaces	1,310	450	410	0	0	**2,170**
Offsite Parking Spaces	0	600	400	200	0	**1,200**
Structured Parking Spaces	400	0	0	0	422	**822**
Total Autos	1,710	1,050	810	200	422	**4,192**
Skiers Per Auto	2.8	2.8	2.8	2.8	2.8	**2.8**
Total Skiers	4,788	2,940	2,268	560	1,182	**11,738**

Parking and Shuttle Capacity

Ski Area Parking	11,738
Within Walking Distance of Gondola	6,000
Ski Area Shuttle	3,250
Total	20,988

Ski Area Requirement for Shuttle Bus System

Skiers to be Shuttled (Average Day)	3,250
Number of Skiers per Bus	40
Sub-Total	81
Average Number of Trips per Hour	3
Sub-total	27
Access Periods (hours)	2
Number of Buses Required	14

3.7 SNOWMAKING

Chapter 5 of the MPA (07) contains the detailed snowmaking plan. Generally, no net increase in coverage in terms of total water use is proposed. Snowmaking system improvements are centered around improved safety, reliability and efficiency of energy and water consumption. The MPA (07) decreases snowmaking on in-basin trails by 7.5 acres, and increases it on out-of-basin trails by 37.3 acres for a net increase of 29.8 acres. However, snowmaking water consumption is increased by only 17.1 acre-feet annually based on more precise applications and using lower volumes on certain trails. Figure 3-2 identifies the existing and proposed snowmaking plan for the mountain. Table 3-9 provides detailed information on runs, acreage, depth of cover and other quantitative data proposed for future snowmaking implementation. Implementation of the run hazard reduction program to existing and new runs will significantly reduce the amount of water and electricity needed to safely and adequately cover the runs with snow. This program is described further in Chapter 5 and in the Appendix.

Since 1996, significant investment in the snowmaking system has occurred. Installations of newer fan-gun technology have produced significant reductions in noise levels, particularly at the California Main Lodge. This is reflected in the CNEL noise monitoring that is conducted annually. Energy and water consumption efficiencies have been improved by the use of fan guns and improved system controls. Installation of modern

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Figure 3-2	Heavenly MPA (07) Existing and Proposed Snowmaking	1(24 X 36)

control programs and systems has also improved system reliability, and safety. System problems are now more quickly detected and accidental spills associated with blowouts or leaks have been significantly reduced.

Heavenly's half-pipe terrain feature is located on High Roller Trail. The MPA (07) proposes the construction of a portion of the half-pipe in the ground using soil. Savings in terms of reduced water and energy consumption are expected because a large portion of the terrain feature will be permanently created. The entire width and approximately one-half of the height of the half-pipe will be constructed in place.

Removal of the rental air compressors from the California Base has significantly reduced noise and stationary source pollutants. Changes in technology are expected to continue to improve over time in the areas of fan-gun technology, system controls, energy efficiency and safety. Heavenly intends to continue to improve the snowmaking system as proven technologies become available. The improvement will continue trends already started in terms of system-wide control, efficiency and reliability.

Table 3-9

2007 Master Plan Amended Facilities - Snowmaking at Buildout

2007 Master Plan Amendment Trail #	1996 Master Plan Trail #	Trail Name	2007 Master Plan Amendment Snowmaking Action (1)	Length (feet)	Width (feet)	Acreage (acres)	Ability (skill class)	Acre ft. / Acre (2)	Acre ft. (3)	Change from Master Plan '96 Acres (4)	Change from Master Plan '96 Acre ft. (5)
California											
In Basin											
'pod' trails											
B1	1	EAST BOWL -THE FACE	EXISTING	3,220	220	16.3	EXP	5	81.3	*0*	*0.0*
B2	2	GUNBARREL	EXISTING	2,030	175	8.2	EXP	5	40.8	*0*	*0.0*
B3	3	PISTOL	REMOVE	1,220	130	0.0	EXP	5	0.0	*-3.6*	*-18.2*
B4	4	WEST BOWL	REMOVE	2,040	100	0.0	ADV	5	0.0	*-4.7*	*-23.4*
D1	5	WORLD CUP	EXISTING	1,000	260	6.0	LOW	2.7	16.1	*0*	*0.0*
E1	7	PATSY'S	EXISTING	1,730	200	7.9	NOV	2.7	21.4	*0*	*0.0*
E2	8	GROOVE	RETAIN	1,640	100	3.8	NOV	2.7	10.2	*0*	*0.0*
G1	9	MAGGIES	EXISTING	5,210	80	8.4	NOV	2.7	22.7	*0*	*0.0*
G2	10	CAT TRACK	EXISTING	1,070	40	1.0	LOW	2.7	2.7	*0*	*0.0*
G3	11	SWING TRAIL	NO ACTION	1,190	30	0.0	LOW	0	0.0	*0*	*0.0*
G4	12	WATERFALL	RETAIN	760	200	3.5	ADV	5	17.4	*0*	*0.0*
G5	13	MOMBO MEADOWS	EXISTING	1,190	170	4.1	LOW	2.7	11.1	*0*	*0.0*
G6	14	MOMBO	EXISTING	1,700	25	1.0	LOW	2.7	2.6	*0*	*0.0*
G7	14	LOWER MOMBO	EXISTING	1,200	90	2.5	LOW	2.7	6.7	*0*	*0.0*
G8	15	POWDERBOWL	RETAIN	1,540	100	3.5	NOV	4	14.1	*0*	*0.0*
G9	NC	NEW - POWDERBOWL II (GLADED)	NEW	1,640	50	1.9	INT	2.7	5.1	*1.9*	*5.1*
H1	17	WOODS TRAIL	NO ACTION	2,960	25	0.0	NOV	0	0.0	*0*	*0.0*
H2	18	BETTY'S SWING	NO ACTION	1,080	30	0.0	INT	0	0.0	*0*	*0.0*
H3	19	RIDGE BOWL	NO ACTION	1,400	100	0.0	INT	0	0.0	*0*	*0.0*
H4	19	RIDGE CHUTE	NO ACTION	860	50	0.0	INT	0	0.0	*0*	*0.0*
H5	20	HIGH ROLLER (BETTY'S RUN)	RETAIN	3,680	150	12.7	INT	2.7	34.2	*0*	*0.0*
H6	20	DOUBLE DOWN (BETTY'S BOWL)	NO ACTION	400	180	0.0	EXP	0	0.0	*0*	*0.0*
H7	21	LOWER BETTY'S	NO ACTION	710	50	0.0	INT	0	0.0	*0*	*0.0*
H8	22	BETTY'S CUTOFF	NO ACTION	570	130	0.0	INT	0	0.0	*0*	*0.0*
H9	23	CANYON - SKY CANYON	EXISTING	2,400	128	6.1	LOW	2.7	16.5	*0*	*0.0*
H10	24	JACKPOT (RUSUTSU)	EXISTING	1,860	125	4.3	LOW	2.7	11.6	*0*	*0.0*
H11	26	HIGH ROLLER (STEAMBOAT)	EXISTING	1,430	130	3.3	INT	2.7	8.9	*0*	*0.0*
H12	NC	NEW - BETTY'S CUTOFF	NO ACTION	600	150	0.0	LOW	0	0.0	*0*	*0.0*
H13	NC	NEW - BETTY'S ESCAPE	NO ACTION	250	60	0.0	NOV	0	0.0	*0*	*0.0*
I1	25	LIZ'S	EXISTING	4,630	100	9.6	INT	2.7	25.9	*0*	*0.0*
I2	27	ELLIE'S SWING - EXTENSION	RETAIN	2,740	70	3.4	INT	2.7	9.2	*0*	*0.0*
I3	27	UPPER ELLIE'S / ELLIE'S	EXISTING	4,490	130	12.4	ADV	4	49.6	*0*	*0.0*
I4	NC	NEW - SKIWAYS 1 (GLADED)	NO ACTION	3,089	50	0.0	INT	0	0.0	*0*	*0.0*
I5	NC	NEW - SKIWAYS 2 (GLADED)	NO ACTION	2,982	50	0.0	INT	0	0.0	*0*	*0.0*
K1	30	PERFECT RIDE (WEST BOWL)	EXISTING	1,260	300	8.7	NOV	2.7	23.4	*0*	*0.0*
*L1	31	LOWER SKI SCHOOL	EXISTING	500	200	2.3	BEG	2.7	6.2	*-1.4*	*-3.8*
M1	32	CHILDRENS SKI CENTER	EXISTING	390	100	0.9	BEG	2.7	2.4	*0*	*0.0*
N1	33	PIONEER PLATTER PULL	EXISTING	700	150	2.4	BEG	2.7	6.5	*0*	*0.0*
O1	34	LEARN TO SKI CENTER	EXISTING	400	150	1.4	BEG	2.7	3.7	*0*	*0.0*
*GG1	29	(UPR.) CALIFORNIA TRAIL	EXISTING	2,900	145	7.4	LOW	2.7	20.0	*-1.3*	*-3.4*
**GG2	29A	SAM'S DREAM	EXISTING - UNBUILT	1,430	130	4.3	LOW	4	17.1	*0.2*	*0.8*
*GG3	29B	TAMARACK RETURN	EXISTING	650	50	0.7	LOW	2.7	2.0	*0.7*	*2.0*
GG5	64	49ER	RETAIN	1,710	40	1.6	LOW	4	6.3	*0*	*0.0*
*GG6	82	CASCADE	EXISTING	2,800	125	8.0	LOW	4	32.1	*1.2*	*4.8*
*HH1	81	EASY STREET (1/2)	EXISTING	740	200	3.4	NOV	2.7	9.2	*-12.4*	*-33.6*
HH2	81	EASY STREET II (1/2)	NO ACTION	300	300	0.0	NOV	2.7	0.0	*0*	*0.0*
non 'pod' transport trails											
1	6	ADVANCED ROUND-A-BOUT	EXISTING	17,000	40	15.6	NOV	2.7	42.1	*0*	*0.0*
1	6	ROUND-A-BOUT - REALIGNMENT	NEW	1,691	40	1.6	NOV	2.7	4.2	*1.6*	*4.2*
2	16	RIDGE RUN	EXISTING	1,200	60	1.7	LOW	2.7	4.5	*0*	*0.0*
3	16	LOWER RIDGE RUN	EXISTING	4,610	155	15.9	NOV	2.7	42.9	*0*	*0.0*
4	28	SKYLINE TRAIL	RETAIN	3,100	54	2.8	LOW	2.7	7.6	*0*	*0.0*
5	29	CALIFORNIA TRAIL	EXISTING	6,010	50	5.5	LOW	2.7	14.9	*0*	*0.0*
5A	NC	NEW- CAL. TRAIL ALTERNATIVE	NEW	1,800	40	1.7	LOW	2.7	4.5	*1.7*	*4.5*
10	67	VON SCHMIDT'S (1/4)	RETAIN	1,050	50	1.2	LOW	2.7	3.3	*0*	*0.0*
**11	83	VON SCHMIDT'S - MEADOW	RETAIN	600	300	4.1	BEG	2.7	11.1	*0*	*0.0*
12	NC	NEW - MAGGIES CANYON (GLADED)	NO ACTION	1,890	150	0.0	ADV	0	0.0	*0*	*0.0*
In Basin Total						**210.8**			**672.0**	**-16.1**	**-61.0**
Out of Basin											
'pod' trails											
V1	51	MILKY WAY BOWL (2/3)	NO ACTION	1,800	900	0.0	EXP	0	0.0	*0*	*0.0*
V3	53	DIPPER KNOB	RETAIN	1,730	30	1.2	INT	2.7	3.2	*0*	*0.0*
V4	54	BIG DIPPER (1/5)	EXISTING	1,080	150	3.7	INT	2.7	10.0	*0*	*0.0*
V7	57	DIPPER BOWL (1/2)	NO ACTION	680	450	0.0	EXP	0	0.0	*0*	*0.0*
V8	58	ORION'S (1/2)	EXISTING	1,820	200	8.4	LOW	2.7	22.6	*0*	*0.0*
*V10	72	METEOR (1/2) - (GLADED)	EXISTING - UNBUILT	970	130	2.9	INT	2.7	7.8	*0.6*	*-1.5*
**V11	75	METEOR II (1/3) - (GLADED)	REMOVE	500	100	0.0	ADV	2.7	0.0	*-1.6*	*-6.5*
GG4	61	SAND DUNES	RETAIN	1,610	80	3.0	INT	2.7	8.0	*0*	*0.0*
Out of Basin Total						**19.1**			**51.6**	**-1**	**-8.0**
California Total						**229.9**			**723.6**	**-17.1**	**-69.0**

Notes:

(1) Action proposed: EXISTING = currently exists, RETAIN = approved in MP (96) - retain in MPA (07), REMOVE = approved in MP (96) - remove in MPA (07), NEW = not considered in MP (96) - proposed in MPA (07).

(2) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(3) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(4) Change from Master Plan (1996) Approved to Master Plan Amendment (2007) Proposed build out.

(5) Additional water requirements of Master Plan Amendment (2007) from Master Plan (1996).

* All or partially implemented since adoption of the Master Plan in 1996.

** Approved to be implemented but not yet constructed.

Table 3-9 cont'd

2007 Master Plan Amended Facilities - Snowmaking at Buildout

2007 Master Plan Amendment Trail #	1996 Master Plan Trail #	Trail Name	2007 Master Plan Amendment Snowmaking Action (1)	Length (feet)	Width (feet)	Acreage (acres)	Ability (skill class)	Acre ft. / Acre (2)	Acre ft. (3)	Change from Master Plan '96 Acres (4)	Change from Master Plan '96 Acre ft. (5)
Nevada											
In Basin											
'pod' trails											
Q1	40	BOULDER (EDGEWOOD) BOWL	EXISTING	3,000	250	17.2	NOV	4	68.9	*0*	*0*
S1	44	OLYMPIC DOWNHILL (3/5)	EXISTING	5,190	130	15.5	LOW	2.7	41.8	*0*	*0*
S2	45	BOULDER CHUTE (O75)	RETAIN	1,330	90	2.7	INT	4	11.0	*0*	*0*
S3	46	NORTH BOWL	RETAIN	3,770	90	7.8	ADV	5	38.9	*0*	*0*
S4	46	UPPER NORTH BOWL	RETAIN	1,260	145	4.2	ADV	5	21.0	*0*	*0*
S8	NC	NEW - NORTH BOWL 2	NEW	1,785	125	5.1	LOW	2.7	13.8	*5.1*	*13.8*
S9	NC	NEW - NORTH BOWL 3 (GLADED)	NEW	2,835	125	8.1	INT	2.7	22.0	*8.1*	*22.0*
S10	NC	NEW - NORTH BOWL 4 (GLADED)	NEW	2,730	125	7.8	INT	2.7	21.2	*7.8*	*21.2*
X1	68	BOULDER SKI SCHOOL	EXISTING	700	175	2.8	BEG	2.7	7.6	*0*	*0*
*HH1	81	EASY STREET (1/2)	EXISTING	740	200	3.4	NOV	2.7	9.2	*-12.4*	*-33.6*
HH2	81	EASY STREET II (1/2)	NO ACTION	300	300	0.0	NOV	0	0.0	*0*	*0*
non 'pod' transport trails											
9	65	STEVE'S	EXISTING	740	30	0.5	LOW	2.7	1.4	*0*	*0.00*
10	67	VON SCHMIDT'S (1/4)	RETAIN	1,050	50	1.2	LOW	2.7	3.3	*0*	*0.00*
In Basin Total						**76.5**			**259.9**	**8.6**	**23.4**
Out of Basin											
'pod' trails											
R1	42	STAGECOACH	RETAIN	4,500	120	12.4	INT	4	49.6	*0*	*0.0*
R2	43	(UPPER) STAGECOACH	RETAIN	1,810	100	4.2	INT	4	16.6	*0*	*0.0*
R3	NC	NEW - STAGECOACH 2	NO ACTION	2,070	150	0.0	INT	5	0.0	*0*	*0.0*
R4	NC	NEW - STAGECOACH 3	NO ACTION	1,245	125	0.0	INT	5	0.0	*0*	*0.0*
S1	44	OLYMPIC DOWNHILL (2/5)	EXISTING	3,460	130	10.3	LOW	2.7	27.9	*0*	*0.0*
S5	48	CROSSOVER	EXISTING	4,500	65	6.7	LOW	2.7	18.1	*0*	*0.0*
S6	66	PONDEROSA (BONANZA BOWL)	RETAIN	2,160	80	4.0	INT	4	15.9	*0*	*0.0*
S7	66a	EAST PEAK	RETAIN	2,150	80	3.9	INT	4	15.8	*0*	*0.0*
U1	49	PERIMETER	RETAIN	5,870	100	13.5	LOW	2.7	36.4	*0*	*0.0*
U2	50	GALAXY	RETAIN	4,900	90	10.1	LOW	2.7	27.3	*0*	*0.0*
U3	NC	NEW - GALAXY 1	NEW	2,520	150	8.7	NOV	2.7	23.4	*8.7*	*23.4*
U4	NC	NEW - GALAXY 2	NEW	788	150	2.7	NOV	2.7	7.3	*2.7*	*7.3*
V1	51	MILKY WAY BOWL (1/3)	NO ACTION	900	900	0.0	EXP	0	0.0	*0*	*0.0*
V2	52	UPPER PERIMETER (RIM TRAIL)	NO ACTION	3,280	50	0.0	EXP	0	0.0	*0*	*0.0*
V4	54	BIG DIPPER (4/5)	EXISTING	4,300	150	14.8	INT	2.7	40.0	*0*	*0.0*
V5	54	LOWER BIG DIPPER	RETAIN	1,600	100	3.7	INT	2.7	9.9	*0*	*0.0*
V6	55	ORION'S BELT	EXISTING	580	80	1.1	LOW	2.7	2.9	*0*	*0.0*
V7	57	DIPPER BOWL (1/2)	NO ACTION	680	450	0.0	EXP	5	0.0	*0*	*0.0*
V8	58	ORION'S (1/2)	EXISTING	1,820	200	8.4	LOW	2.7	22.6	*0*	*0.0*
V9	59	LOWER ORION'S	EXISTING	1,590	108	2.9	LOW	2.7	7.8	*0*	*0.0*
*V10	72	METEOR (1/2) - (GLADED)	EXISTING - UNBUILT	985	130	2.9	INT	2.7	7.8	*0.6*	*-1.5*
**V11	75	METEOR II (2/3) - (GLADED)	REMOVE	1,000	100	0.0	ADV	2.7	0.0	*-3.2*	*-12.9*
V12	NC	NEW - ORION'S II	NEW	1,200	125	3.4	INT	2.7	9.3	*3.4*	*9.3*
W1	56	ARIES	RETAIN	920	60	1.3	INT	2.7	3.4	*0*	*0.0*
W2	60	JACK'S	NEW	1,080	120	3.0	INT	2.7	8.0	*3*	*8.0*
W3	62	LITTLE DIPPER	EXISTING	2,600	175	10.4	INT	5	52.2	*0*	*0.0*
W4	63	COMET	EXISTING	3,250	190	14.2	LOW	2.7	38.3	*0*	*0.0*
W5	NC	NEW - ARIES II (GLADED)	NO ACTION	1,730	150	0.0	ADV	0	0.0	*0*	*0.0*
Z1	86	NEW - WELLS FARGO 1	NEW	1,875	125	5.4	INT	2.7	14.5	*5.4*	*14.5*
Z2	87	NEW - WELLS FARGO 2	RETAIN	3,619	100	8.3	INT	2.7	22.4	*-6.1*	*-35.3*
Z3	NC	NEW - WELLS FARGO 3	NEW	3,963	125	11.4	ADV	2.7	30.7	*11.4*	*30.7*
Z4	91	NEW - WELLS FARGO 4	RETAIN	3,718	150	12.8	INT	2.7	34.6	*-0.1*	*-0.4*
Z5	NC	NEW - WELLS FARGO 5	NEW	1,203	100	2.8	INT	2.7	7.5	*2.8*	*7.5*
Z6	NC	NEW - WELLS FARGO 6	NO ACTION	1,354	85	0.0	INT	0	0.0	*0*	*0.0*
Z7	NC	NEW - WELLS FARGO 7	NEW	2,411	125	6.9	ADV	2.7	18.7	*6.9*	*18.7*
Z8	89	NEW - WELLS FARGO 8	NO ACTION	4,776	100	0.0	ADV	0	0.0	*0*	*0.0*
NA	73	MP '96 NEW - MPA '04 ELIMINATED	REMOVE	3,280	30	0.0	NA	4	0.0	*-2.3*	*-9.0*
NA	76	MP '96 NEW - MPA '04 ELIMINATED	REMOVE	3,390	150	0.0	NA	0	0.0	*0*	*0.0*
NA	77	MP '96 NEW - MPA '04 ELIMINATED	REMOVE	2,570	150	0.0	NA	4	0.0	*-8.8*	*-35.4*
DD1	79	MOTT CANYON	NO ACTION	2,000	2,000	0.0	EXP	0	0.0	*0*	*0.0*
DD2	79	KILLEBREW	NO ACTION	1,900	1,000	0.0	EXP	0	0.0	*0*	*0.0*
*HH3	81A	SILVER SPUR	NO ACTION	450	50	0.5	LOW	2.7	1.4	*0.5*	*1.4*
Non 'pod' transport trails											
NA	41	OLD WAY HOME	REMOVE	9,090	30	0.0	BEG	2.7	0.0	*-6.3*	*-16.9*
6	41	NEW - NEVADA TRAIL (WAY HOME)	NEW	8,590	30	5.9	BEG	2.7	16.0	*5.9*	*16.0*
7	41	LOWER WAY HOME	EXISTING	1,900	120	5.2	BEG	2.7	14.1	*0*	*0.0*
8	47	PEPI'S	EXISTING	3,500	50	4.0	LOW	2.7	10.8	*0*	*0.0*
10	67	VON SCHMIDT'S (1/2)	RETAIN	2,100	50	2.4	INT	2.7	6.5	*0*	*0.0*
14	NC	NEW - GALAXY ACCESS	NEW	2,234	125	6.4	INT	2.7	17.3	*6.4*	*17.3*
15	NC	NEW - SCORPION	NEW	2,754	100	6.3	INT	2.7	17.1	*6.3*	*17.1*
16	NC	NEW - FARGO TO GALAXY	NEW	475	100	1.1	NOV	2.7	2.9	*1.1*	*2.9*
17	NC	NEW - FARGO TO STAGECOACH	NO ACTION	1,578	75	0.0	NOV	0	0.0	*0*	*0.0*
18	NC	NEW - STAGECOACH SPUR	NO ACTION	1,249	75	0.0	INT	0	0.0	*0*	*0.0*
Out of Basin Total						**222.0**			**655.2**	**38.3**	**62.7**
Nevada Total						**298.4**			**915.1**	**46.9**	**86.1**
Grand Total						**528.3**			**1,638.7**	**29.8**	**17.1**

Notes:

(1) Action proposed: EXISTING = currently exists, RETAIN = approved in MP (96) - retain in MPA (07), REMOVE = approved in MP (96) - remove in MPA (07), NEW = not considered in MP (96) - proposed in MPA (07).

(2) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(3) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(4) Change from Master Plan (1996) Approved to Master Plan Amendment (2007) Proposed build out.

(5) Additional water requirements of Master Plan Amendment (2007) from Master Plan (1996).

* All or partially implemented since adoption of the Master Plan in 1996.

** Approved to be implemented but not yet constructed.

Table 3-10

2007 Master Plan Amended Facilities - Snowmaking Ski Trail Classification at Buildout

CA and NV

Ability Level	Acreage CA	Acreage NV	Acreage Total	Percent CA	Percent NV	Percent Total	Industry Standard
Beginner	11.1	13.9	25.0	5%	5%	5%	2%
Novice	68.8	29.8	98.6	30%	10%	19%	13%
Low Intermediate	69.3	94.3	163.6	30%	32%	31%	20%
Intermediate	43.1	125.8	168.9	18%	43%	32%	35%
Advanced Intermediate	16.4	31.3	47.7	7%	11%	9%	20%
Expert	24.5	0.0	24.5	11%	0%	5%	10%
Totals	233.2	295.1	528.3	100%	100%	100%	100%

In and Out of Basin

Ability Level	Acreage In	Acreage Out	Acreage Total	Percent In	Percent Out	Percent Total	Industry Standard
Beginner	13.9	11.1	25.0	5%	5%	5%	2%
Novice	89.8	9.2	99.0	31%	4%	19%	13%
Low Intermediate	81.9	80.8	162.7	28%	34%	31%	20%
Intermediate	49.1	119.8	168.9	17%	50%	32%	35%
Advanced Intermediate	28.9	19.3	48.2	10%	8%	9%	20%
Expert	24.5	0.0	24.5	9%	0%	5%	10%
Totals	288.1	240.2	528.3	100%	100%	100%	100%

3.8 GROOMING EQUIPMENT

The total skiable acreage developed under the Master Plan is approximately 840 acres. Ungroomed trails in areas such as Milky Way Bowl, Mott and Killebrew Canyons and the Skiways Glades equal approximately 160 acres. Total groomable acreage is approximately 680 acres. Grooming equipment will be stored and maintained at the Upper Vehicle Maintenance Shop. Heavenly presently attains this standard with 21 total snow grooming vehicles. This includes two specialty winch cats, and one which uses the pipecutter for half pipe grooming.

3.9 UTILITIES

Sewer Service

Sewer service is provided differently in each state. The entire resort is connected to one of two sewer systems. On the California side, Heavenly is served by the South Tahoe Public Utility District (STPUD). The treatment plant is located in South Lake Tahoe. In 1998, the entire upper mountain on the California side was annexed

into the STPUD service district boundary. Heavenly and the Forest Service maintain reserve sewer capacity within the STPUD district boundary for future facilities which are located on national forest lands.

On the Nevada side, sewer service is provided from the Kingsbury General Improvement District (KGID). KGID pipelines transport sewage from Heavenly to the Douglas County Sewer Improvement District (DCSID) treatment plant in Round Hill. KGID and Heavenly have reserved capacity in the DCSID treatment plant for future development.

Water Service

Potable water is provided by STPUD at the California Main Lodge and at the base of the gondola by STPUD. In Nevada, potable water is provided by KGID at Boulder Lodge and at Stagecoach Lodge. Domestic water for lodge and maintenance facilities on the upper mountain is provided using individual small community water systems with wells. The on-mountain system will be expanded in order to serve the new on-mountain lodges. Both STPUD and KGID sell excess water to Heavenly for snowmaking use. Additional delivery capacity will ultimately be needed within Heavenly zone of the STPUD system in order to support full build out of snowmaking on the California side.

Electricity

Electricity in both states is provided by Sierra Pacific Power under separate state regulations and rate tariffs. In the long-term, modifications to the Kingsbury substation and the existing distribution lines leading to East Peak Pump house on the Nevada side may be needed. On the California side, future improvements will be needed to the Stateline substation, or a separate dedicated substation, and possibly to the existing on-mountain distribution lines.

Natural Gas

Natural gas is provided in California and Nevada by Southwest Gas. In California, natural gas is only available at the California Main Lodge and the gondola. It is not presently available higher up the mountain. In Nevada, natural gas is available at both base lodges and the entire upper mountain. Natural gas is expected to be extended in order to serve the Sand Dunes Lodge site.

Telephone

Local telephone service is provided in California by SBC (formerly Pacific Bell) and in Nevada by Verizon Telephone (formerly GTE). In the past two years, Heavenly has made significant capital and operating improvements to its telephone system. It now operates as a single, unified system that includes all on-mountain and administrative facilities, rather than two independent systems, one in each state.

Solid Waste

Solid waste is collected on both sides of the resort by South Tahoe Refuse, under existing franchise agreements with Douglas County, El Dorado County and the City of South Lake Tahoe.

3.10 SIGNAGE

On-mountain signage and information will be consistent with Forest Service Winter Sports Facilities standards and guidelines. In 2003/2004, Heavenly implemented the first phase of a way-finding and trail sign replacement project in order to improve information available to guests and address mountain aesthetics. Sign frame materials and colors, as well as sign face colors were made more consistent with the Forest Service Built Environment Image Guide (B.E.I.G). The sign replacement project will continue and cover the entire resort.

3.11 ANALYSIS OF COMFORTABLE CARRYING CAPACITY (CCC)

Tables 3-11 and 3-12 display the CCC and density analysis for the proposed facilities.

3.12 MASTER PLAN IMPLEMENTATION/PHASING

The phasing plan shown on Table 3-13 reflects Heavenly's best judgment based on existing conditions (2007) and may be further modified in response to changing conditions, market preferences, and other circumstances. Modifications to this phasing plan will not require further amendment to this Master Plan Amendment. The Cumulative Watershed Effects implementation schedule developed for the Master Plan EIR/EIS/EIS is incorporated into this phasing schedule following certification of the environmental document and prior to adoption of the Master Plan.

3.13 LAND COVERAGE

Generally, land coverage will be required for projects within the Lake Tahoe Region. Many projects will replace existing facilities such as a lift replacement or a lodge improvement. In those cases, existing land coverage associated with the existing facility will be used. Land coverage for expansions of existing facilities and for other projects will come from either of two sources:

- Remaining potential land coverage; or
- Relocated land coverage from existing facilities within the project area that has been verified and banked.

Additional or relocated land coverage will be needed in order to implement the following In-Region elements of the plan, including:

- Lift Replacements
- Lift Additions
- California Lodge & Kids' Camp Redevelopment
- Powderbowl Lodge
- Top of Gondola Lodge
- Gondola Mid-Station Restaurant
- Gondola Mid-Station OHV Trail

- Gondola Hiking Trails
- Discovery Forest Trail
- Lakeview Lodge Pedestrian Path
- Snow Beach Barbecue Expansion
- Upper Vehicle Shop Improvements
- New Lift Maintenance Facility
- East Peak Lift Maintenance Facility Expansion
- Boulder Lodge Deck Expansion
- Gondola Emergency Evacuation Trail
- Angel's Roost Communications Site Expansion

Several existing on-site roadways have been identified for decommissioning and retirement. Based on the CWE analysis contained in the MP (96) and the existing land coverage that has been banked as part of the gondola project, there were 12.01 acres of roadway available for decommissioning and obliteration (7.59 acres within watershed CA-1, 2.29 acres in watershed CA-6, and 2.13 acres within watershed NV-3).

Since 1996, TRPA has approved the banking of 1.42 acres of restored roadway in watershed CA-1. Some of the coverage was used for the gondola project and other subsequent, smaller projects. Heavenly has removed existing land coverage as part of other projects that have been implemented since 1996. The projects have not had a final inspection completed by TRPA, therefore, the additional coverage to be banked has not yet been recognized. That process will be competed prior to adoption of the Master Plan Amendment.

Table 3-11

2007 Master Plan Amended Facilities - Classification of CCC at Buildout

Lift	Name	MPA (07) Proposed Type	Length Feet	Vertical Feet	Rope Speed Feet per/min	Hourly Capacity	Loading Efficiency	VTF/HR (000's)	CCC saot (1)
California / In basin									
A	TRAMWAY EXPRESS	DETACHABLE	7,900	2,135	1,000	2,400	95%	5,124	1,381
B	GUNBARREL EXPRESS	DETACHABLE QUAD	3,390	1,591	1,000	2,400	95%	3,818	774
D	WORLD CUP	FIXED DOUBLE	1,100	320	400	900	85%	288	215
E	PATSY'S	DETACHABLE	1,160	217	400	2,400	95%	521	689
F	GROOVE	SURFACE LIFT(S)	80	34	400	600	70%	20	87
G-1	POWDERBOWL EXPRESS	DETACHABLE SIX	2,360	810	1,000	3,400	95%	2,754	1,017
H	CANYON EXPRESS	DETACHABLE QUAD	3,800	1,000	1,000	2,600	95%	2,600	951
I	SKY EXPRESS	DETACHABLE SIX	4,390	1,420	1,000	2,400	95%	3,408	944
K	PERFECT RIDE	QUAD	970	180	450	1,400	85%	252	334
L	CA SKI SCHOOL	SURFACE LIFT(S)	180	20	150	400	70%	8	64
L-1	CA SKI SCHOOL II	SURFACE LIFT(S)	250	26	150	400	70%	10	67
M	ENCHANTED FOREST II	SURFACE LIFT(S)	380	60	150	400	70%	24	73
M-1	MAGIC CARPET	BELT	80	10	150	120	70%	1	18
N	PIONEER I	QUAD	380	40	150	600	85%	24	133
O	PIONEER II	SURFACE LIFT(S)	175	20	150	500	70%	10	80
GG	TAMARACK EXPRESS	DETACHABLE SIX	2,630	571	1,000	2,400	95%	1,370	748
HH	VON SCHMIDT'S I	HANDLE TOW	520	45	150	250	70%	11	49
HH	VON SCHMIDT'S II	HANDLE TOW	450	70	150	250	70%	18	47
HH	VON SCHMIDT'S CARPET	BELT	100	15	150	450	70%	7	68
*II	STATELINE GONDOLA	GONDOLA	12,010	2,874	900	2,800	95%	8,047	0
**JJ-1	GONDOLA TRANSPORT	SURFACE TRANSPORT	300	4	150	0	70%	0	0
**JJ-2	GONDOLA TRANSPORT II	SURFACE TRANSPORT	250	2		0	70%	0	0
**TL-1	TUBING LIFT I	TUBING	400	60		0	50%	0	0
**TL-2	TUBING LIFT II	TUBING	400	80		0	50%	0	0
			43,655	11,604		27,070		28,316	**7,739**
Nevada / In basin									
J	VON SCHMIDT'S	QUAD	4,450	685	1,000	1,800	85%	1,233	638
HH-1	BIG EASY	FIXED QUAD	960	140	400	1,400	85%	196	338
Q	BOULDER	QUAD	2,870	440	400	2,200	90%	1,056	949
S	NORTH BOWL EXPRESS	DETACHABLE	5,290	1,290	400	2,400	95%	3,354	1,345
T	OLYMPIC EXPRESS	DETACHABLE	0	0	400	2,400	0%	0	0
X	BOULDER MC I	BELT	400	30	150	750	70%	23	138
X-1	BOULDER MC II	BELT	250	10	150	400	70%	4	67
			8,810	1,770		11,350		5,520	**3,475**
Nevada / Out of basin									
R	STAGECOACH EXPRESS	DETACHABLE QUAD	5,710	1,590	1,000	2,400	95%	4,134	1,069
U	GALAXY EXPRESS	DETACHABLE	5,440	1,020	400	2,400	95%	2,448	1,370
V	DIPPER EXPRESS	DETACHABLE	4,910	1,140	1,000	2,600	95%	2,964	1,085
W	COMET EXPRESS	DETACHABLE	3,580	880	1,000	2,400	95%	2,112	854
Z	WELLS FARGO EXPRESS	DETACHABLE	4,300	1,500	1,000	2,400	95%	3,600	934
DD	MOTT CANYON	DETACHABLE	4,200	1,475	400	2,000	95%	2,950	908
EE	ALDERMANS	ELIMINATE	0	0		0	0%	0	0
**KK	EAST LAKE TRANSPORT	SURFACE TRANSPORT	300	50	150	0	70%	0	0
			28,440	7,655		14,200		17,890	**6,220**
Grand Total			80,905	21,029	0	52,620		51,726	**17,434**

Notes:

(1) Skiers At One Time (SAOT) is calculated using the following formula:
SAOT = skiers per minute (((lift ride time + maze wait time) * 100%) + skiing time * returning skier utilization)

* serves a transportation function only - no CCC allocated

** serves a surface transportation function only - no uphill capacity or CCC allocated

Table 3-12

2007 Master Plan Amended Facilities - Density Analysis at Buildout

Lift	Name	Lift Capacity *skiers*	Trail Capacity *skiers*	Comparison 1 *trails:lifts*	Total Pod Acreage *acres*	Average Density *skiers per acre*	Optimum Density *skiers per acre*	Comparison 2 *average:optimum*
California / In basin								
A	TRAMWAY EXPRESS	1,381	0	transport	0.0	0.0	0.0	transport
B	GUNBARREL EXPRESS	774	830	107%	47.7	17.4	15.6	112%
D	WORLD CUP	215	212	99%	8.3	25.5	27.0	95%
E	PATSY'S	689	369	54%	12.3	30.0	30.0	100%
F	GROOVE	87	30	34%	1.0	30.0	30.0	100%
G-1	POWDERBOWL EXPRESS	1,017	750	74%	48.9	15.3	21.0	73%
H	CANYON EXPRESS	951	992	104%	46.0	21.6	21.9	98%
I	SKY EXPRESS	944	1,258	133%	93.7	13.4	18.2	74%
K	PERFECT RIDE	334	328	98%	10.9	30.1	30.0	100%
L	CA SKI SCHOOL	64	117	183%	3.9	30.0	30.0	100%
L-1	CA SKI SCHOOL II	67	32	48%	1.1	29.1	30.0	97%
M	ENCHANTED FOREST II	73	85	116%	2.0	42.5	30.0	142%
M-1	MAGIC CARPET	18	26	144%	0.9	28.9	30.0	96%
N	PIONEER I	133	76	57%	2.5	30.4	30.0	101%
O	PIONEER II	80	43	54%	1.4	30.7	30.0	102%
GG	TAMARACK EXPRESS	748	686	92%	28.6	24.0	24.0	100%
HH (PORTION)	VON SCHMIDTS I	49	52	106%	2.2	23.6	24.0	98%
*HH (PORTION)	VON SCHMIDTS II	47	52	111%	2.2	23.6	24.0	98%
HH (PORTION)	VON SCHMIDTS CARPET	68	52	76%	2.2	23.6	24.0	98%
II	STATELINE GONDOLA	0	0	transport	0.0	0.0	0.0	0%
JJ-1	GONDOLA TRANSPORT	0	0	transport	0.0	0.0	0.0	0%
JJ-2	GONDOLA TRANSPORT II	0	0	transport	0.0	0.0	0.0	0%
		7,739			315.8			
Nevada / In basin								
*J	VON SCHMIDT'S	638	0	transport	0.0	0.0	0.0	transport
HH-1	BIG EASY	338	218	64%	9.1	24.0	24.0	100%
Q	BOULDER	949	542	57%	18.1	29.9	30.0	100%
S	NORTH BOWL EXPRESS	1,345	1,236	85%	130.9	9.4	21.0	45%
T	OLYMPIC EXPRESS	0	0	0%	0.0	0.0	0.0	0%
X	BOULDER MC I	138	44	32%	1.5	29.3	30.0	98%
X-1	BOULDER MC II	67	44	66%	1.5	29.3	30.0	98%
		3,475			152.0			
Nevada / Out of basin								
R	STAGECOACH EXPRESS	1,069	918	86%	42.6	21.5	22.3	97%
U	GALAXY EXPRESS	1,370	1,335	97%	164.5	8.1	23.0	35%
V	DIPPER EXPRESS	1,085	995	92%	77.1	12.9	13.4	96%
W	COMET EXPRESS	854	866	101%	40.9	21.2	20.7	102%
Z	WELLS FARGO EXPRESS	934	1,036	111%	60.1	17.2	20.6	84%
DD	MOTT CANYON	908	411	45%	139.2	3.0	15.4	19%
EE	ALDERMANS	0	0	eliminate	0.0	0.0	15.4	0%
KK	EAST LAKE TRANSPORT	0	0	transport	0.0	0.0	0.0	0%
		6,220			524.4			
Grand Total		**17,434**			**992.2**			

Notes: Definintions of Table 3-12 Headings

Lift Capacity = The Capacity of the lift (see Table2-25 for a discussion of the Capacity).
Trail Capacity = The Capacity of the trail (calculated by multiplying the trail acreage by the acceptable skier density for the trail).
Comparison 1 = Trail Capacity divided by lift capacity (shows whether the trail capacity is in balance with the lift capacity)
Total Pod Acreage = Total acreage of the lift pod (includes tree skiing acreage that is consitently skiable - calculated at a reduced density)
Average Density = The trail capacity divided by the total pod acreage (shows the average number of skiers per acre on the trail).
Optimum Density = The optimum number of skiers per acre for the trail (based on skill class of the trail) as determined by industry standards.
Comparison 2 = The average density divided by the optimum density (shows whether the number of skiers per acre in that pod are in balance with industry standards).

Table 3-13

2007 Master Plan Amended Facilities - Estimated Project Phasing

Phase One

Replace Lift S (North Bowl) and Lift T (Olympic) with Detachable Quads
- Trails S8, S9, and S10 with snowmaking

Construct Powderbowl Lodge and Utilities
Replace / Relocate Lift DD (Mott Canyon) with Quad
Lift J (Big Juniper) Construction - Quad
- Trails G9, I4, I5, S8, S9, S10, W5, 1, 6
- Trail 4 (regrade and snowmaking)

Construct Service Road from Top of Gondola to Mid Station
Construct New Hiking, Cross-Country, and Snowshoe Trails at Top of Gondola
Construct Additional Tubing / Winter Park at Top of Gondola
Relocate Lower California Maintenance Shop Off - Site
Remodel and Expand Vehicle and Lift Maintenance Shop at Top of Tram

Phase Two

Replace Lift E (Patsy's) / Lift F (Groove) with Quad and surface lift(s)
Replace Lift U (Galaxy) with Detachable Quad
Construct Top of Gondola Restaurant / Lodge
Replace Lift Q (Boulder) with Quad
Lift HH (Von Schmidt's allocation)
- Trails H12, H13, R3, R4, U3, U4, V11, V12, 12, 13 14, and 15

Add Snowmaking on Trails:
- Trails E2, G4, G8, G9, H5, I2, GG2, GG5, HH2, HH3, R1, R2, S2, S3, S4, S6, S7, U1, U2, U3, U4, V3, V5, V12, W1, W2, 10, 13, 14, 15, and 17

Expand Tubing at Top of Gondola
Construct Boulder Base Lodge & Skier Services Building / Expand Deck at Existing Lodge
Construct Sand Dunes Lodge and Utilities
Construct In-ground Half-Pipe with Snowmaking

Phase Three

Construct Mid Station Restaurant
Replace California Base Lodge
Replace & Relocate Lift A (Aerial Tramway) with Detach Quad
Replace Lift N (Pioneer) with Quad
Lift Z (Wells Fargo) Construction
- Trails Z1, Z2, Z3, Z4, Z5, Z6, Z7 and Z8

Add Snowmaking on Trails:
- Trails Z1, Z2, Z3, Z4, Z5, and Z7

Kids Camp (California Base)
- Lift K (Perfect Ride) Replacement
- Trail K1
- Lift L (California Ski School) Replacement
- Trail L1
- Lift M (Enchanted Forest 2) Replacement
- Trail M1

Relocate California Snowmaking Building

3.14 ANGEL'S ROOST ELECTRONICS SITE

In 1998, the Forest Service turned over control of the existing Angel's Roost Electronics site to Heavenly under a Communications Use Site Lease (#4025-01). The site is located at the Top of the Tram near the former top station of the old West Bowl chairlift (removed in 1998). It has been in existence as a communications and electronics site since it was first authorized in 1959 by the El Dorado National Forest, Lake Valley Ranger District under a Special Use Permit.

The site presently contains one radio tower with individual antennas, a small building containing back-up batteries and a passive television reflector managed under a separate permit. Because of its location and elevation (approximately 8,731 feet above sea level), it has an unusual clarity of signal and can "see" into the Meyers and Upper Lake Valley area. As a result, several personal communications systems (pcs) companies and similar service providers desire to locate antenna at Angel's Roost.

An Electronics Site Master Plan for Angel's Roost is included in the Master Plan Update in order to allow for orderly development of the site. It is located in Chapter 4. Because it is located within a developed winter sports recreation site, it offers many advantages rather than locating a new facility in a previously undeveloped area. The Angel's Roost Electronics Site Master Plan generally proposes for an ultimate build-out of two towers approximately 80 feet in height with up to nine antenna positions on each tower. The towers will be hidden from view and designed as pine trees or snags in order to blend into the surrounding landscape. At ground level, a small support building will be built in phases as expansion of the antennas occurs. It will be approximately 20' x 40' in footprint area at buildout. There will not be a permanent road to the site. Maintenance and other operational activities can occur over the snow and on foot in the summer time. Presently, a summer maintenance road ends at the nearby lift maintenance facility, making a new spur road unnecessary.

4 Physical Plan - Development Areas

4 PHYSICAL PLAN - DEVELOPMENT AREAS

Development area plans provide additional detail to the information presented in Chapter 3, Amended Plan – Upgraded Facilities. The detail includes the concept for each development area, schematic designs of the proposed facilities, site plans, building characteristics and a discussion of needs. Each facility description includes:

- The Master Plan 1996 Concept;
- Implementation Status since 1996; and
- Changes to the facility proposed in the 2007 Master Plan Amendment.

4.1 CALIFORNIA BASE

Master Plan 1996 Concept

The Village concept at the Heavenly California Base derives its character and imagery from the Camp Richardson/Valhalla area of the South Lake Tahoe shoreline. Typical building materials at the Village include wood shakes, wood siding, peeled logs, stone foundations, metal roofs, and small windows. The building masses are brought down to the ground with covered arcades and roofs that step down with the natural grade of the site. The buildings are staggered to create smaller masses and create the appearance of a series of detached structures.

The focal point of the Village is the ticketing/administration building which is on a visual axis from the mountain as skiers descend to the base area. This will be the meeting point and public congregation area at the Village.

The Village compound consists of food service and bar space, ticket sales building, parking structure and surface parking lot, commercial/retail space, public restrooms, administrative offices, snowmaking building, kids camp, adult ski school, ski rental building, and snowmaking building. This compound will provide the skier related services required at the California Base with the quality and character of a Tahoe basin mountain village.

Program Summary

• Food Service	Food Court Dining	700 indoor seats 500 outdoor seats
	California Bar	5,000 sf indoor eat/drink 200 seats 5,000 sf deck space
• Ticket sales	16 windows storage/counting queue area	
• Parking	1,710 spaces Bus drop-off	
• Commercial/Retail	ski shops sundries t-shirts/souvenirs	

	t-shirts/souvenirs specialty foods mountain shop
• Public Restrooms	
• Administrative Offices	2nd floor satellite support services
• Snowmaking building	
• Ski Rental	2,000 sets ski check area/lockers
• Adult Ski School	
• Kids Camp	500 children
• Employee Center	locker rooms lounge meeting room laundry ski maintenance uniform room restrooms

Characteristics

Village Character - A grouping of separate building forms, rather than the appearance of one large structure. Building masses and roof forms are broken into smaller masses, creating a more intimate scale. Overall character shall be indigenous to the Tahoe region and reflect characteristics of mountain architecture. This regional character is exemplified by the buildings at Valhalla.

Roofs - Principal roofs will be sloped wood shingle (6:12 or steeper). Smaller, flat-roofed sections will be utilized to accommodate roof-top equipment and exhausts. Shed roofs of smaller structures and arcades may be a lower pitch and will have metal roofs. Roof colors will be natural, to blend with the site.

Wall - Shall be predominantly wood siding in natural colors. Siding may be vertical boards, horizontal lap, vertical board and batten, or shingles. Up to two siding materials may be combined on a single building. Stone or precast concrete may be used around bases of buildings and for landscape walls.

Arcades/Porches - Areas with pedestrian access shall be covered by arcades or porch roofs. These shall be framed by natural logs or timbers, and be sufficient to give adequate snow protection to the buildings and pedestrians.

Storefronts/Windows - Shall be traditional in appearance with large expanses of glass broken up into smaller sections by panes or muntin bars.

Implementation Status

Since 1996, several upgrades to the Main Lodge and support buildings have occurred. In 1998, a major expansion occurred that included ski rentals, day care and children's ski school. Also in 1998, a temporary

structure was set up in the upper parking lot as a real estate Discovery Gallery. This building has since been converted to and approved as a snowboard retail center. In 2002, the lower exterior lodge entrance area was remodeled with the addition of a new ticket lobby canopy and outdoor plaza. Interior remodeling occurred in 2002 to the ticket lobby, restrooms, food and beverage area and the retail shop.

In 2002, a new freestanding monument sign was installed at the main entrance, replacing the previously existing non-conforming overhead sign.

In 2004, ADA upgrades were made to the interior with the addition of three platform lifts (LULAs).

Master Plan Amendment 2007 Concept

No changes to the 1996 Master Plan vision, with the exception of down-sizing the food-service area by 10,000 square feet and moving the lodge and facilities further into the existing parking lot in order to operate additional skiing area at the portion of the slope where it is currently restricted due to the proximity of the lodge. Implementation is planned to occur during Phase Three of the Master Plan implementation schedule.

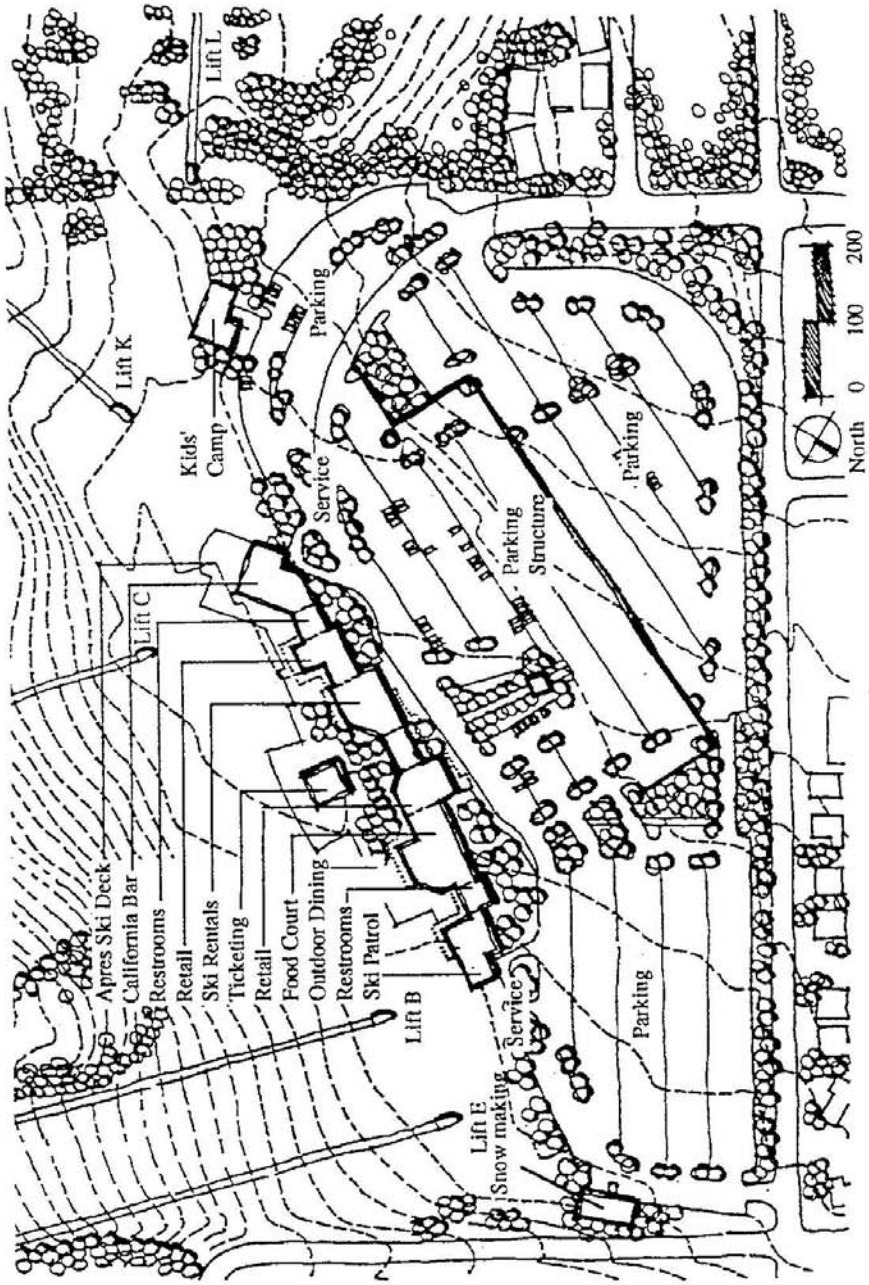


FIGURE 4-1 CALIFORNIA BASE SITE PLAN

Support Facilities

Heavenly Master Plan Amendment 2007

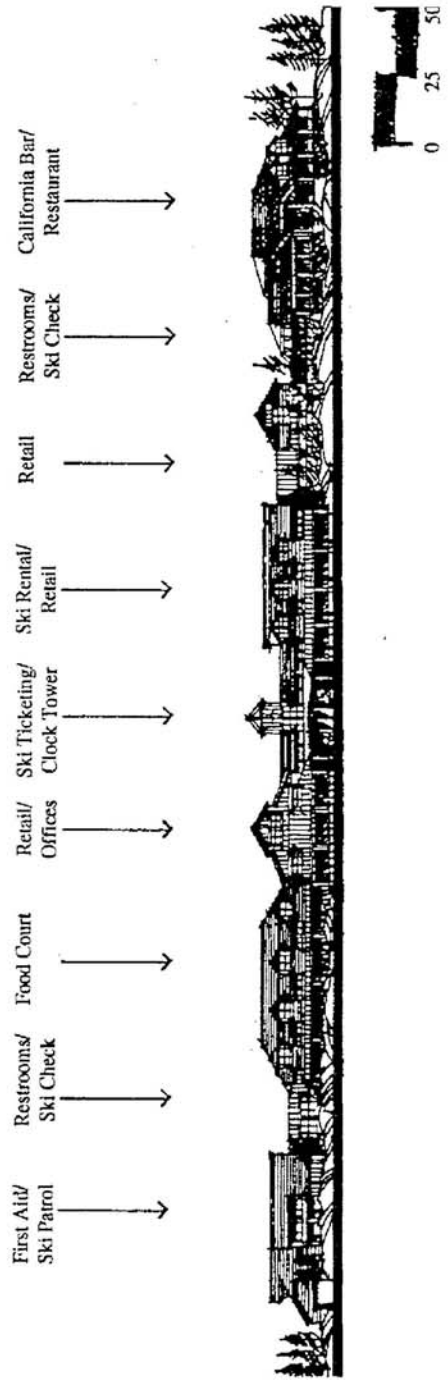


FIGURE 4-2 BASE VILLAGE FROM PARKING

Support Facilities

Heavenly Master Plan Amendment 2007

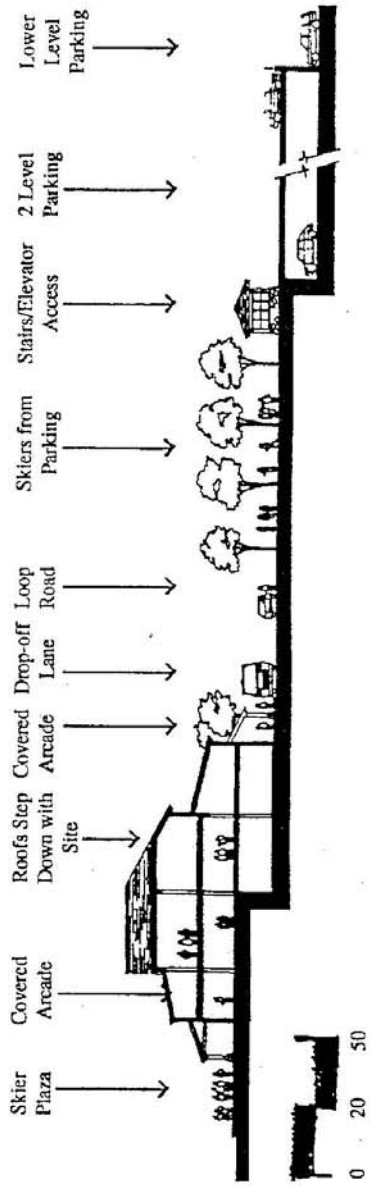
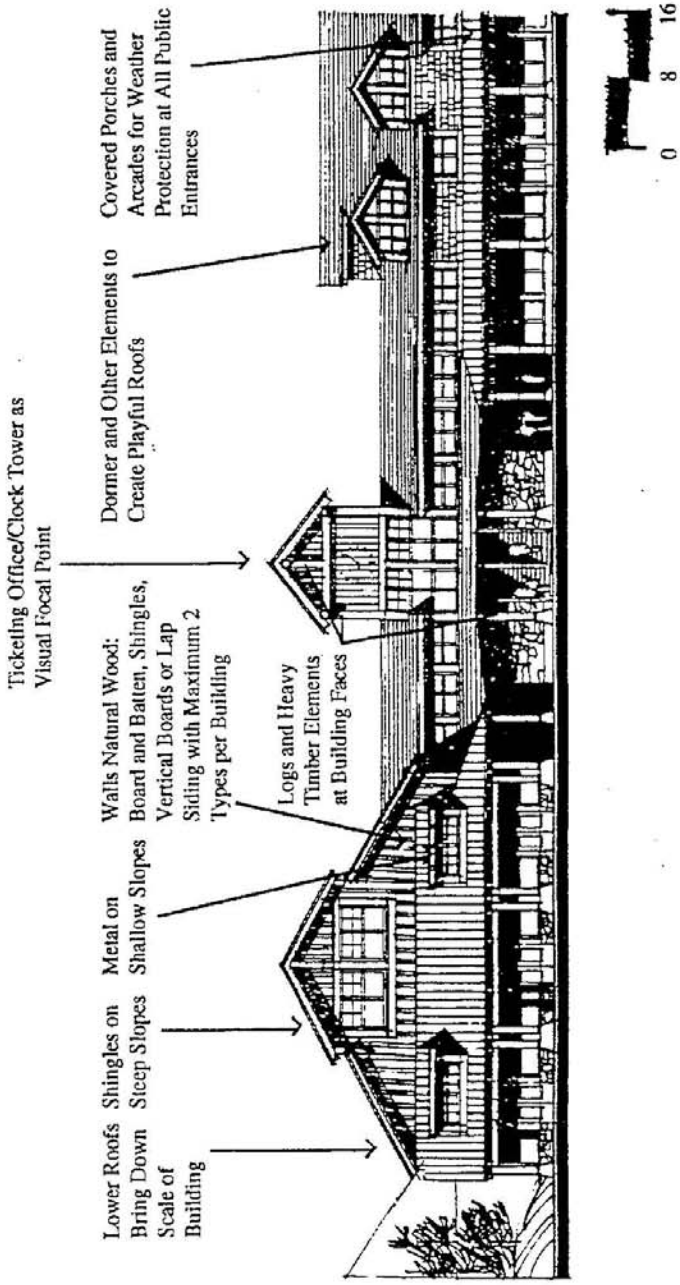


FIGURE 4-3 SECTION THROUGH BASE VILLAGE

Support Facilities

Heavenly Master Plan Amendment 2007



Heavenly Master Plan Amendment 2007

FIGURE 4-4 TYPICAL BUILDING CHARACTERISTICS

Support Facilities

4.2 LAKEVIEW LODGE (Formerly Monument Peak Lodge)

Master Plan 1996 Concept

Lakeview Lodge serves the tram and repeat skiers on the lower California side including Gunbarrel and East Bowl. A fundamental concept of the mountain plan is to shift a major access point for the mountain to the Stateline area with service by a high capacity gondola. This change in emphasis will include replacement of the tram with a high capacity, detachable quad chairlift. As a result, non-skier sight seeing services will be provided at the gondola mid and upper stations.

Lakeview Lodge provides food and beverage services for guests and repeat skiers using the lower California portion of the resort, including skiers including Gunbarrel and East Bowl runs. It also serves skiers using the Patsy's/Groove areas and the Pioneer ski school teaching area. The current program contains a cafeteria, restrooms, outdoor deck, and the themed Gunbarrel Bar and Grill. The Gunbarrel Bar and Grill includes the sit-down restaurant and bar that feature views of Lake Tahoe. Lakeview Lodge contains the largest number of on-mountain indoor seats (375). Sightseers who used to ride the tram to visit the former Monument Peak Lodge now find sightseeing and related services at the Gondola.

Program Summary

• Gunbarrel Bar & Grill seating	10,500sf
• Restrooms	1,000 sf
• Kitchen and back-of-house	3,350 sf
• Access and Circulation	1,400 sf
• Rentals	400 sf
• Ski School	400 sf
Total	17,050 sf

Building Characteristics

The existing building is low-profile, wood-framed and concrete block building that has been remodeled many times since its origin as the Pioneer Hut. It sits on a natural ledge which is surrounded by mature forest. It has been painted a neutral brown color in order to help it recede into the surrounding setting. Windows facing the lake are set under deep roof overhangs and do not appear from distant viewpoints as reflective man-made elements. Lakeview Lodge contains an outdoor deck which is also low profile that offers outstanding views of the lake and skiing.

Implementation Status

In 2003, Heavenly removed the long, enclosed staircase that led from the Top of the Tram down to the lodge. This was done to improve the guest experience and to improve aesthetic conditions when viewed internally from the resort and from key external viewpoints below. At the same time, a new entry feature was added in order to provide a sense of arrival to the lodge. Skiers and other guests now enter the lodge directly from snow near the location where the stairs used to land. In 2003, minor remodeling was done to the dining room and the scramble serving area.

Master Plan Amendment 2007 Concept

Lakeview Lodge will be kept in its current configuration in terms of floor area and program. It continues to serve as a valuable on-mountain lodge with indoor seating that is located near several popular lift and trail pods. The existing scramble servery food court will continue in it current form.

The Monument Peak Restaurant will be given a new brand and theme. As of 2004, it will be known as the Gunbarrel Grill, based on its physical and visual proximity to the world-famous Gunbarrel mogul run. It will offer a more animated themed food and beverage experience for indoor and outdoor guests, including a themed bar. Visual displays and an improved sound system will be used to demonstrate the excitement and active nature of skiing in the grill.

A new foot trail that is four feet in width will be added between the tram top station and the lodge. It will be constructed with a decomposed granite surface. This will accommodate guests who are using the lodge for summer special events and functions.

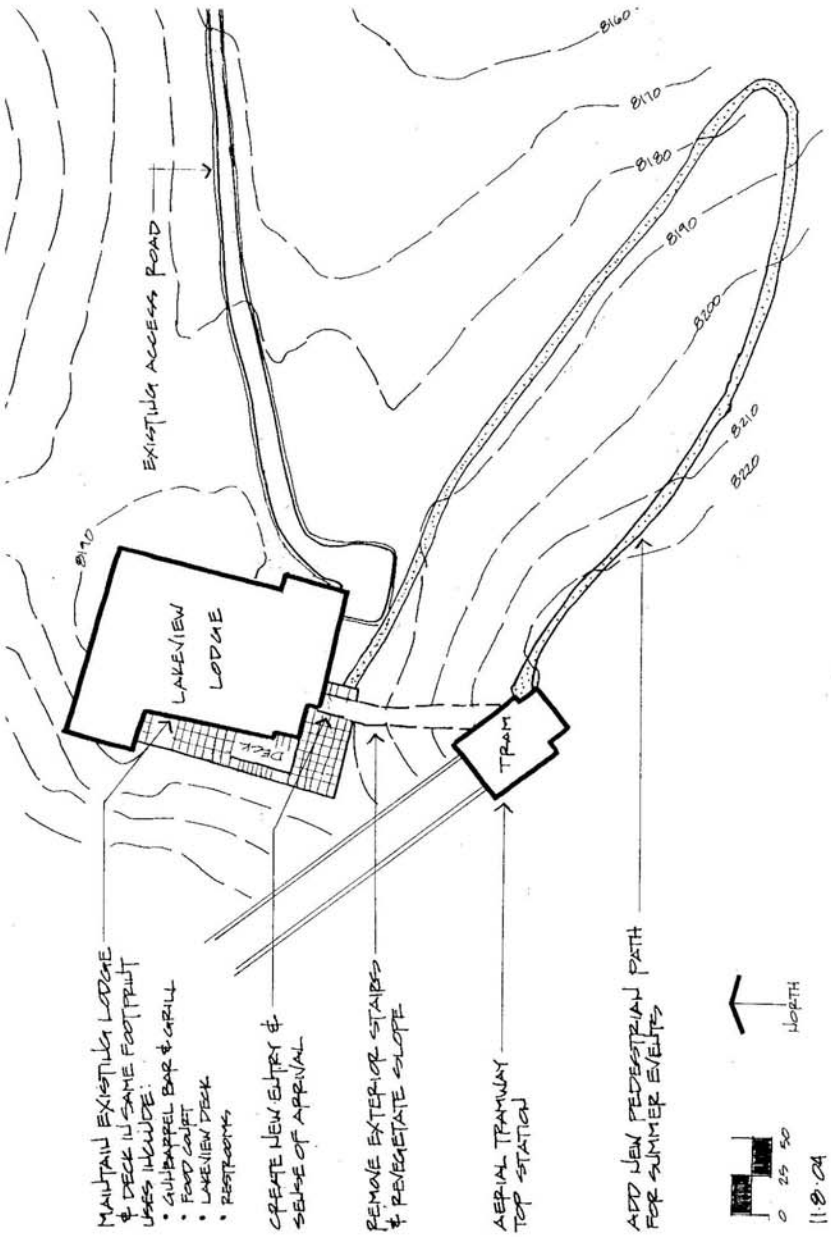


FIGURE 4-5 LAKEVIEW LODGE BUILDING SITE PLAN

Heavenly Master Plan Amendment 2007

Support Facilities

4.3 POWDERBOWL LODGE (Formerly Sky Meadow Lodge)

Master Plan 1996 Concept

In MP (96), the Sky Meadow Lodge was planned to accommodate the daily skier capacity of the lift systems and trails associated with Sky Express, Canyon, Ridge, and Von Schmidt's (Lift J). The seating capacity was to serve a daily skier attendance of 4,600 skiers or 900 seats. The site is constrained by an existing "Stream Environment Zone" and a relatively steep slope of land behind the building. It was planned to connect to the existing Sky Deckand the adjacent restrooms. The building was planned to be 27,650 square feet on two levels. A new concept has been developed and is described below.

Program Summary

Sky Meadow Restaurant

Lower Level		
• Kitchen	5,500 sf	
• Serving	3,800 sf	
• Dining	8,200 sf	450 seats
• Restrooms	1,950 sf	
Upper Level		
• Dining	8,200 sf	450 seats
Total	27,650 sf	900 seats

Implementation Status

Since 1996, minor aesthetic changes have occurred to the exterior elements of the existing Sky Deck outdoor barbecue and bathrooms. In 1999, a new lodge was approved for the hillside near the Sky Meadows bathrooms, however, it was never constructed. In 2004, TRPA withdrew a plan revision application due to a lack of action.

Master Plan Amendment 2007 Concept

The concept for the Sky Lodge is substantially different than it was in 1996. Due in part to the environmental sensitivity of the existing Sky Meadows site, the lodge capacity of 900 seats and the other program elements will be relocated to a more capable site near the top of the new Powderbowl Express lift. (Lift G-1). It will include a terminal site for a new high-speed lift that will replace the existing Aerial Tram (Lift A). The lodge site is shown on the overall Master Plan Map found in Chapter 3. The Sky Meadows deck and barbecue will be removed and a stream environment zone restoration project will be completed.

The concept for the new Powderbowl Lodge is to provide a comfortable mid-mountain lodge that provides a convenient location to enjoy lunch a snack or simply a break from skiing. It will be sited near the top station of the existing Powderbowl Express lift. The lodge site will be accessible from many of the upper mountain California trails and provide an activity hub for guests of all ability levels. Based on the site, it will offer partial views of Lake Tahoe. 550 indoor seats and 300 outdoor seats are planned. Building forms and materials will

be selected to blend with the natural setting. The Forest Service Built Environment Image Guide will be used as a design tool. LEED certification of the building is planned (uses environmentally sustainable practices and materials).

It lies next to the existing summer maintenance road system and will not require new access other than a short section of spur road for maintenance purposes. This lodge will be used in winter only.

A conceptual site plan is shown below.

Program Summary

• Kitchen & Servery	5,000 sf
• Seating	10,000 sf
• Outdoor Deck	5,000 sf
• Restrooms	1,500 sf
• Retail	500 sf
• Ski School	500 sf
• Employee Areas	1,500 sf
• Access & Circulation	1,000 sf
Total	25,000 sf

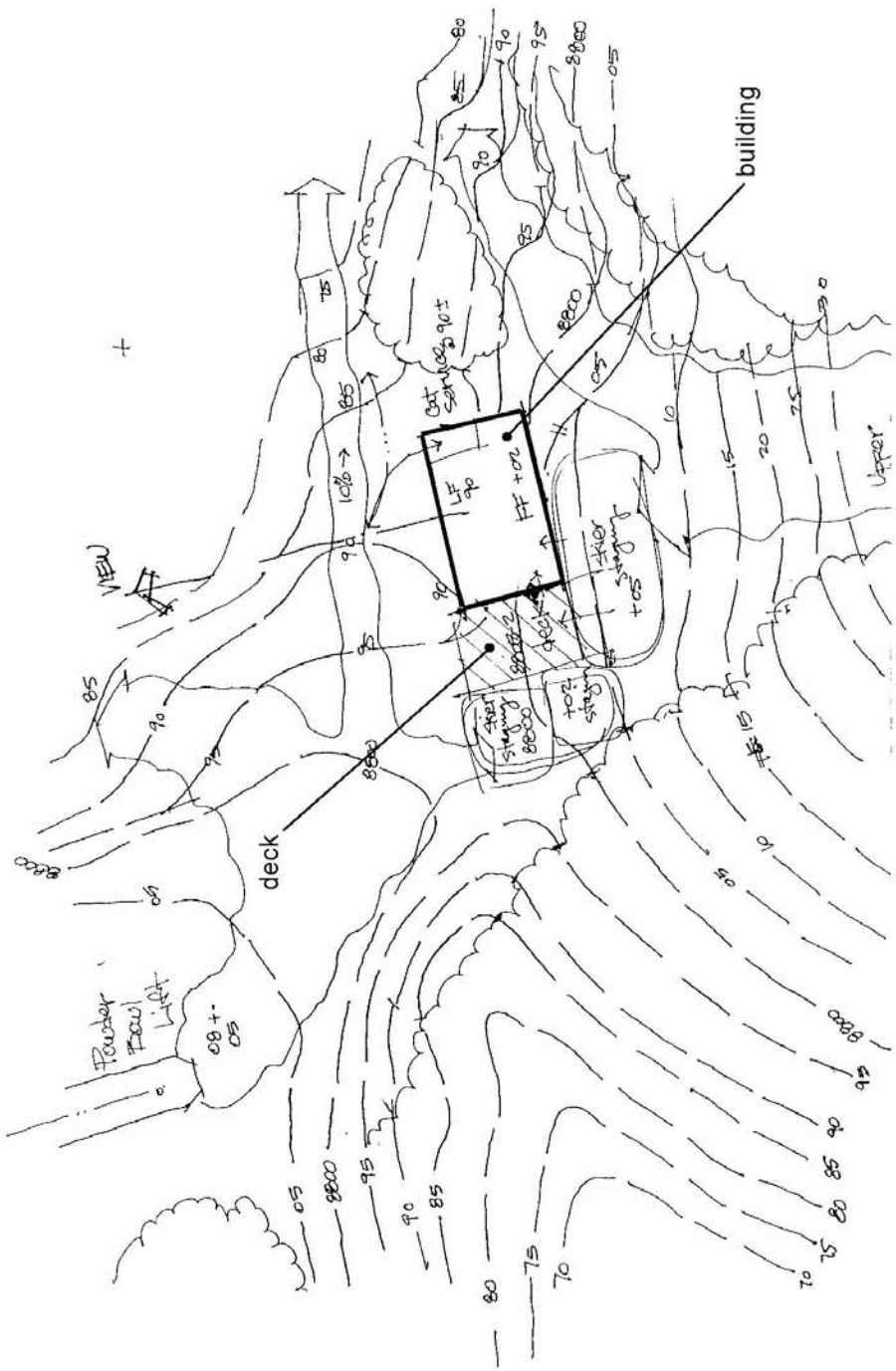


FIGURE 4-6 POWDERBOWL LODGE BUILDING SITE PLAN

Heavenly Master Plan Amendment 2007

Support Facilities

4.4 GONDOLA MID STATION

Master Plan 1996 Concept

The Gondola Mid Station was conceived as a mountain restaurant which will be strategically positioned to gain access to spectacular views of Lake Tahoe and South Shore development areas. Visual impact is a critical concern and the building is planned to have the majority of its mass screened by existing topography. The intent is to have a band of viewing windows situated above the large knoll at the mid-mountain terminal. This location and proposed use will provide a year round attraction for visitors to Heavenly and will provide an excellent high mountain experience for the non-skiing public.

Program Summary

Gondola Mid Station Restaurant

Lower Level		
• Dining	3,000 sf	100 seats
• Kitchen/Service	3,375 sf	
Upper Level		
• Dining	3,375 sf	100 seats
• Gondola Terminal	3,325 sf	
Total	13,075 sf	200 seats

Implementation Status

In 2000, the gondola mid station terminal and observation deck was constructed as part of the gondola project. Site utilities, restrooms and a small snack bar (200 sq. ft.) were also built. Due to the magnificent views available from the site, the observation deck was constructed with a larger footprint than was planned. In 2002, a 600 square foot retail building was constructed behind the terminal (i.e., not visible from below). Overall, the site planning and architecture elements have allowed the improvements to blend into the landscape and are minimally visible from key viewpoints below such as US Highway 50 and Lake Tahoe. The restaurant included in the original program, however, has not yet been built.

Master Plan Amendment 2007 Concept

The 2007 Master Plan Update proposes to relocate the restaurant building envelope to the west side of the existing observation deck near the restrooms. The restaurant building site is in a relatively flat, wooded location where it would be minimally visible from viewpoints below. Building forms, materials and forest screening would be used in order to reduce its apparent visual magnitude. LEED certification of the building is planned. The observation deck and the restaurant will be connected with a short section of level deck from the elevation of the observation deck into the upper level of the restaurant. The two-story building envelope and program are shown below.

Program Summary

• Upper Level Dining & Viewing Lounge (200 seats)	2,000 sf
• Lower Level Kitchen, Restrooms and Back of House	2,000 sf
• Connection to Observation Deck (20' x 50')	1,000 sf
Total	5,000 sf

In order to comply with the State of California Passenger Tramway Safety Orders and the ANSI B77.1 Code for the Gondola, an operator must be present at the Gondola Mid-Station for pre-operation safety procedures and for shut down procedures. Each station is required to be manned by an operator before operations begin. In order to satisfy this requirement, an OHV Trail is proposed using the same alignment as the temporary mid-station road, which was closed and decommissioned in 2003 from the Von Schmidt's Handle Tow lift to the mid-station. The OHV Trail will only be used for start-up and shutdown procedures described above, or in the case of an emergency.

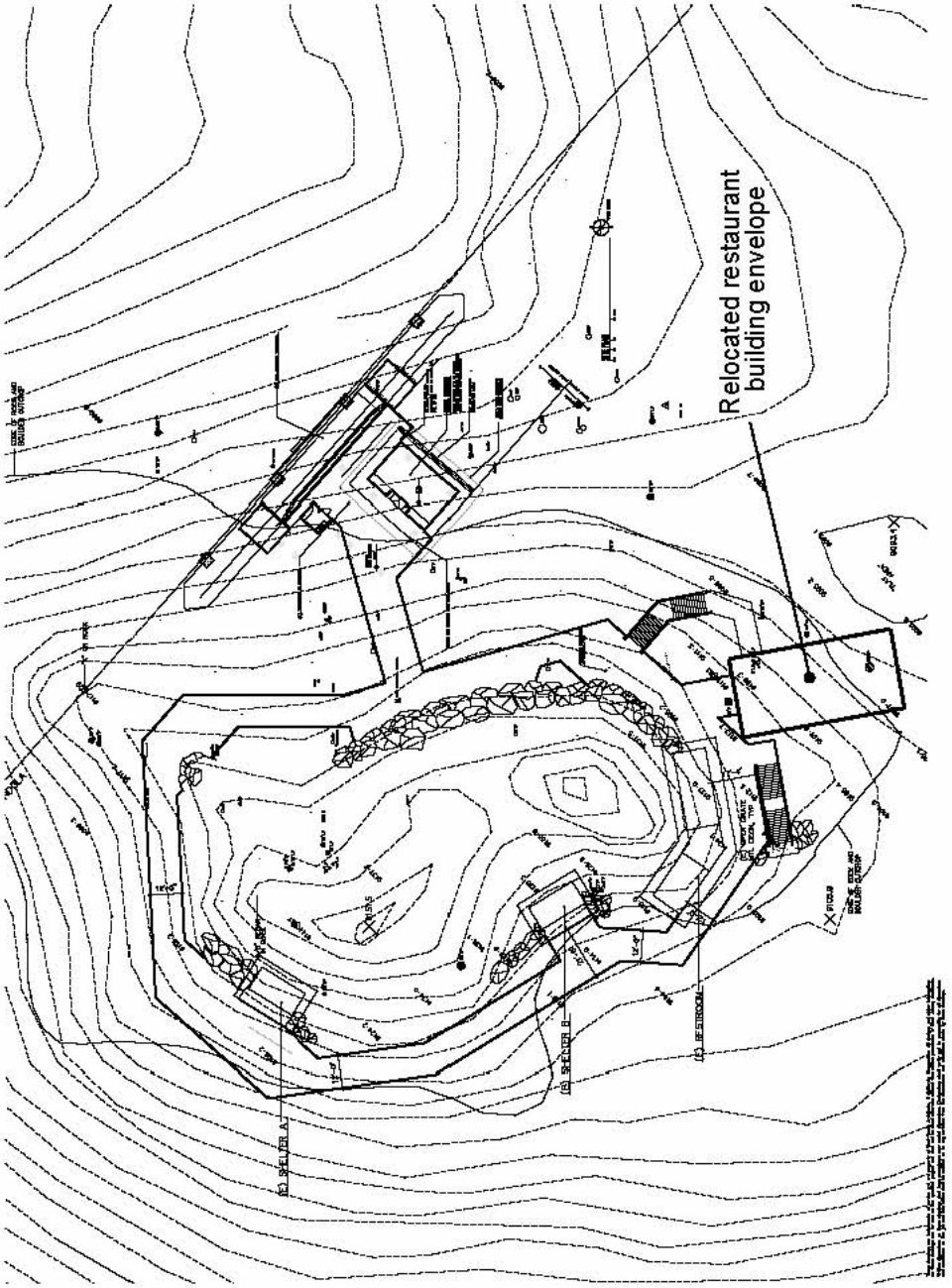


FIGURE 4-7 GONDOLA MID-STATION SITE PLAN

Heavenly Master Plan Amendment 2007

Support Facilities

4.5 GONDOLA TOP STATION/MAINTENANCE FACILITY

Master Plan 1996 Concept

The MP (96) concept for the Gondola Top Station was to provide a compact mountain village with a full array of supporting services for skiing and snow play in winter and hiking, picnicking, and nature interpretation activities during the summer. The basic notion is to utilize the gondola to transport visitors from the commercial developed context of the lakeside and introduce them to the pristine quality of the High Sierra. Winter and summer visitors may travel to the upper mountain without clear objectives in mind and find all the services needed, including ski rental, instruction, lift access, sleds for snow play, excellent food services and, essentially, access to the upper mountain environment. This is viewed as a valuable asset during times of the winter when the climate at the lakeside is not conducive to outdoor recreation.

In the MP (96) concept plan, a new upper mountain maintenance facility was to be constructed near the Top of the Gondola. The maintenance facility was to include all uses that were provided at the Upper California maintenance shop. These uses would include: workshops, maintenance bays for tracked vehicles, storage for the Gondola Top Station restaurant, and fuel storage and parking for the snow grooming equipment. The fuel storage would be above ground and would have the same capacity which now exists at the Upper CA maintenance shop. Access to the shop was to be from the Stagecoach base using Way Home road (Nevada Trail) to Von Schmidt's Flats.

Program Summary

1. Gondola

• Gondola Terminal	6,250 sf
• Storage (car)	8,000 sf
• Retail	8,200 sf
• Kitchen	4,275 sf
• Bar	3,300 sf
• Restaurant	14,000 sf
• Restrooms	1,800 sf
• Ticket Sales	
• Information	900 sf
• Service Corridors	2,450 sf
Total	49,175 sf

2. Maintenance Compound

• Shop	9,000 sf
• Maintenance Bays	5,000 sf
• Restaurant Storage	3,000 sf
• Carpentry	1,800 sf
• Lift Maintenance	1,800 sf
Total	20,600 sf

Implementation Status

In 2000, Phase 1a of the approved Top of Gondola Lodge was constructed. It is two stories in height. This included the gondola terminal, motor room and a small section of upper level plaza together with two sets of exit stairs. The water utility control room was also constructed. No other portions of the lodge were built. Approximately 13,443 square feet of floor area was built in Phase 1a. The approved lodge floor area is 56,769 square feet. Modular restrooms and a temporary outdoor barbecue and seating area have been built within the approved building footprint. A new elevator has been installed in 2004 in order to meet ADA and other needs between the two levels of the gondola terminal.

In 2003 and 2004, two temporary membrane structures and a modular restroom building were erected in order to provide temporary ski school facilities, primarily for the children's' ski school programs. The facilities are located near the base of the Big Easy lift (Lift HH-1).

Master Plan Amendment 2007 Concept

The concept for the new top of the gondola lodge is to develop a new multi-season lodge that is smaller and more intimate than the original lodge approved with the gondola. The new lodge will serve skiers, sightseers and other guests who are in the Von Schmidt's Flats Area. This means that several of the facilities within it can be smaller than the lodge that was originally approved. A portion of the approved capacity for the original lodge will be relocated to the Sand Dunes Lodge facility. The new lodge will be relocated to the east of the gondola to an area that is closer and better connected to the existing ski school lifts and activities. It will serve as the starting point and hub for all ski school, cross-country and snowshoe trails, the Discovery Forest and summer activities.

The design concept for the new lodge is similar to the approved building. It will incorporate natural building materials such as wood and stone along with appropriate building forms as described in the Forest Service BEIG. LEED certification of the lodge is planned. Views from large windows in the lodge will be focused on the surrounding activities. The building will provide as range of skier services as well as services for non-skiing guests. Inside, the lodge will contain a themed bar that will serve as a focal point in winter and summer.

In summer, pathways and trails will connect the lodge with the gondola and other amenities such as the amphitheater, the Zipline adventure ride, Discovery Forest and other activities. The Adventure Center will use existing space in the lodge during the summer season.

For environmental and aesthetic reasons, no new maintenance facility will be developed near the top of the gondola. Rather, it will remain in the location of the existing Upper Vehicle Maintenance Shop and expanded slightly.

Program Summary (lodge only)

- Food Service 5,000 sf
- Ski School 2,000 sf
- Rentals 1,200 sf

• Restrooms		800 sf
• Retail		400 sf
• Employee Areas & Offices		1,057 sf
	Total	10,457 sf

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Figure 4-8	Top of Gondola Activities Map	1 (24X36)

4.6 EAST PEAK

Master Plan 1996 Concept

The MP (96) East Peak restaurant concept was to service skiers in the Dipper and Comet skiing pods with a daily capacity for 4,600 skiers. Given established turnover rates, demand exists for 1,000 seats for food service. The concept was to serve this demand with 800 seats in a scramble configuration and 200 seats with "sit down" service.

The site is framed between East Peak Lake and skier circulation space for Dipper and Comet. In order to preserve the maximum usable area for skiers, the building will reside with the north portion on grade with traditional spread foundations and the southern portion of the building will be suspended on columns over water. The existing deck space was to be preserved to the maximum degree possible and a wide serviceable ski trail will be preserved through the site to circulate skiers to the Nevada side of the mountain.

Deck space and viewing areas was to be oriented to the south to maximize outdoor dining in sunny areas and provide views of skiing. Because of the attractiveness of the snowmaking pond as a water feature, a summer program was proposed for this area to include boating, and food service on the deck. This space will support mountain biking, interpretive trails, and hiking.

Implementation Status

In 2003, the seating area, cafeteria scramble and kitchen were significantly upgraded to improve the guests' experience. In 2004, the exterior deck was remodeled with a new roof over the upper deck, restrooms were added on the lower deck, and ADA improvements were made. The existing barbecue and outdoor bar were relocated, enhanced, and had new roofs added. A continuous steel-framed glass windscreen was installed around the entire perimeter of both decks for weather protection. In total, the improvements represent a substantial upgrade to the quality of the experience. Adding more weather-protected seats is a major component of this upgrade project.

Master Plan Amendment 2007 Concept

The concept for East Peak Lodge is to retain the existing lodge and outdoor deck, including the substantial improvements made in the facility in 2002 and then again in 2004. The 2002 improvements were made primarily to the lodge interior and kitchen in order to improve the quality of the products offered and the comfort of the seating areas. In 2004, improvements were made to both outdoor decks by adding a roof shelter to the upper deck, and new bathrooms, architectural features, and a covered bar and barbecue on the lower deck. The improvements have added weather-protected seats in a location that needed them. They have also reinforced a positive sense of place at the existing lodge, located at the confluence of two major lift and trail pods.

Although it will not be constructed to the full capacity as envisioned in MP (96), the lodge will continue to play a significant role as a mid-mountain, outdoor oriented restaurant where guests can continue to enjoy the outdoors during good weather. The expansion capacity that was included for East Peak Lodge in MP (96) will be relocated to the Sand Dunes Lodge site. The lodge will be used in summer to support the activities at East Peak Lake that are described in Chapter 3. This includes day camp, fishing, outdoor barbecue, hiking trails, horseback riding and children's camp.

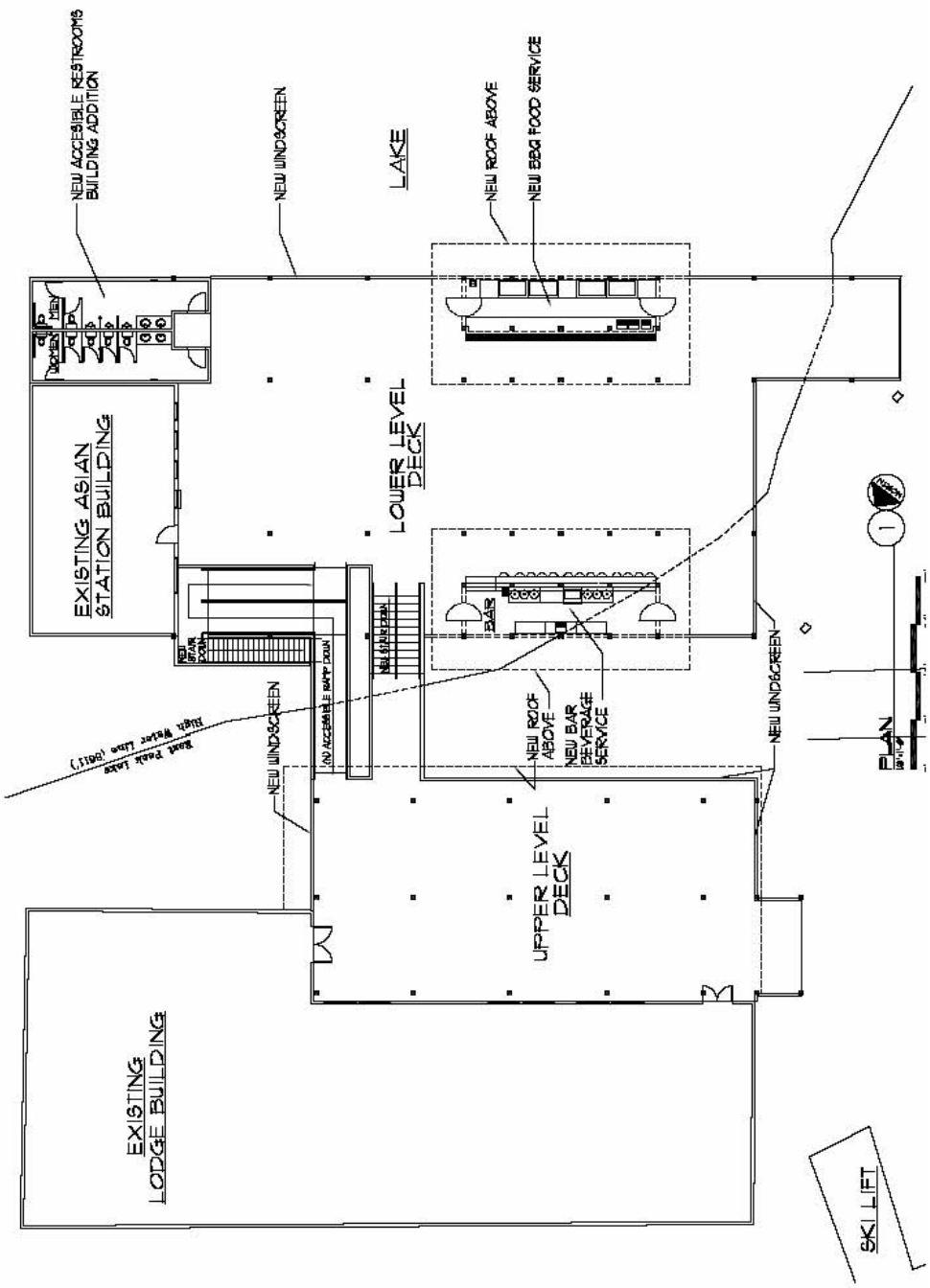


FIGURE 4-9 EAST PEAK LODGE BUILDING SITE PLAN

Support Facilities

Heavenly Master Plan Amendment 2007

4.7 BOULDER BASE

Master Plan 1996 Concept

The concept for Boulder Base is to create a fun and inviting arrival to the resort that contains a full range of services for families and Ski School students. Themed food and beverage will continue to be provided in the lodge. Ski School operations will continue to be a primary theme, particularly for children. Many of the services presently offered at the Boulder Base area will be consolidated into modern, higher quality buildings better suited to their needs. This consolidation of services will eliminate existing buildings which at present are located on sensitive environmental areas. Changes to the Boulder Lodge involve a small deck addition to the existing outdoor deck.. Ticket Services will be located between the Lodge and Skier Services and will serve as the focal point for arriving skiers. Skier shuttles will load and unload at the plaza located adjacent to the Tickets building. A children's center will be located in the Skier Services building, which will have a children's ski area adjacent to the center. This will isolate the children from the main stream of skiers.

Program Summary

• Boulder Lodge	Existing
• Tickets	1,200 sf
a. 7 windows	300 sf
b. counting/storage	130 sf
c. queuing area	580 sf
d. restroom/misc.	190 sf
• Mountain operations	8,680 sf
a. ski patrol/first aid	750 sf
1. restroom	
2. storage	
3. first aid/6 beds	
b. children's center	3,100 sf
1. restrooms	
2. food service	
3. meeting area	
4. lockers/storage	
c. restrooms	440 sf
d. employee lockers	3,400 sf
1. male/female lockers	
2. offices	
3. meeting area	

Implementation Status

No changes since the 1996 Master Plan, except for the implementation of stormwater BMPs to address all developed facilities and impervious surfaces including the parking lot.

Master Plan Amendment 2007 Concept

Maintain the program and improvements as outlined in the 1996 Master Plan. This includes the removal and relocation of existing ski school and mountain operations facilities which are presently located within the Edgewood Creek stream environment zone (SEZ).

At the existing Boulder Lodge, additional outdoor deck space will be added to the existing lodge in order to expand outdoor food service seating. The expansion will be approximately 1000 square feet. The expansion will take place outside of the nearby Edgewood Creek stream environment zone. The future replacement of the Boulder chairlift base terminal (Lift Q) will be sited outside of the existing SEZ described above. It may slightly affect the exact placement of the future Skier Services building contained in the MP (96); however, the relocation will not encroach into the SEZ.

The new Tickets building and the Skier Services building will be appropriately designed as mountain lodges. They will incorporate natural appearing materials, steeply pitched roofs, weather protected entrances, and overhangs. Building colors will be compatible with the natural environment.

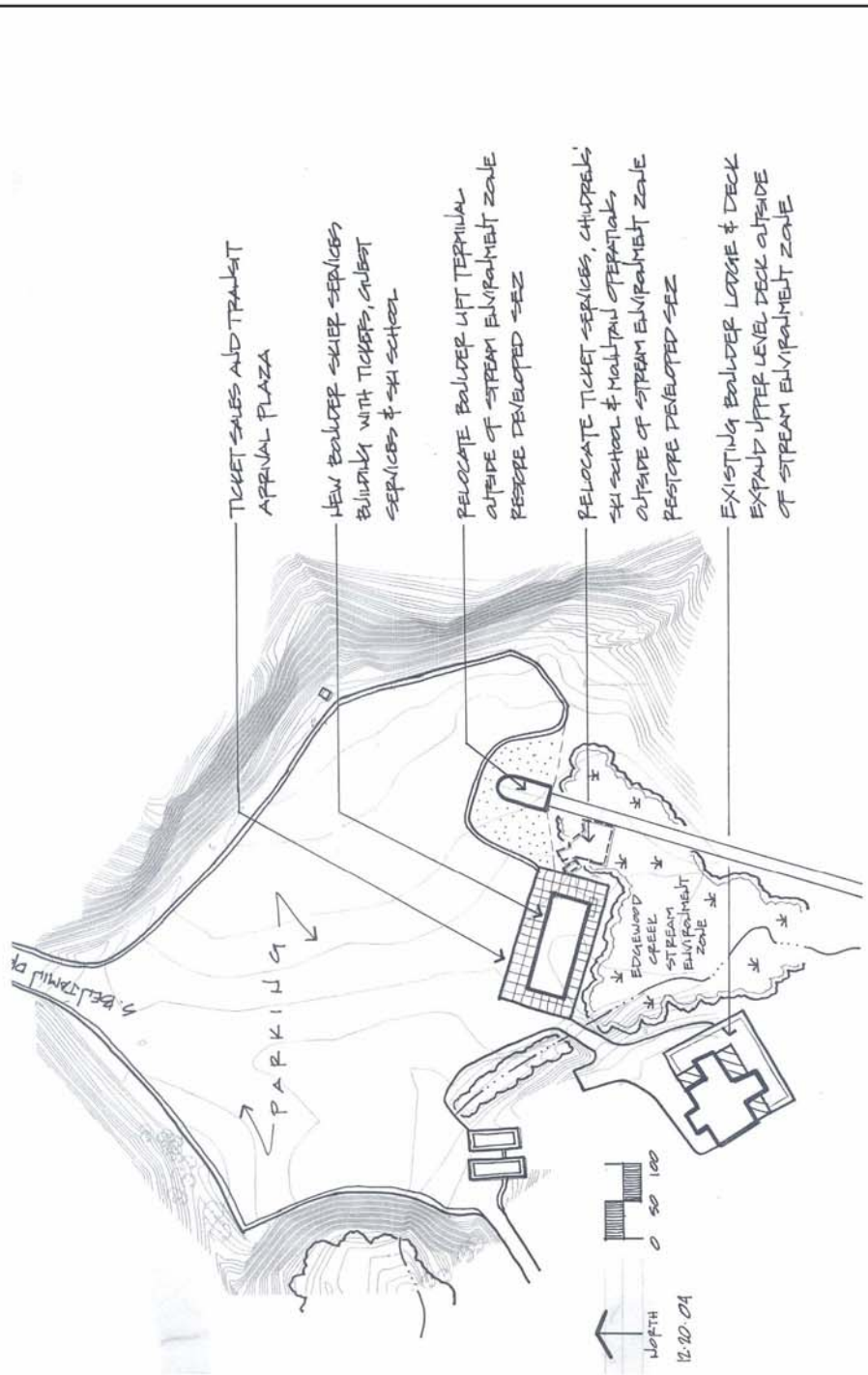


FIGURE 4-10 BOULDER BASE SITE PLAN

Support Facilities

Heavenly Master Plan Amendment 2007

4.8 STAGECOACH BASE

Master Plan 1996 Concept

Stagecoach Base provides a convenient entry point to the resort that is used primarily by local residents from the Tahoe Village neighborhoods, guests from the Ridge Tahoe property and those who access Heavenly from the nearby Carson Valley. It offers high-speed lift access along with a themed restaurant and bar. The services presently offered at the Stagecoach Base area will be continued. The concept is to leave the Stagecoach Lodge as it exists today with only minor interior and exterior remodeling, and parking lot modifications to improve drainage and circulation, and an expansion of the deck used for dining.

Program Summary

• Stagecoach Lodge Food Service and Deck	5,775 sf
• Tickets	400 sf
• Restrooms	800 sf
• Ski Rental/Shop	1,200 sf
• Administrative Offices	2,500 sf
Total	10,675 sf

Implementation Status

In 2002, the cafeteria, seating area, bar and restrooms were remodeled. In 2004, ADA improvements were added, including a new platform lift and an ADA-compliant restroom on the lower level.

Master Plan Amendment 2007 Concept

Future redevelopment of the Stagecoach Lodge site will include additional architectural upgrades to the building and the expansion of the existing outdoor deck. A Planned Development (PD) approval is in place from Douglas County. The PD includes 120 units of overnight accommodations, support retail and guest services. It also includes a resort base area with food and beverage, retail, rentals, and other skier support services for resort day users.

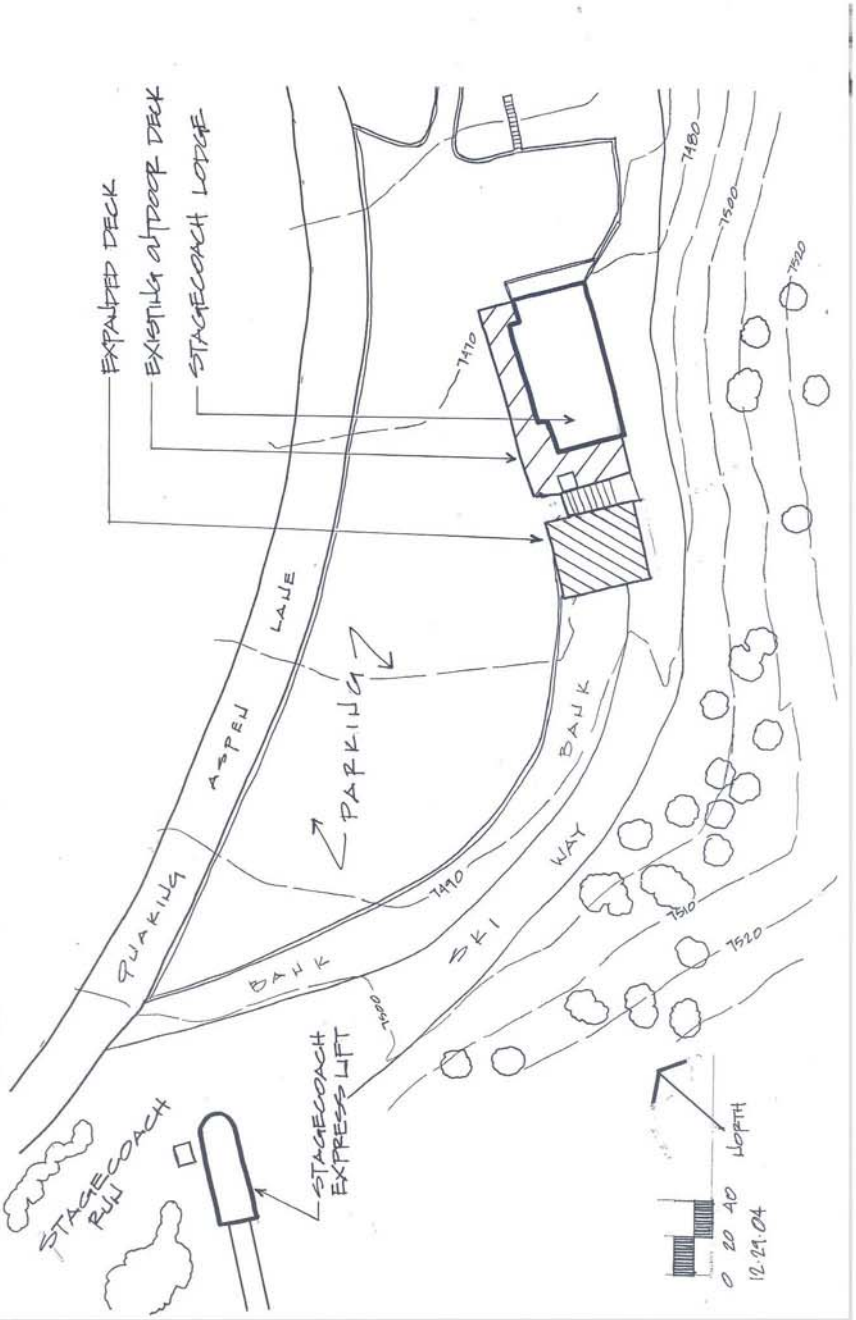


FIGURE 4-11 STAGECOACH BASE SITE PLAN

Support Facilities

Heavenly Master Plan Amendment 2007

4.9 KINGSBURY GRADE MAINTENANCE FACILITY

Master Plan 1996 Concept

All vehicle maintenance and welding services currently provided at the Base of California will be consolidated into a new building which will better suit Heavenly's needs. This consolidation and relocation of the existing services will eliminate an existing structure which is currently located in the middle of the California parking lot. By building a state of the art structure outside of the Lake Tahoe Basin, Heavenly plans to reduce any risks of contamination of the in basin environment normally associated with a vehicle maintenance facility. The structure will be large enough to allow trucks as well as heavy equipment to be serviced inside, which will provide for better control of potential pollutants. Except for Heavenly buses operated by ATM, Heavenly rubber-tired vehicles will be based out of this facility, along with storage provided for seasonal equipment. A 200-space parking lot is located adjacent to the vehicle maintenance, which will be utilized as overflow on days of high skier demands.

Program Summary

- Vehicle Maintenance

a. Heavy Equipment Bays	1,800 sf
b. Bus Service Bays	2,800 sf
c. Truck Service Bays	4,400 sf
d. Administration	
1. Restrooms	352 sf
2. Office	250 sf
3. Lockers	800 sf
4. Storage	1,200 sf
5. Mechanical	140 sf
6. Misc.	258 sf
e. Welding Shop	3,000 sf
f. Second floor storage	3,000 sf
g. 10,000 gallon fuel storage capacity	15,000 sf

- Parking

a. 200 parking spaces	60,000 sf

Implementation Status

No improvements have been implemented.

Master Plan Amendment 2007 Concept

Maintain the proposed improvements as contained in the 1996 Master Plan as described above.

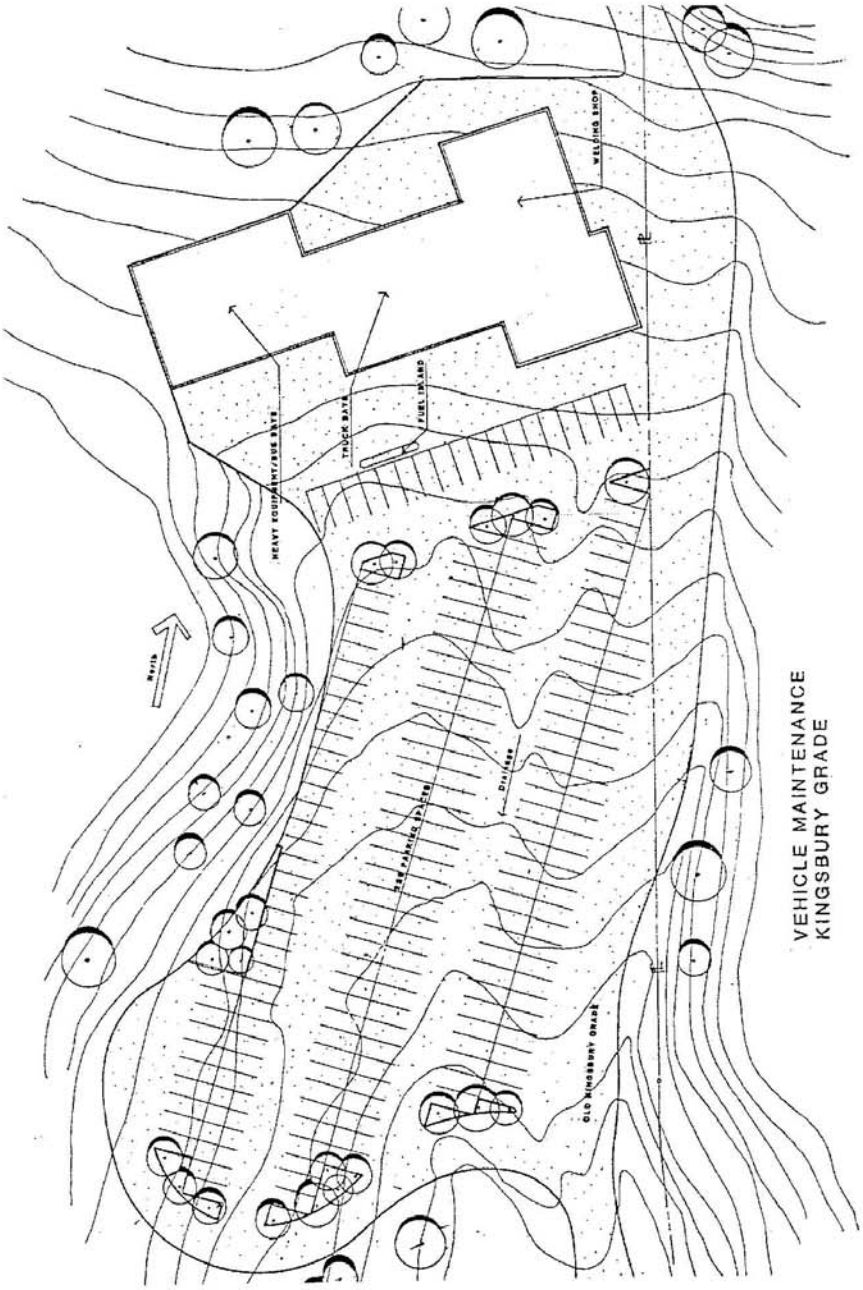


FIGURE 4-12 KINGSBURY GRADE MAINTENANCE / PARKING SITE PLAN

Heavenly Master Plan Amendment 2007

Support Facilities

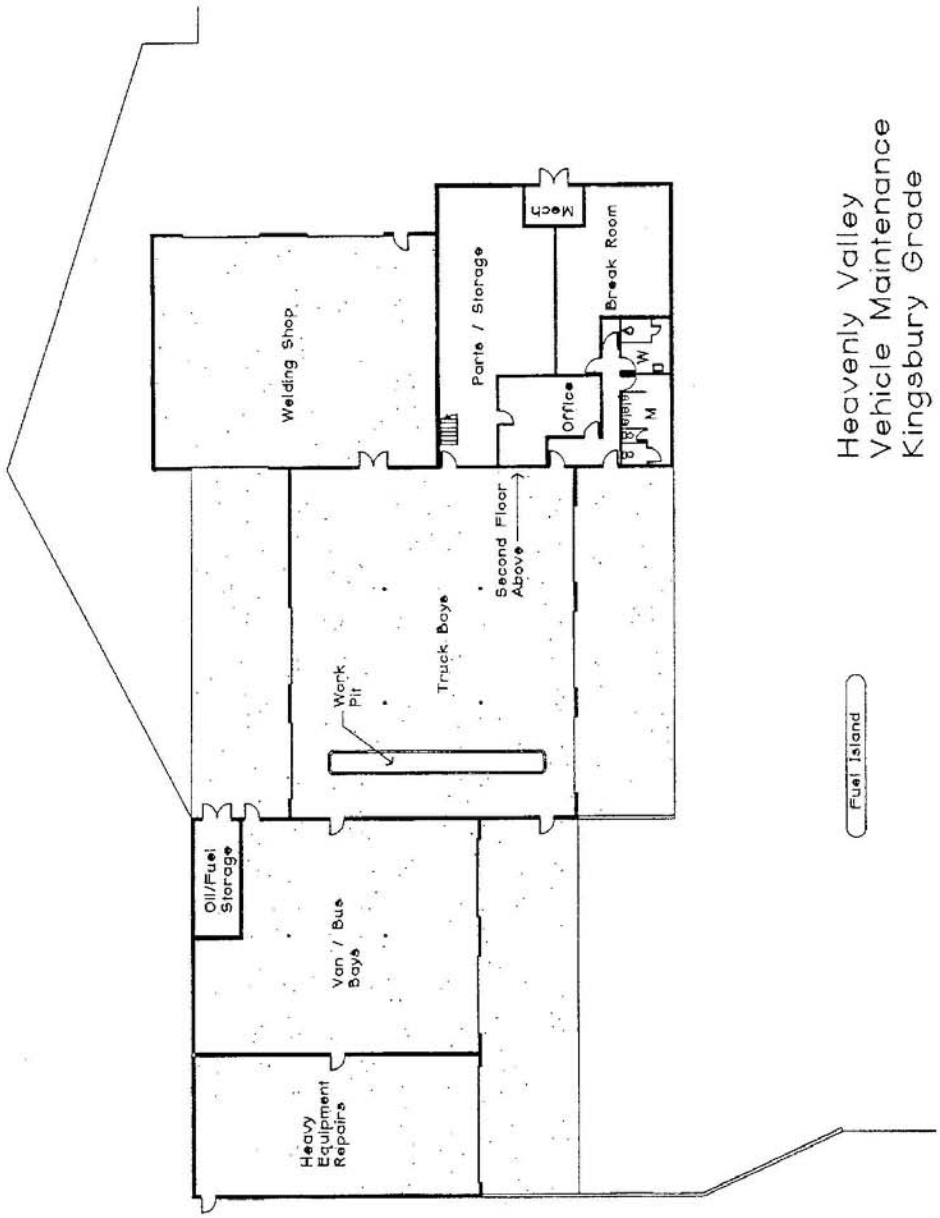


FIGURE 4-13 KINGSBURY GRADE FLOOR PLAN

Support Facilities

Heavenly Master Plan Amendment 2007

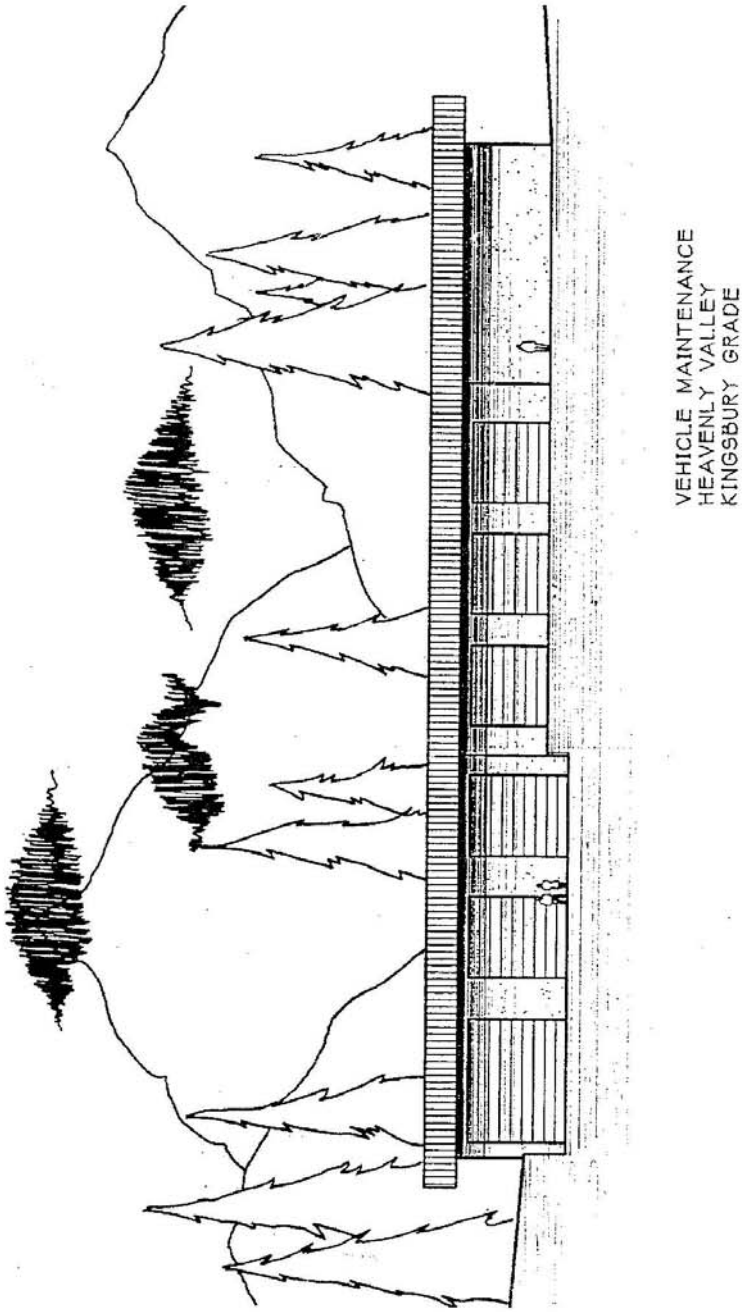


FIGURE 4-14 KINGSBURY GRADE ELEVATION

Heavenly Master Plan Amendment 2007

Support Facilities

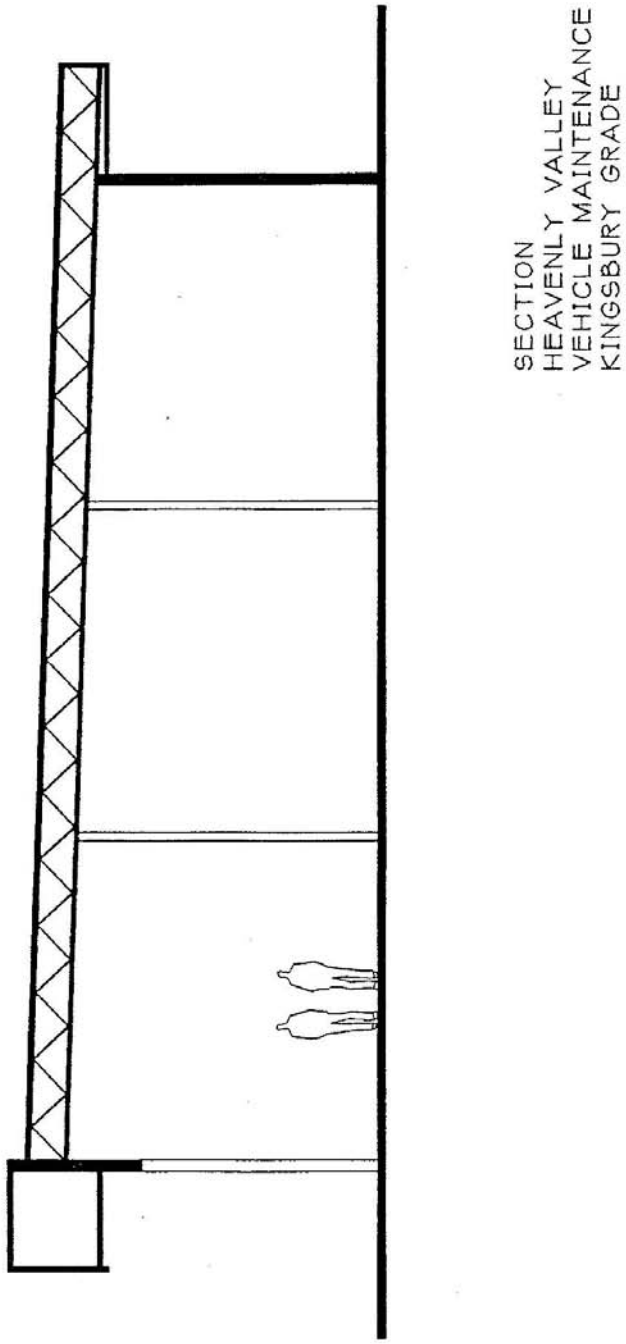


FIGURE 4-15 KINGSBURY GRADE SECTION

Support Facilities

Heavenly Master Plan Amendment 2007

4.10 GONDOLA BASE STATION

Master Plan 1996 Concept

The MP (96) concept for the Gondola Base Station included a high capacity gondola surrounded by a public plaza. The gondola area will be an activity hub for passengers loading and unloading throughout the year. The gondola, situated within the setting created by existing trees, is the focus of the newly created public space. The focus of the space is the gondola building displaying alpine elegance in a rustic style. The clock tower is the focal point of the building while the sheltering of the roof provides enclosure for ticketing. The glass incorporated into the structure displays the mechanical operations of the gondola. Constant pedestrian activity associated with the gondola and will activate the park. Both the gondola and gondola base area will serve as the gateway to the Park Avenue Redevelopment project (now Heavenly Village) and the mountain.

Program Summary

- Gondola Building

a. Loading Area and Lift Equipment	3,955 sf
b. Ticketing	995 sf
c. Retail Sales	700 sf
Total	5,650 sf

Characteristics

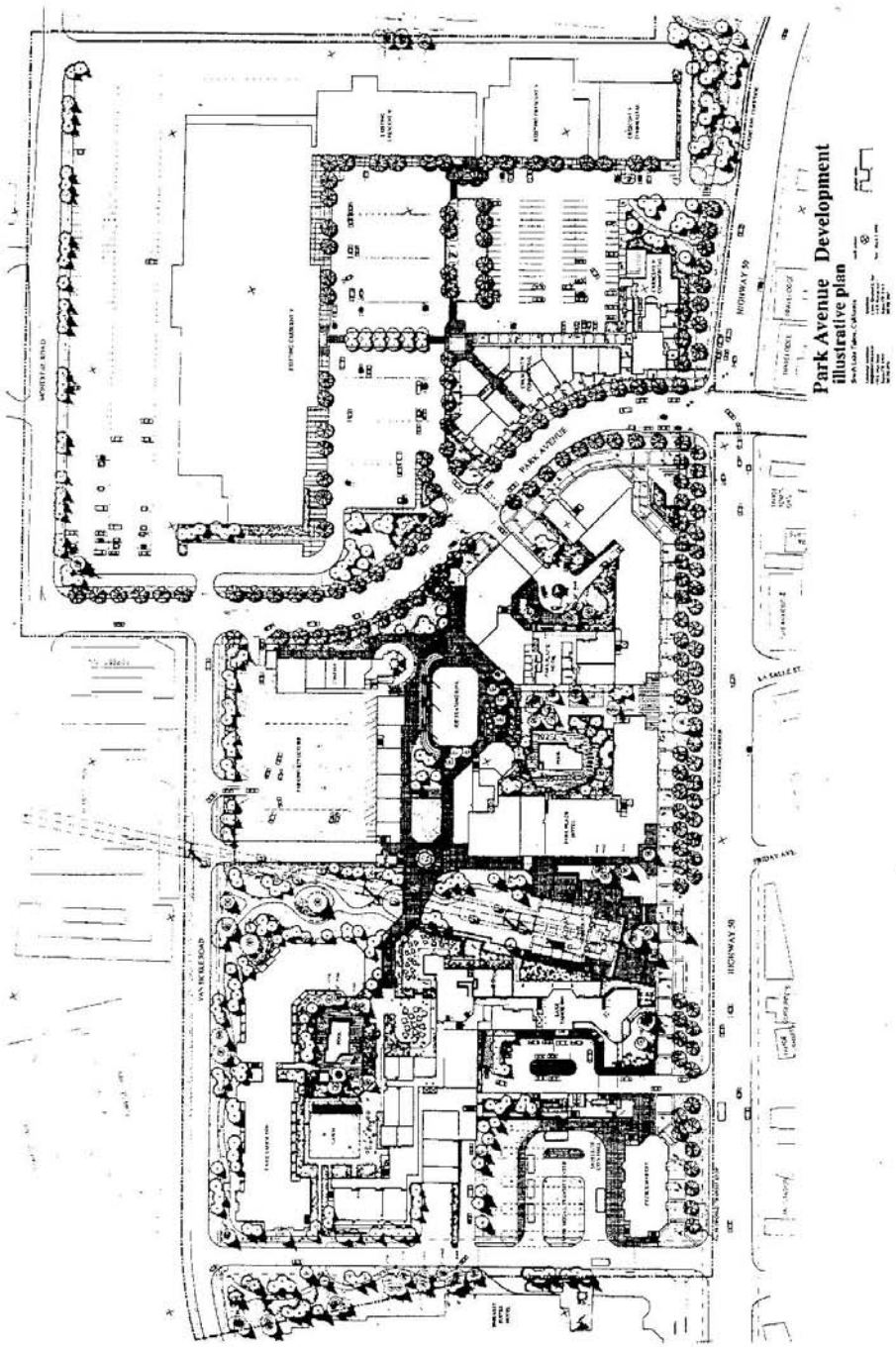
The arrival sequence of the gondola begins with ticketing protected by the building overhangs. The southern side of the gondola, which is located in the sun, is programmed for queuing. The gondola building will serve as a landmark structure for the area with a clock tower. The wood, stone and heavy timber building materials will relate to the common theme of the redevelopment project. The entrance to the gondola building will be at grade with the plaza to allow for easy access. The large Jeffrey Pines in front and to the side of the gondola will be preserved to provide a natural canopy and enclosure for the space.

Implementation Status

In 2000, the Gondola Base Station was constructed as planned as a part of the gondola project and the Park Avenue Redevelopment Project. The building ended up slightly smaller than originally planned due to cost constraints.

Master Plan Amendment 2007 Concept

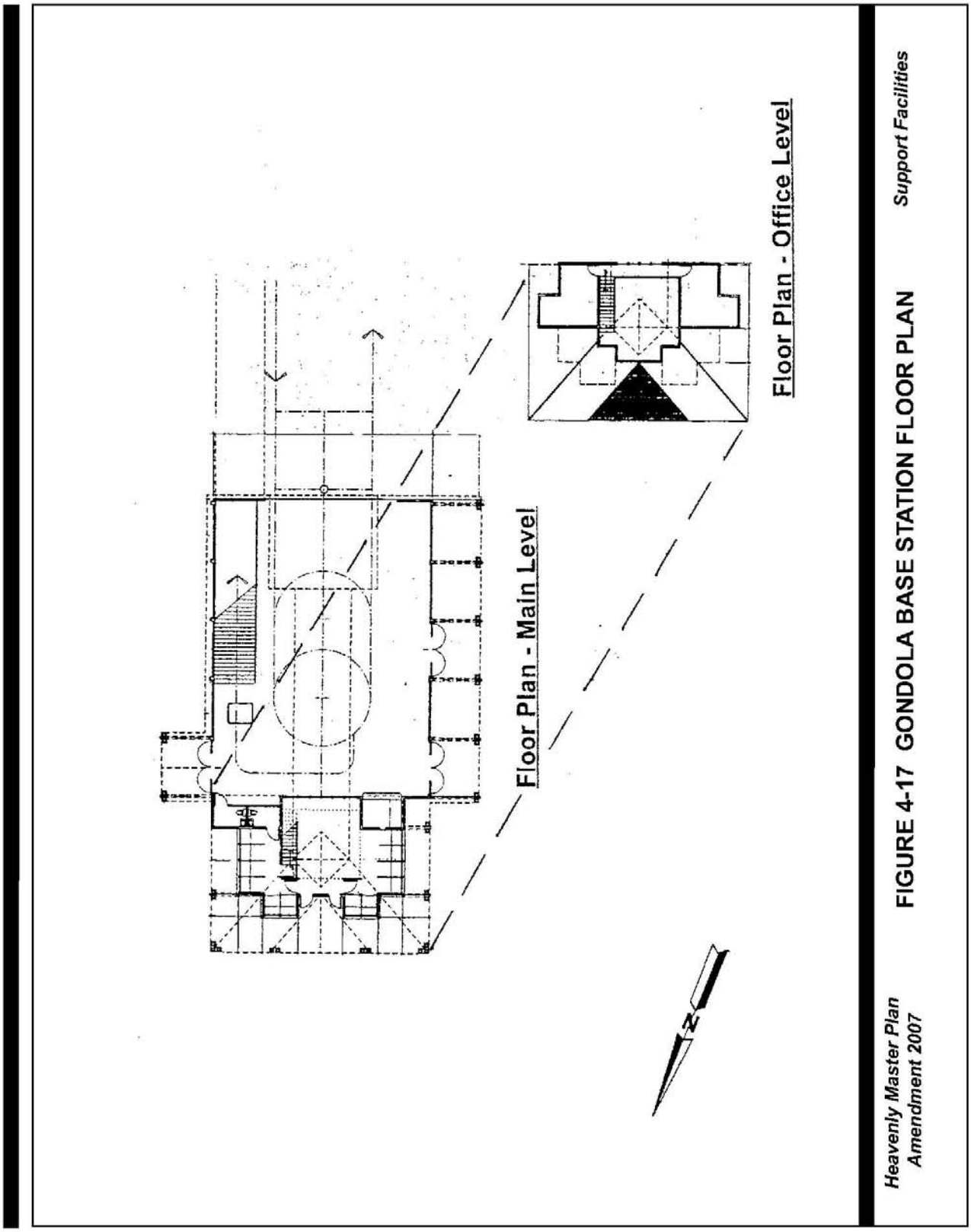
The Gondola and surrounding plaza have become the focal point of the downtown area. Nearly every component of the Heavenly Village program is complete. The physical and visual connection between Heavenly Village and the mountain has further reinforced Heavenly's position as the premier multi-season resort at Lake Tahoe. Special events and activities in the Gondola plaza are planned to grow and provide the community with a true center.



Heavenly Master Plan
Amendment 2007

FIGURE 4-16 GONDOLA BASE STATION SITE PLAN

Support Facilities



Heavenly Master Plan Amendment 2007

FIGURE 4-17 GONDOLA BASE STATION FLOOR PLAN

Support Facilities

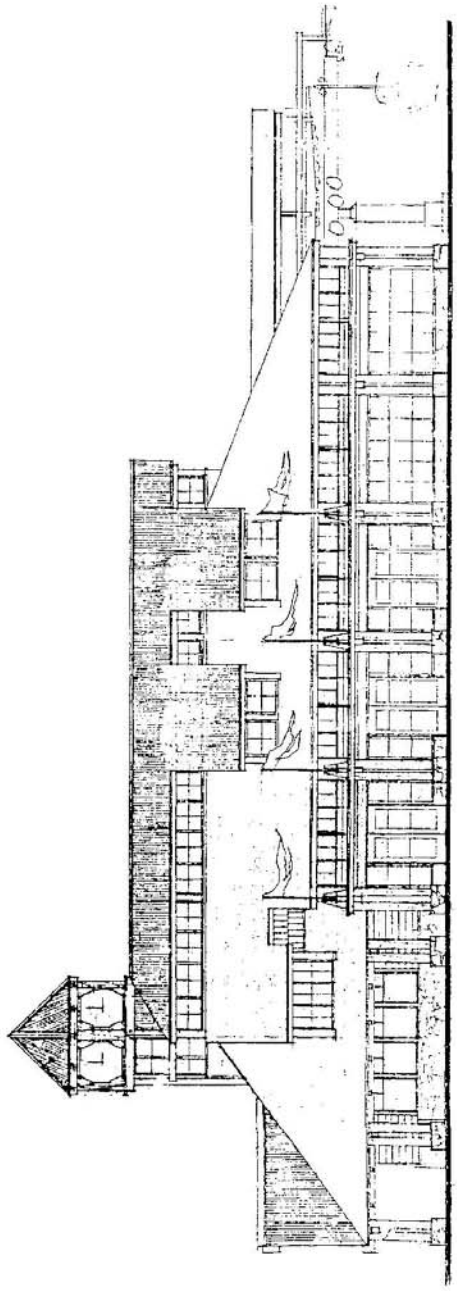


FIGURE 4-18 GONDOLA BASE STATION WEST ELEVATION

Support Facilities

Heavenly Master Plan Amendment 2007

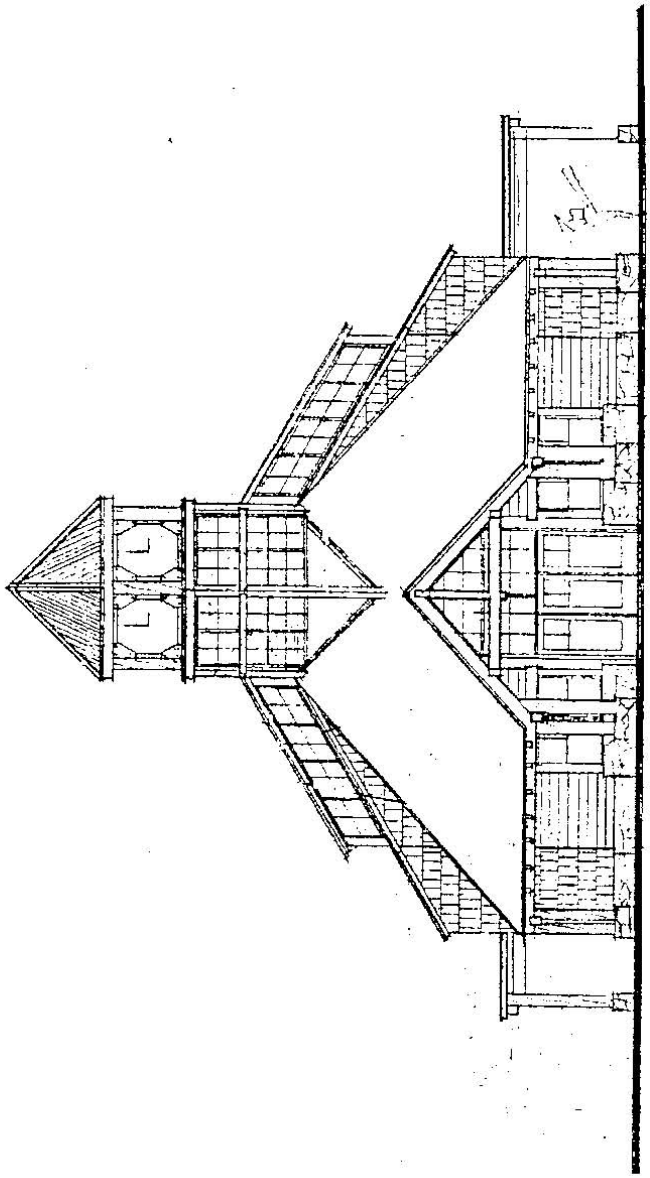


FIGURE 4-19 GONDOLA BASE STATION NORTH ELEVATION

Support Facilities

Heavenly Master Plan Amendment 2007

4.11 TOP OF TRAM UPPER VEHICLE MAINTENANCE FACILITY

Master Plan 1996 Concept

The 1996 Master Plan concept for the Upper Vehicle Maintenance facility was to relocate the existing facility located near the Top of the Tram to a new site near the top of the gondola in Von Schmidt's Flats. The new facility was planned to be a shared facility with the Building Maintenance and Lift Maintenance departments, which require an on-mountain facility in order to be responsive. It was planned to be approximately 20,600 square feet in area. The new facility was to include fuel storage and snow grooming vehicle parking. It was planned to be designed using similar building forms and as the top station and lodge in order to not appear like a maintenance facility. The existing facility was to be torn down, and the site restored.

Implementation Status

Following implementation of the gondola project, and several years of use, it is clear that the area near the top of the gondola should not be used for a maintenance facility because of its close proximity to recreation activities, both organized and dispersed. The area around the top of the gondola should be used exclusively for winter sports and summer visitors to the national forest lands.

Master Plan Amendment 2007 Concept

Maintain and expand the existing vehicle maintenance facility at the top of the tram. Its current location offers convenience and accessibility to and from the California Base and the upper mountain. The original section of the building will be rebuilt. A new 6,000 square foot addition will be located over the existing concrete pad. Landscape screening and a 6-foot high solid fence will be added to further screen the facility from public view. The existing parking area for snow grooming vehicles will be paved and will incorporate water quality BMPs. A new Lift Maintenance facility will be constructed adjacent to the existing summer maintenance road in order to meet the identified need. The Lift Maintenance building will include roll-up doors that are useable by light-duty trucks and snow cats. A second floor will contain parts and storage area. Both the Vehicle Shop addition and the Lift Maintenance building will incorporate architectural design features that are intended to make them fit better into the surrounding setting.

Program Summary

• Vehicle Maintenance (existing)	5,420 sf
• Vehicle Maintenance Addition	6,000 sf
Total	11,420 sf
• Lift Maintenance Building	3,200 sf
• Concrete Work Area (following addition)	6,340 sf
• Fuel Storage Area (existing)	4,085 sf
• Snowcat Parking Area (pave existing parking area)	4,800 sf

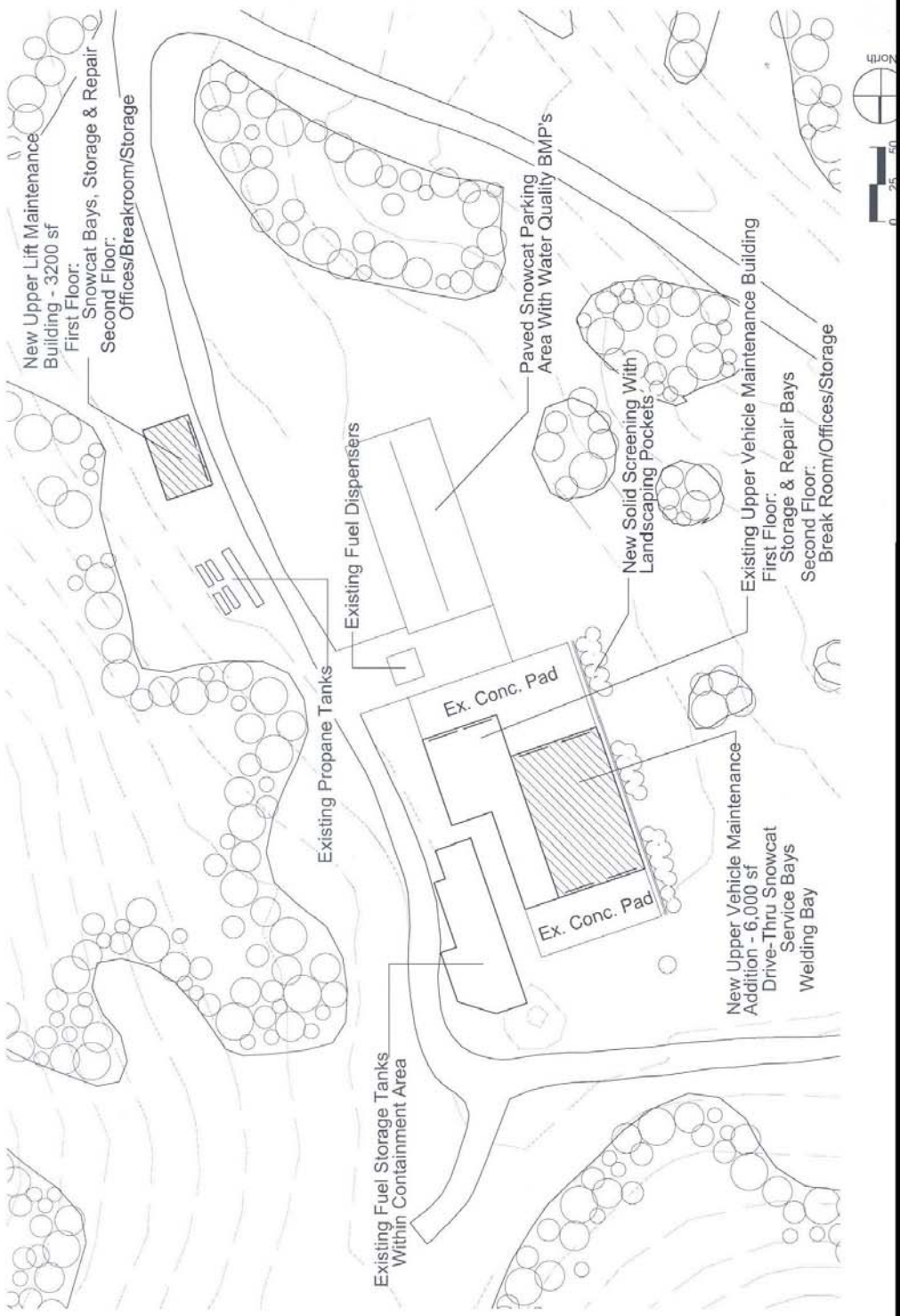


FIGURE 4-20 UPPER VEHICLE MAINTENANCE SHOP

Heavenly Master Plan Amendment 2007

Support Facilities

4.12 SAND DUNES LODGE

Master Plan Amendment 2007 Concept

The Sand Dunes Lodge site offers a spectacular setting at 9,600 feet elevation with unparalled views of the alpine Lake Tahoe Basin and the western edge of the Great Basin and Carson River Valley. The site is located along the Sand Dunes ski run below the top station of the Tamarack Express lift in Alpine County just outside of the Tahoe Region. It is easily accessible from the Comet, Dipper and Tamarack Express lifts. It provides a setting for skiers of all ability levels to meet and enjoy Heavenly's finest cuisine. 600 indoor seats and 400 outdoor seats are planned.

The concept for the building is to provide a landmark mountain lodge that provides a unique setting to enjoy the views while taking in lunch, a snack or a break from skiing. The building will be designed using the prospect and refuge theory of landscape architecture and site design. The building is planned to be Heavenly's signature lodge and will be sited and constructed to offer views out from the site while being sensitively tucked into a topographic shelf with mature trees and the peaks behind it to provide screening from key viewpoints below such as Lake Tahoe. Building forms and materials will blend with the natural setting and feature deep roof overhangs and outdoor decks. The Forest Service Built Environment Image Guide will be used as a design tool. LEED-certification of the building is planned.

The lodge will be open in the summer. It will be connected to the Top of the Gondola area and the Zipline Adventure Ridge top station by the hiking trails.

A conceptual site plan is shown below.

Program Summary

• Kitchen & Servery	8,000 sf
• Seating (including decks)	19,000 sf
• Retail	1,000 sf
• Restrooms	2,500 sf
• Ski School	500 sf
• Employee Areas	1,500 sf
• Access &Circulation	3,500 sf
Total	36,000 sf

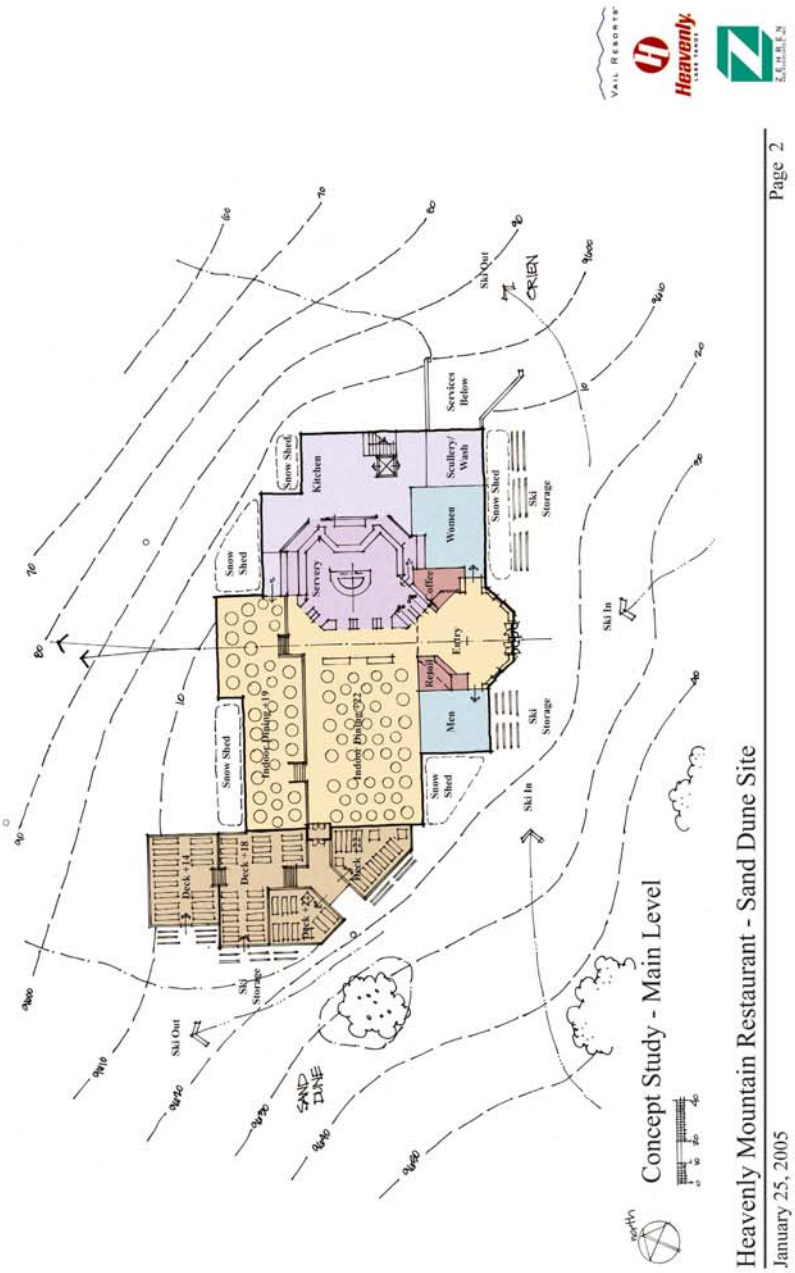
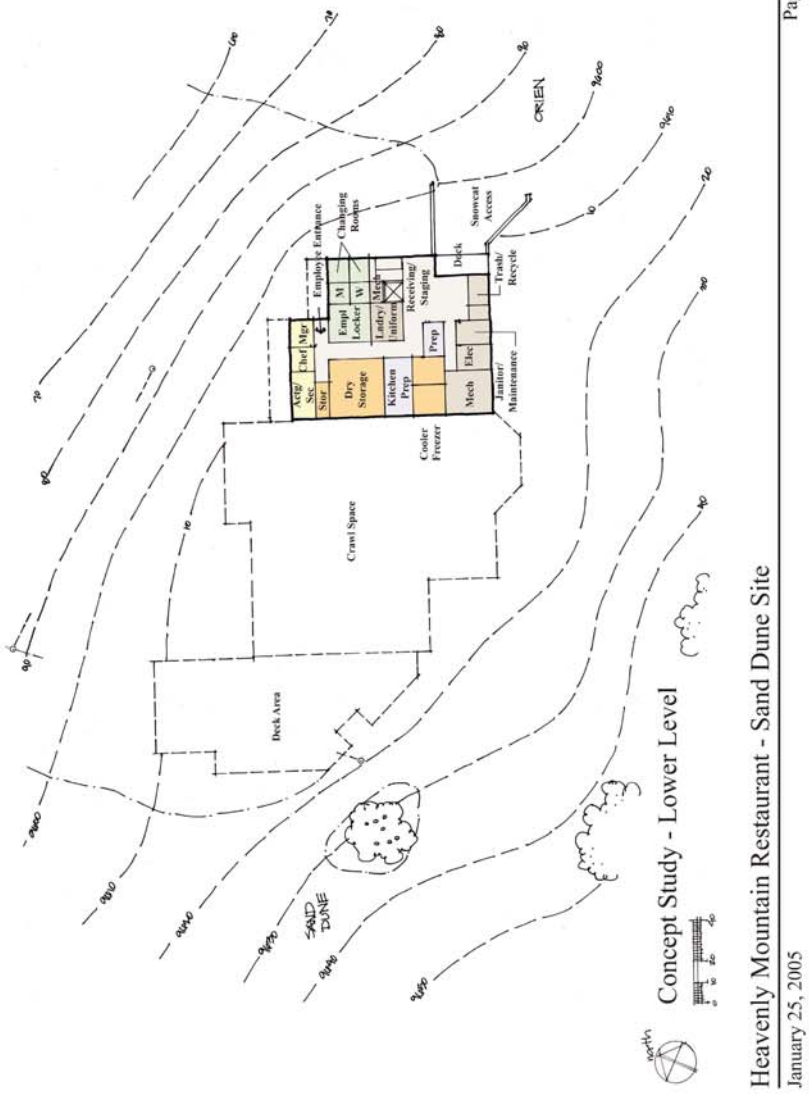


FIGURE 4-21 SAND DUNES LODGE BUILDING SITE PLAN

Heavenly Master Plan Amendment 2007

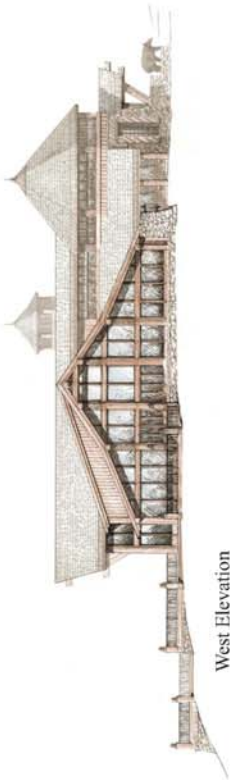
Support Facilities



Heavenly Master Plan Amendment 2007

FIGURE 4-22 SAND DUNES LODGE BUILDING SITE PLAN

Support Facilities



Heavenly Mountain Restaurant - Sand Dune Site

January 25, 2005

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Heavenly Master Plan Amendment 2007

FIGURE 4-23 SAND DUNES LODGE BUILDING ELEVATIONS

Support Facilities

4.13 SNOW BEACH

Master Plan 1996

Due to its small size and limited function, Snow Beach was not included in the 1996 Master Plan. The structure has been in existence since 1984 when it was first used as a snowmaking pumphouse. It was converted to its present use in 1992.

Implementation Status

Snow Beach, located along Patsy's Run near the Top of the Tram, has existed since 1992 as a convenient walk-up snack bar and public restrooms. Prior to that, the building was used as a snowmaking pump house building. It is approximately 1,200 square feet in area. Snow is groomed around the building and picnic tables are placed to allows on-snow seating for up to 80 people at one time. The restrooms and snack bar are conveniently located along Patsy's run and the creek area between the Top of the Tram and Sky Meadows restrooms for persons who are using Patsy's run, the Groove terrain park or returning from the upper California trails.

Master Plan Amendment 2007 Concept

Maintain the Snow Beach snack bar and restrooms. Change the design and menu to a more memorable concept of an outdoor-oriented barbecue and lunch concept that incorporates the fun and excitement of California snowboarding and surfing (Snow Beach). The name, menu and exterior design elements would reflect the new theme, which is closely related to snowboarding. A seasonal open air, tent shelter would cover a portion of the outdoor seating area. Overall seating would be expanded from 80 to 200 seats on the snow. Minor expansion of a roof cover/shelter is needed in order to accommodate additional food service and barbecue equipment.

A conceptual site plan is shown below.

Program Summary

• Food & Beverage Service Counter	500 sf
• Restrooms	500 sf
• Convenience Retail	100 sf
Total	1,100 sf

FIGURE 4-24 SNOW BEACH BUILDING SITE PLAN

Heavenly Master Plan Amendment 2007

Support Facilities

4.14 ANGEL'S ROOST COMMUNICATIONS SITE

Master Plan 1996 Concept

Angel's Roost is a small communications site located close to the Top of the Tram near the former top station of the old West Bowl chairlift (removed in 1998). It has been in existence as a communications and electronics site since it was first authorized in 1959 by the El Dorado National Forest, Lake Valley Ranger District under a Special Use Permit. Angel's Roost was not included in the MP (96) because the Forest Service Special Use Permit was granted to the Tahoe Armature Radio Association, which managed the site.

Implementation Status

In 1998, the Forest Service turned over control of the existing Angel's Roost Electronics site to Heavenly under a Communications Use Site Lease. The site presently contains one radio tower with individual antennas, a small building containing back-up batteries and a passive television reflector. Because of its location and elevation (approximately 8,731 feet above sea level), it has an unusual clarity of signal and can "see" into the Meyers and Upper Lake valley area. As a result, several personal communications systems (pcs) companies and similar service providers desire to locate antenna at Angel's Roost. The existing tower and building are very old and cannot be expanded due to structural issues.

Master Plan Amendment 2007 Concept

An Electronics Site Master Plan for Angel's Roost has been developed in order to allow for orderly development of the site. Because it is located within a developed winter sports recreation site, it offers many advantages rather than locating a new facility in a previously undeveloped area. The Angel's Roost Electronics Site Master Plan generally proposes for an ultimate build-out of two towers approximately 80 feet in height with up to nine antenna positions on each tower. The towers will be hidden from view and designed as pine trees or snags in order to blend into the surrounding landscape.

At ground level, a small, one-level support building will be built in phases as expansion of the antennas occurs. It will be approximately 20' x 40' in footprint area. It will not exceed 16-18 feet in height and be slightly elevated in order to be accessible in winter.There will not be a permanent road to the site. Maintenance and other operational activities can occur over the snow and on foot in the summer time. Presently, a summer maintenance road ends at the nearby lift maintenance facility, making a new spur road unnecessary.

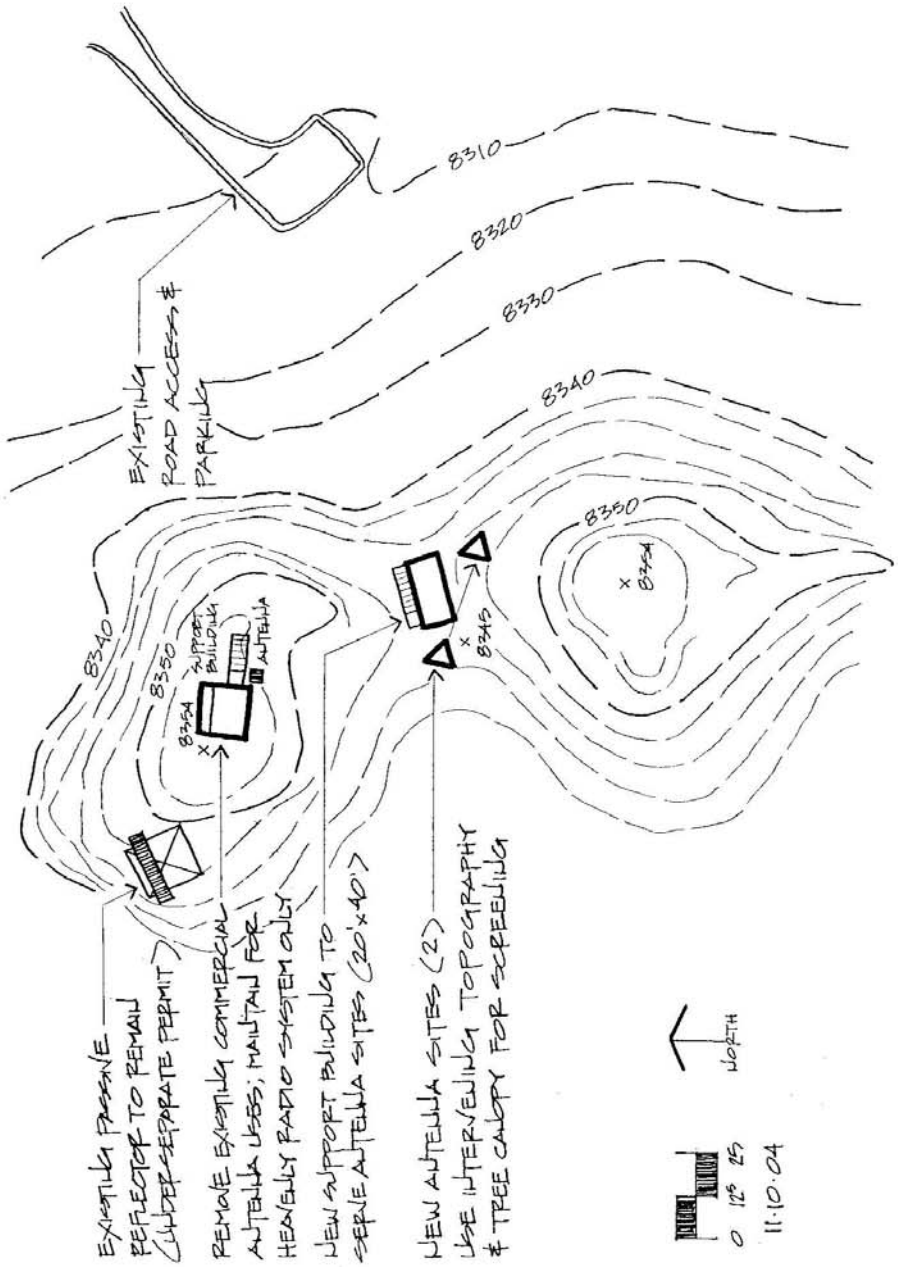

FIGURE 4-25 ANGEL'S ROOST COMMUNICATION SITE

Heavenly Master Plan Amendment 2007

Support Facilities

4.15 EAST PEAK LIFT MAINTENANCE

Master Plan 1996

The East Peak Lift Maintenance facility is located in on the lower level a small two-story building near the top of the Olympic Lift. It shares the building with the East Peak Ski Patrol Duty Station, which is located on the upper level of the building. The facility has existed since the mid 1970s. A Lift Maintenance records office is maintained on the upper level, along with ski patrol communications and equipment storage. Electrical switch gear is located on the lower level. Each floor has a gross square footage of approximately 1,000 square feet in area, including access and stairways. The facility is centrally located to the lift network on the Nevada side. Spare parts, light duty repair and testing equipment are kept there.

Implementation Status

No changes to the facility have occurred since the 1996 Master Plan. The addition of newer, high-speed lifts which are more complex to operate and maintain, combined with the addition of more lifts in the Von Schmidt's Flats area have placed greater demands on the existing facility. As a result, the Lift Maintenance facility needs have outgrown the available floor area.

Master Plan 2007 Concept

It is critical that a maintenance facility exists on the mountain in relative proximity to the lifts served by it. A minor expansion of the East Peak Lift Maintenance facility is needed in order to adequately maintain the new lifts installed on the Nevada side. The additional floor area can be constructed as an addition to the building. The existing building is a simple gable-roofed building that blends rather than contrasts with the setting. With some simple ornamentation (i.e., window and door trim, accent paint colors and window boxes), the building can easily take on the appearance of an alpine chalet. The revised program is shown below.

Program Summary

• Ski Patrol Duty Station	850 sf
• Ski Patrol Communications & Storage	300 sf
• Lift Maintenance Records Office	100 sf
• Lift Maintenance Shop Area	1,400 sf
• Stairs and Circulation	250 sf
• Electrical/Mechanical Room	100 sf
Total	3,000 sf

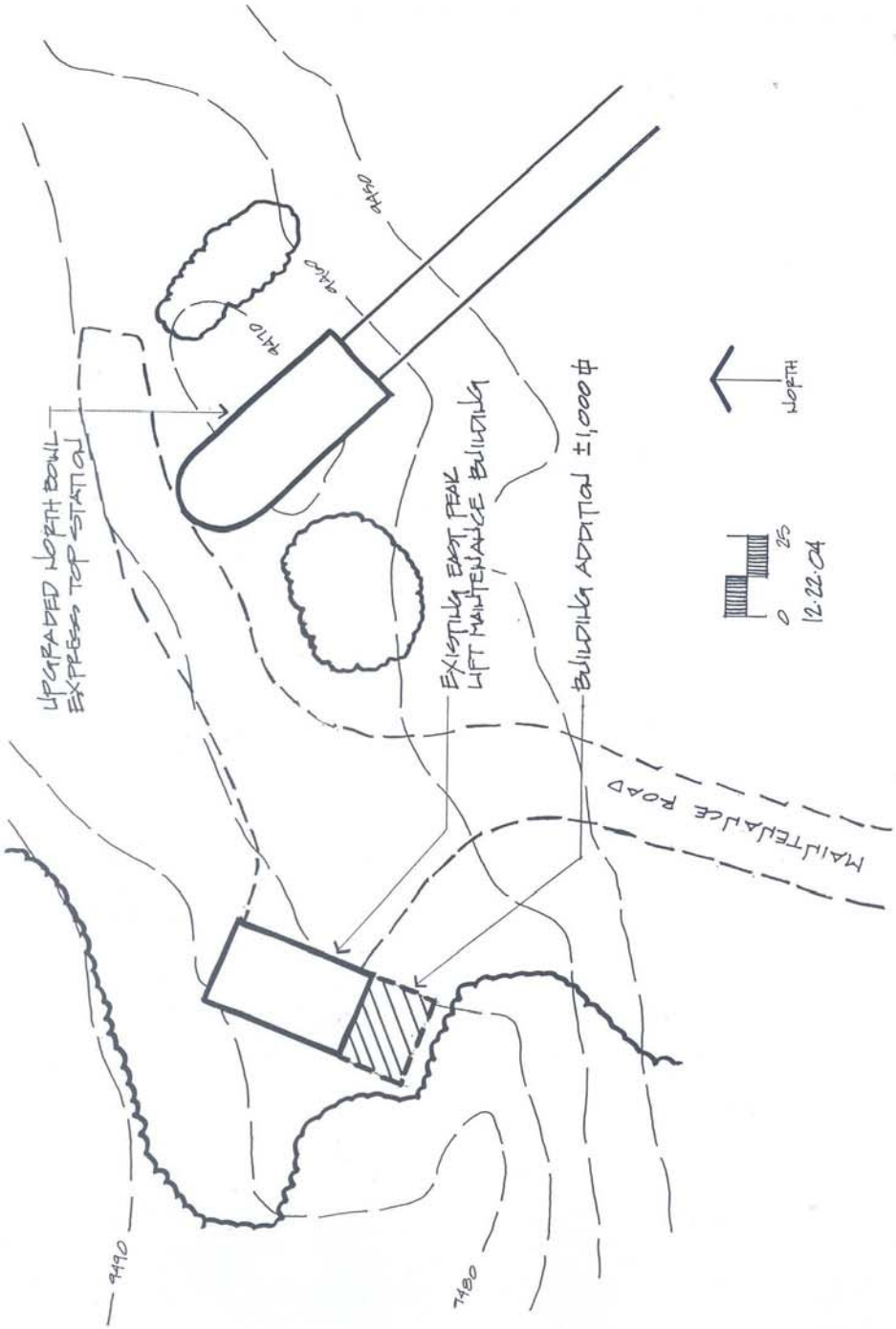

FIGURE 4-26 EAST PEAK LIFT MAINTENANCE PLAN

Support Facilities

Heavenly Master Plan Amendment 2007

5 Snowmaking Plan

5 SNOWMAKING PLAN

5.1 INTRODUCTION

Heavenly Mountain Resort presently covers approximately 309.6 acres of terrain with machine made snow using a predominantly internal mix air/water system. The system is in good condition, but in the past has been very labor intensive to operate with four separate pump stations, two reservoirs and three compressor locations. The most recent analysis calls for expanding the snowmaking to cover a total of 528.3 acres. The following analysis was completed by Sno.matic Controls and Engineering to provide guidance in expanding and upgrading the snowmaking system in view of recent technological changes in snowmaking. This includes developing strategies to:

1. Improve the safety and efficiency of the existing system
2. Reduce the operating complexities of the existing system
3. Develop a long range strategy to provide coverage for the expansion acreage as outlined under the master plan

The Heavenly Master Plan also calls for the reduction of noise levels associated with snowmaking. Mitigation measure 7.5-12 (Master Plan Chapter 7) provides the CNEL reduction targets and strategies for the three Heavenly base areas. As shown below in Table 5-1, significant noise reductions associated with fan gun operations occurred at the California Base Lodge during the 2003/2004 season.

Table 5-1

Summary of Measured Noise Levels at the Tahoe Seasons Resort
(Average Measured CNEL Values - Year 2003/2004)

Year	CNEL on days with Snowmaking	CNEL on Days without Snowmaking	CNEL During Measurement Period	Total # of Monitoring Days	Total # of Snowmaking Days
1996/1997	74.1 dBA	61.7 dBA	71.6 dBA		
1997/1998	73.5 dBA	61.8 dBA	70.2 dBA		
1998/1999	73.0 dBA	62.0 dBA	69.5 dBA		
1999/2000	74.3 dBA	62.0 dBA	73.0 dBA	141	101
2000/2001	74.1 dBA	60.0 dBA	72.2 dBA	140	89
2001/2002	73.9 dBA	60.3 dBA	72.1 dBA	145	93
2002/2003	72.0 dBA	63.1 dBA	68.3 dBA	150	61
2003/2004	67.4 dBA	62.3 dBA	65.7 dBA	104	56

* The 2000/2001 – 2003/2004 measurement site is different than in previous years

5.2 ASSESMENT OF THE EXISTING SYSTEM

The existing snowmaking capacity is summarized below:

Compressor Capacity:	California	16,800 cubic feet/minute (cfm) of permanent air[1]
	Nevada	38,200 cfm of permanent air
	Total	55,000 cfm
Water Capacity:	California	5 million gallon reservoir
(pumping up)		800 gallons per minute (gpm) withdrawal from STPUD[2]
		2,000 gpm gravity out of California Dam (flowing down)
		1,500 gpm above California Dam (pumping up)
	California Subtotal	4,300 gpm (2800 lower/1500 upper)
	Nevada	50 million gallon reservoir
		600 gpm pumping up from KGID (Stagecoach)[3]
		2,800 gpm snowmaking capacity[4]
	Nevada Subtotal	3,600 gpm
	Total Existing Pump Capacity	**7,900 gpm**

Low Energy Fan Guns 25 fixed, 12 mobile (as of November 2004)

Table 5-2

2007 Master Plan Amended Facilities - Existing & Proposed Snowmaking Summary

	Existing (2004)			MPA (07) proposed		
	Acres	***Acre feet***		***Acres***	***Acre feet***	
		(snow)	*(water)*		*(snow)*	*(water)*
California	188	659	366	230	805	447
Nevada	121	424	235	298	1,043	579
Total	**309**	**1,083**	**602**	**528**	**1,848**	**1,027**

[1] In previous years, 9,100 cfm of portable diesel compressor capacity has been rented. As of the 2003 operating season, these machines were eliminated and new fan guns installed with an equivalent production capacity
[2] Pump capacity. Estimated availability 800 gpm/24 hours per day under normal conditions
[3] Pump Capacity. Availability restricted to 600 gpm for 16 hours a day
[4] This does not account for 600 gpm capacity when Stagecoach pumps operated at higher capacity. Operating pumps at this low of a capacity is inefficient and needs to be reviewed.

General Design Parameters

a. Ideally, snowmaking systems should use water with temperatures near 35°F. This assists in the cooling process at the snowgun and point of application.

b. Some of the existing snowmaking terrain is very rough and rocky. Heavenly presently grooms this terrain in the winter, and relies on snowmaking operations to produce up to five feet of snow before opening trails. By not grading the trails or not burying the pipe, additional snow depth is required to cover these obstacles. At several locations the air and water pipelines switch position, leading to some confusion during nighttime snowmaking.

c. Since Heavenly is split into two large, distinctive terrain pods, remote control of the snowmaking operations is difficult. There are presently four distinctive pump or compressor stations located at various points throughout the resort. This can make the start-up of facilities inefficient. Heavenly has recently installed upgraded control software to improve system monitoring data collection and coordinate operation of the snowmaking facilities. It is expected that this software will improve the situation in the coming years.

d. Operations are affected by climatic conditions (e.g., wet bulb air temperature and electric utility rate structure).

e. Modify the existing construction practice of installing new air and water pipelines above ground. To solve the identified problems of freezing lines, in-ground valve vaults (for connecting above ground to below ground sections) and skier safety hazards. Determine additional situations on a project-by-project basis where below ground installation will improve system operations and avoid adverse environmental impacts.

5.3 ADDITIONAL SNOWMAKING ACREAGE

As stated above, Heavenly currently maintains and operates snowmaking on approximately 309 acres of skiing terrain. The Master Plan proposes expanding that terrain to include snowmaking on both proposed and existing terrain. The ultimate system buildout will cover 229.9 acres on the California side and 298.4 acres on the Nevada side. Thus the ultimate snowmaking system would cover 528.3 acres of terrain. This represents a net increase of 24.4 acres over the MP (96). Tables 5-3 and 5-4 of the Master Plan summarize the existing and proposed snowmaking acreage. These tables are shown below.

Table 5-3

Existing Snowmaking Facilities - September 2004

Master Plan '96 Trail #	Existing '07 Trail #	Trail Name	*Length (feet)*	*Width (feet)*	*Acreage (acres)*	*Ability (skill class)*	*Acre ft. / Acre (1)*	*Acre ft. (2)*	*Change from Master Plan '96 Approved Acres (3)*	*Change from Master Plan '96 Approved Acre ft. (4)*
California										
In Basin										
1	B1	EAST BOWL -THE FACE	3,220	220	16.3	EXP	5	81.3	0	0
2	B2	GUNBARREL	2,030	175	8.2	EXP	5	40.8	0	0
5	D1	WORLD CUP	1,000	260	6.0	LOW	2.7	16.1	0	0
6	1	ROUND-A-BOUT	17,000	40	15.6	NOV	2.7	42.1	0	0
7	E1	PATSY'S	1,730	200	7.9	NOV	2.7	21.4	0	0
9	G1	MAGGIES	5,210	80	8.4	NOV	2.7	22.7	0	0
10	G2	CAT TRACK	1,070	40	1.0	LOW	2.7	2.7	0	0
13	G5	MOMBO MEADOWS	1,190	170	4.1	LOW	2.7	11.1	0	0
14	G6	MOMBO	1,700	25	1.0	LOW	2.7	2.6	0	0
14	G7	LOWER MOMBO	1,200	90	2.5	LOW	2.7	6.7	0	0
16	2	RIDGE RUN	1,200	60	1.7	LOW	2.7	4.5	0	0
16	3	LOWER RIDGE RUN	4,610	155	15.9	NOV	2.7	42.9	0	0
23	H9	CANYON - SKY CANYON	2,400	128	6.1	LOW	2.7	16.5	0	0
24	H10	JACKPOT (RUSUTSU)	1,860	125	4.3	LOW	2.7	11.6	0	0
25	I1	LIZ'S	4,630	100	9.6	INT	2.7	25.9	0	0
26	H11	STEAMBOAT	1,430	130	3.3	INT	2.7	8.9	0	0
27	I3	UPPER ELLIE'S / ELLIE'S	4,490	130	12.4	ADV	4	49.6	0	0
*29	GG1	UPPER CALIFORNIA TRAIL	2,900	145	7.4	LOW	2.7	20.0	-1.3	-3.4
29	5	CALIFORNIA TRAIL	6,010	50	5.5	LOW	2.7	14.9	0	0
**29A	GG2	SAM'S DREAM	1,500	125	4.3	LOW	4	17.2	0	0
*29B	GG3	TAMARACK RETURN	650	50	0.8	LOW	2.7	2.2	0.8	2.0
*30	K1	PERFECT RIDE (WEST BOWL)	1,260	300	8.7	NOV	2.7	23.4	0	0
31	L1	ENCHANTED FOREST	500	200	2.3	BEG	2.7	6.2	-1.4	-3.8
32	M1	ENCHANTED FOREST II	390	100	0.9	BEG	2.7	2.4	0	0
33	N1	PIONEER PLATTER PULL	700	150	2.4	BEG	2.7	6.5	0	0
34	O1	LEARN TO SKI CENTER	400	150	1.4	BEG	2.7	3.7	0	0
*81	HH1	EASY STREET (1/2)	750	200	3.4	NOV	2.7	9.3	-4.5	-12.2
*82	GG6	CASCADE	2,800	125	8.0	LOW	4	32.1	1.2	4.8
**83	HH2	VON SCHMIDT'S TEACHING AREA	600	300	4.1	NOV	2.7	11.2	0	0
In Basin Total					**173.4**			**556.5**	**-5.2**	**-12.6**
					30.4					
Out of Basin										
54	V4	BIG DIPPER (1/5)	1,080	150	3.7	INT	2.7	10.0	0	0
58	V8	ORION'S (1/2)	1,820	200	8.4	LOW	2.7	22.6	0	0
**72	V10	METEOR (1/2)	970	130	2.9	INT	2.7	7.8	0.6	-1.5
Out of Basin Total					**15.0**			**40.4**	**0.0**	**-1.5**
California Total					**188.4**			**596.9**	**-5.2**	**-14.1**

Notes:

(1) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(2) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(3) Change from Master Plan (1996) Approved to Master Plan Amendment (2007) Proposed build out.

(4) Additional water requirements of Master Plan Amendment (2007) from Master Plan (1996).

* All or partially implemented since adoption of the Master Plan in 1996.

** Approved to be implemented but not yet constructed.

Table 5-3 (cont'd)

Existing Snowmaking Facilities - September 2004

Master Plan '96 Trail #	Existing '07 Trail #	Trail Name	*Length (feet)*	*Width (feet)*	*Acreage (acres)*	*Ability (skill class)*	*Acre ft. / Acre (1)*	*Acre ft. (2)*	*Change from Master Plan '96 Acres (3)*	*Change from Master Plan '96 Acre ft. (4)*
Nevada										
In Basin										
40	Q1	BOULDER (EDGEWOOD) BOWL	3,000	250	17.2	NOV	4	68.9	0	0
44	S1	OLYMPIC DOWNHILL (3/5)	5,190	130	15.5	LOW	2.7	41.8	0	0
65	9	STEVE'S	740	30	0.5	LOW	2.7	1.4	0	0
68	X1	BOULDER SKI SCHOOL	700	175	2.8	BEG	2.7	7.6	0	0
*81	HH1	EASY STREET (1/2)	760	200	3.5	NOV	2.7	9.4	-4.5	-12.2
In Basin Total					**39.5**			**129.1**	**-4.5**	**-12.2**
Out of Basin										
41	7	LOWER WAY HOME	1,900	120	5.2	BEG	2.7	14.1	0	0
44	S1	OLYMPIC DOWNHILL (2/5)	3,460	130	10.3	LOW	2.7	27.9	0	0
47	8	PEPI'S	3,500	50	4.0	LOW	2.7	10.8	0	0
48	S5	CROSSOVER	4,500	65	6.7	LOW	2.7	18.1	0	0
54	V4	BIG DIPPER (4/5)	4,300	150	14.8	INT	2.7	40.0	0	0
55	V6	ORION'S BELT	580	80	1.1	LOW	2.7	2.9	0	0
58	V8	ORION'S (1/2)	1,820	200	8.4	LOW	2.7	22.6	0	0
59	V9	LOWER ORION'S	1,590	108	2.9	LOW	2.7	7.8	0	0
62	W3	LITTLE DIPPER	2,600	175	10.4	INT	5	52.2	0	0
63	W4	COMET	3,250	190	14.2	LOW	2.7	38.3	0	0
**72	V10	METEOR (1/2)	985	130	2.9	INT	2.7	7.9	0.6	-1.5
*81A	HH3	SILVER SPUR	450	50	0.5	LOW	2.7	1.4	0.5	1.4
Out of Basin Total					**81.5**			**244.1**	**1.1**	**-0.1**
Nevada Total					**121.0**			**373.2**	**-3.4**	**-12.3**
Grand Total					**309.4**			**970.1**	**-8.6**	**-26.4**

Notes:

(1) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(2) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(3) Change from Master Plan (1996) Approved to Master Plan Amendment (2007) Proposed build out.

(4) Additional water requirements of Master Plan Amendment (2007) from Master Plan (1996).

* All or partially implemented since adoption of the Master Plan in 1996.

** Approved to be implemented but not yet constructed.

Table 5-4

2007 Master Plan Amended Facilities - Snowmaking at Buildout

2007 Master Plan Amendment Trail #	1996 Master Plan Trail #	Trail Name	2007 Master Plan Amendment Snowmaking Action (1)	Length (feet)	Width (feet)	Acreage (acres)	Ability (skill class)	Acre ft. / Acre (2)	Acre ft. (3)	Change from Master Plan '96 Acres (4)	Change from Master Plan '96 Acre ft. (5)
California											
In Basin											
'pod' trails											
B1	1	EAST BOWL -THE FACE	EXISTING	3,220	220	16.3	EXP	5	81.3	*0*	*0.0*
B2	2	GUNBARREL	EXISTING	2,030	175	8.2	EXP	5	40.8	*0*	*0.0*
B3	3	PISTOL	REMOVE	1,220	130	0.0	EXP	5	0.0	*-3.6*	*-18.2*
B4	4	WEST BOWL	REMOVE	2,040	100	0.0	ADV	5	0.0	*-4.7*	*-23.4*
D1	5	WORLD CUP	EXISTING	1,000	260	6.0	LOW	2.7	16.1	*0*	*0.0*
E1	7	PATSY'S	EXISTING	1,730	200	7.9	NOV	2.7	21.4	*0*	*0.0*
E2	8	GROOVE	RETAIN	1,640	100	3.8	NOV	2.7	10.2	*0*	*0.0*
G1	9	MAGGIES	EXISTING	5,210	80	8.4	NOV	2.7	22.7	*0*	*0.0*
G2	10	CAT TRACK	EXISTING	1,070	40	1.0	LOW	2.7	2.7	*0*	*0.0*
G3	11	SWING TRAIL	NO ACTION	1,190	30	0.0	LOW	0	0.0	*0*	*0.0*
G4	12	WATERFALL	RETAIN	760	200	3.5	ADV	5	17.4	*0*	*0.0*
G5	13	MOMBO MEADOWS	EXISTING	1,190	170	4.1	LOW	2.7	11.1	*0*	*0.0*
G6	14	MOMBO	EXISTING	1,700	25	1.0	LOW	2.7	2.6	*0*	*0.0*
G7	14	LOWER MOMBO	EXISTING	1,200	90	2.5	LOW	2.7	6.7	*0*	*0.0*
G8	15	POWDERBOWL	RETAIN	1,540	100	3.5	NOV	4	14.1	*0*	*0.0*
G9	NC	NEW - POWDERBOWL II (GLADED)	NEW	1,640	50	1.9	INT	2.7	5.1	*1.9*	*5.1*
H1	17	WOODS TRAIL	NO ACTION	2,960	25	0.0	NOV	0	0.0	*0*	*0.0*
H2	18	BETTY'S SWING	NO ACTION	1,080	30	0.0	INT	0	0.0	*0*	*0.0*
H3	19	RIDGE BOWL	NO ACTION	1,400	100	0.0	INT	0	0.0	*0*	*0.0*
H4	19	RIDGE CHUTE	NO ACTION	860	50	0.0	INT	0	0.0	*0*	*0.0*
H5	20	HIGH ROLLER (BETTY'S RUN)	RETAIN	3,680	150	12.7	INT	2.7	34.2	*0*	*0.0*
H6	20	DOUBLE DOWN (BETTY'S BOWL)	NO ACTION	400	180	0.0	EXP	0	0.0	*0*	*0.0*
H7	21	LOWER BETTY'S	NO ACTION	710	50	0.0	INT	0	0.0	*0*	*0.0*
H8	22	BETTY'S CUTOFF	NO ACTION	570	130	0.0	INT	0	0.0	*0*	*0.0*
H9	23	CANYON - SKY CANYON	EXISTING	2,400	128	6.1	LOW	2.7	16.5	*0*	*0.0*
H10	24	JACKPOT (RUSUTSU)	EXISTING	1,860	125	4.3	LOW	2.7	11.6	*0*	*0.0*
H11	26	HIGH ROLLER (STEAMBOAT)	EXISTING	1,430	130	3.3	INT	2.7	8.9	*0*	*0.0*
H12	NC	NEW - BETTY'S CUTOFF	NO ACTION	600	150	0.0	LOW	0	0.0	*0*	*0.0*
H13	NC	NEW - BETTY'S ESCAPE	NO ACTION	250	60	0.0	NOV	0	0.0	*0*	*0.0*
I1	25	LIZ'S	EXISTING	4,630	100	9.6	INT	2.7	25.9	*0*	*0.0*
I2	27	ELLIE'S SWING - EXTENSION	RETAIN	2,740	70	3.4	INT	2.7	9.2	*0*	*0.0*
I3	27	UPPER ELLIE'S / ELLIE'S	EXISTING	4,490	130	12.4	ADV	4	49.6	*0*	*0.0*
I4	NC	NEW - SKIWAYS 1 (GLADED)	NO ACTION	3,089	50	0.0	INT	0	0.0	*0*	*0.0*
I5	NC	NEW - SKIWAYS 2 (GLADED)	NO ACTION	2,982	50	0.0	INT	0	0.0	*0*	*0.0*
K1	30	PERFECT RIDE (WEST BOWL)	EXISTING	1,260	300	8.7	NOV	2.7	23.4	*0*	*0.0*
*L1	31	LOWER SKI SCHOOL	EXISTING	500	200	2.3	BEG	2.7	6.2	*-1.4*	*-3.8*
M1	32	CHILDRENS SKI CENTER	EXISTING	390	100	0.9	BEG	2.7	2.4	*0*	*0.0*
N1	33	PIONEER PLATTER PULL	EXISTING	700	150	2.4	BEG	2.7	6.5	*0*	*0.0*
O1	34	LEARN TO SKI CENTER	EXISTING	400	150	1.4	BEG	2.7	3.7	*0*	*0.0*
*GG1	29	(UPR.) CALIFORNIA TRAIL	EXISTING	2,900	145	7.4	LOW	2.7	20.0	*-1.3*	*-3.4*
**GG2	29A	SAM'S DREAM	EXISTING - UNBUILT	1,430	130	4.3	LOW	4	17.1	*0.2*	*0.8*
*GG3	29B	TAMARACK RETURN	EXISTING	650	50	0.7	LOW	2.7	2.0	*0.7*	*2.0*
GG5	64	49ER	RETAIN	1,710	40	1.6	LOW	4	6.3	*0*	*0.0*
*GG6	82	CASCADE	EXISTING	2,800	125	8.0	LOW	4	32.1	*1.2*	*4.8*
*HH1	81	EASY STREET (1/2)	EXISTING	740	200	3.4	NOV	2.7	9.2	*-12.4*	*-33.6*
HH2	81	EASY STREET II (1/2)	NO ACTION	300	300	0.0	NOV	2.7	0.0	*0*	*0.0*
non 'pod' transport trails											
1	6	ROUND-A-BOUT	EXISTING	17,000	40	15.6	NOV	2.7	42.1	*0*	*0.0*
1	6	ROUND-A-BOUT - REALIGNMENT	NEW	1,691	40	1.6	NOV	2.7	4.2	*1.6*	*4.2*
2	16	RIDGE RUN	EXISTING	1,200	60	1.7	LOW	2.7	4.5	*0*	*0.0*
3	16	LOWER RIDGE RUN	EXISTING	4,610	155	15.9	NOV	2.7	42.9	*0*	*0.0*
4	28	SKYLINE TRAIL	RETAIN	3,100	54	2.8	LOW	2.7	7.6	*0*	*0.0*
5	29	CALIFORNIA TRAIL	EXISTING	6,010	50	5.5	LOW	2.7	14.9	*0*	*0.0*
5A	NC	NEW- CAL. TRAIL ALTERNATIVE	NEW	1,800	40	1.7	LOW	2.7	4.5	*1.7*	*4.5*
10	67	VON SCHMIDT'S (1/4)	RETAIN	1,050	50	1.2	LOW	2.7	3.3	*0*	*0.0*
**11	83	VON SCHMIDT'S - MEADOW	RETAIN	600	300	4.1	BEG	2.7	11.1	*0*	*0.0*
12	NC	NEW - MAGGIES CANYON (GLADED)	NO ACTION	1,890	150	0.0	ADV	0	0.0	*0*	*0.0*
In Basin Total						**210.8**			**672.0**	**-16.1**	**-61.0**
Out of Basin											
'pod' trails											
V1	51	MILKY WAY BOWL (2/3)	NO ACTION	1,800	900	0.0	EXP	0	0.0	*0*	*0.0*
V3	53	DIPPER KNOB	RETAIN	1,730	30	1.2	INT	2.7	3.2	*0*	*0.0*
V4	54	BIG DIPPER (1/5)	EXISTING	1,080	150	3.7	INT	2.7	10.0	*0*	*0.0*
V7	57	DIPPER BOWL (1/2)	NO ACTION	680	450	0.0	EXP	0	0.0	*0*	*0.0*
V8	58	ORION'S (1/2)	EXISTING	1,820	200	8.4	LOW	2.7	22.6	*0*	*0.0*
*V10	72	METEOR (1/2) - (GLADED)	EXISTING - UNBUILT	970	130	2.9	INT	2.7	7.8	*0.6*	*-1.5*
**V11	75	METEOR II (1/3) - (GLADED)	REMOVE	500	100	0.0	ADV	2.7	0.0	*-1.6*	*-6.5*
GG4	61	SAND DUNES	RETAIN	1,610	80	3.0	INT	2.7	8.0	*0*	*0.0*
Out of Basin Total						**19.1**			**51.6**	**-1**	**-8.0**
California Total						**229.9**			**723.6**	**-17.1**	**-69.0**

Notes:

(1) Action proposed: EXISTING = currently exists, RETAIN = approved in MP (96) - retain in MPA (07), REMOVE = approved in MP (96) - remove in MPA (07), NEW = not considered in MP (96) - proposed in MPA (07).

(2) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(3) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(4) Change from Master Plan (1996) Approved to Master Plan Amendment (2007) Proposed build out.

(5) Additional water requirements of Master Plan Amendment (2007) from Master Plan (1996).

* All or partially implemented since adoption of the Master Plan in 1996.

** Approved to be implemented but not yet constructed.

Table 5-4 cont'd

2007 Master Plan Amended Facilities - Snowmaking at Buildout

2007 Master Plan Amendment Trail #	1996 Master Plan Trail #	Trail Name	2007 Master Plan Amendment Snowmaking Action (1)	Length (feet)	Width (feet)	Acreage (acres)	Ability (skill class)	Acre ft. / Acre (2)	Acre ft. (3)	Change from Master Plan '96 Acres (4)	Change from Master Plan '96 Acre ft. (5)
Nevada											
In Basin											
'pod' trails											
Q1	40	BOULDER (EDGEWOOD) BOWL	EXISTING	3,000	250	17.2	NOV	4	68.9	*0*	*0*
S1	44	OLYMPIC DOWNHILL (3/5)	EXISTING	5,190	130	15.5	LOW	2.7	41.8	*0*	*0*
S2	45	BOULDER CHUTE (O75)	RETAIN	1,330	90	2.7	INT	4	11.0	*0*	*0*
S3	46	NORTH BOWL	RETAIN	3,770	90	7.8	ADV	5	38.9	*0*	*0*
S4	46	UPPER NORTH BOWL	RETAIN	1,260	145	4.2	ADV	5	21.0	*0*	*0*
S8	NC	NEW - NORTH BOWL 2	NEW	1,785	125	5.1	LOW	2.7	13.8	*5.1*	*13.8*
S9	NC	NEW - NORTH BOWL 3 (GLADED)	NEW	2,835	125	8.1	INT	2.7	22.0	*8.1*	*22.0*
S10	NC	NEW - NORTH BOWL 4 (GLADED)	NEW	2,730	125	7.8	INT	2.7	21.2	*7.8*	*21.2*
X1	68	BOULDER SKI SCHOOL	EXISTING	700	175	2.8	BEG	2.7	7.6	*0*	*0*
*HH1	81	EASY STREET (1/2)	EXISTING	740	200	3.4	NOV	2.7	9.2	*-12.4*	*-33.6*
HH2	81	EASY STREET II (1/2)	NO ACTION	300	300	0.0	NOV	0	0.0	*0*	*0*
non 'pod' transport trails											
9	65	STEVE'S	EXISTING	740	30	0.5	LOW	2.7	1.4	*0*	*0.00*
10	67	VON SCHMIDT'S (1/4)	RETAIN	1,050	50	1.2	LOW	2.7	3.3	*0*	*0.00*
In Basin Total						**76.5**			**259.9**	**8.6**	**23.4**
Out of Basin											
'pod' trails											
R1	42	STAGECOACH	RETAIN	4,500	120	12.4	INT	4	49.6	*0*	*0.0*
R2	43	(UPPER) STAGECOACH	RETAIN	1,810	100	4.2	INT	4	16.6	*0*	*0.0*
R3	NC	NEW - STAGECOACH 2	NO ACTION	2,070	150	0.0	INT	5	0.0	*0*	*0.0*
R4	NC	NEW - STAGECOACH 3	NO ACTION	1,245	125	0.0	INT	5	0.0	*0*	*0.0*
S1	44	OLYMPIC DOWNHILL (2/5)	EXISTING	3,460	130	10.3	LOW	2.7	27.9	*0*	*0.0*
S5	48	CROSSOVER	EXISTING	4,500	65	6.7	LOW	2.7	18.1	*0*	*0.0*
S6	66	PONDEROSA (BONANZA BOWL)	RETAIN	2,160	80	4.0	INT	4	15.9	*0*	*0.0*
S7	66a	EAST PEAK	RETAIN	2,150	80	3.9	INT	4	15.8	*0*	*0.0*
U1	49	PERIMETER	RETAIN	5,870	100	13.5	LOW	2.7	36.4	*0*	*0.0*
U2	50	GALAXY	RETAIN	4,900	90	10.1	LOW	2.7	27.3	*0*	*0.0*
U3	NC	NEW - GALAXY 1	NEW	2,520	150	8.7	NOV	2.7	23.4	*8.7*	*23.4*
U4	NC	NEW - GALAXY 2	NEW	788	150	2.7	NOV	2.7	7.3	*2.7*	*7.3*
V1	51	MILKY WAY BOWL (1/3)	NO ACTION	900	900	0.0	EXP	0	0.0	*0*	*0.0*
V2	52	UPPER PERIMETER (RIM TRAIL)	NO ACTION	3,280	50	0.0	EXP	0	0.0	*0*	*0.0*
V4	54	BIG DIPPER (4/5)	EXISTING	4,300	150	14.8	INT	2.7	40.0	*0*	*0.0*
V5	54	LOWER BIG DIPPER	RETAIN	1,600	100	3.7	INT	2.7	9.9	*0*	*0.0*
V6	55	ORION'S BELT	EXISTING	580	80	1.1	LOW	2.7	2.9	*0*	*0.0*
V7	57	DIPPER BOWL (1/2)	NO ACTION	680	450	0.0	EXP	5	0.0	*0*	*0.0*
V8	58	ORION'S (1/2)	EXISTING	1,820	200	8.4	LOW	2.7	22.6	*0*	*0.0*
V9	59	LOWER ORION'S	EXISTING	1,590	108	2.9	LOW	2.7	7.8	*0*	*0.0*
*V10	72	METEOR (1/2) - (GLADED)	EXISTING - UNBUILT	985	130	2.9	INT	2.7	7.8	*0.6*	*-1.5*
**V11	75	METEOR II (2/3) - (GLADED)	REMOVE	1,000	100	0.0	ADV	2.7	0.0	*-3.2*	*-12.9*
V12	NC	NEW - ORION'S II	NEW	1,200	125	3.4	INT	2.7	9.3	*3.4*	*9.3*
W1	56	ARIES	RETAIN	920	60	1.3	INT	2.7	3.4	*0*	*0.0*
W2	60	JACK'S	NEW	1,080	120	3.0	INT	2.7	8.0	*3*	*8.0*
W3	62	LITTLE DIPPER	EXISTING	2,600	175	10.4	INT	5	52.2	*0*	*0.0*
W4	63	COMET	EXISTING	3,250	190	14.2	LOW	2.7	38.3	*0*	*0.0*
W5	NC	NEW - ARIES II (GLADED)	NO ACTION	1,730	150	0.0	ADV	0	0.0	*0*	*0.0*
Z1	86	NEW - WELLS FARGO 1	NEW	1,875	125	5.4	INT	2.7	14.5	*5.4*	*14.5*
Z2	87	NEW - WELLS FARGO 2	RETAIN	3,619	100	8.3	INT	2.7	22.4	*-6.1*	*-35.3*
Z3	NC	NEW - WELLS FARGO 3	NEW	3,963	125	11.4	ADV	2.7	30.7	*11.4*	*30.7*
Z4	91	NEW - WELLS FARGO 4	RETAIN	3,718	150	12.8	INT	2.7	34.6	*-0.1*	*-0.4*
Z5	NC	NEW - WELLS FARGO 5	NEW	1,203	100	2.8	INT	2.7	7.5	*2.8*	*7.5*
Z6	NC	NEW - WELLS FARGO 6	NO ACTION	1,354	85	0.0	INT	0	0.0	*0*	*0.0*
Z7	NC	NEW - WELLS FARGO 7	NEW	2,411	125	6.9	ADV	2.7	18.7	*6.9*	*18.7*
Z8	89	NEW - WELLS FARGO 8	NO ACTION	4,776	100	0.0	ADV	0	0.0	*0*	*0.0*
NA	73	MP '96 NEW - MPA '04 ELIMINATED	REMOVE	3,280	30	0.0	NA	4	0.0	*-2.3*	*-9.0*
NA	76	MP '96 NEW - MPA '04 ELIMINATED	REMOVE	3,390	150	0.0	NA	0	0.0	*0*	*0.0*
NA	77	MP '96 NEW - MPA '04 ELIMINATED	REMOVE	2,570	150	0.0	NA	4	0.0	*-8.8*	*-35.4*
DD1	79	MOTT CANYON	NO ACTION	2,000	2,000	0.0	EXP	0	0.0	*0*	*0.0*
DD2	79	KILLEBREW	NO ACTION	1,900	1,000	0.0	EXP	0	0.0	*0*	*0.0*
*HH3	81A	SILVER SPUR	NO ACTION	450	50	0.5	LOW	2.7	1.4	*0.5*	*1.4*
Non 'pod' transport trails											
NA	41	OLD WAY HOME	REMOVE	9,090	30	0.0	BEG	2.7	0.0	*-6.3*	*-16.9*
6	41	NEW - NEVADA TRAIL (WAY HOME)	NEW	8,590	30	5.9	BEG	2.7	16.0	*5.9*	*16.0*
7	41	LOWER WAY HOME	EXISTING	1,900	120	5.2	BEG	2.7	14.1	*0*	*0.0*
8	47	PEPI'S	EXISTING	3,500	50	4.0	LOW	2.7	10.8	*0*	*0.0*
10	67	VON SCHMIDT'S (1/2)	RETAIN	2,100	50	2.4	INT	2.7	6.5	*0*	*0.0*
14	NC	NEW - GALAXY ACCESS	NEW	2,234	125	6.4	INT	2.7	17.3	*6.4*	*17.3*
15	NC	NEW - SCORPION	NEW	2,754	100	6.3	INT	2.7	17.1	*6.3*	*17.1*
16	NC	NEW - FARGO TO GALAXY	NEW	475	100	1.1	NOV	2.7	2.9	*1.1*	*2.9*
17	NC	NEW - FARGO TO STAGECOACH	NO ACTION	1,578	75	0.0	NOV	0	0.0	*0*	*0.0*
18	NC	NEW - STAGECOACH SPUR	NO ACTION	1,249	75	0.0	INT	0	0.0	*0*	*0.0*
Out of Basin Total						**222.0**			**655.2**	**38.3**	**62.7**
Nevada Total						**298.4**			**915.1**	**46.9**	**86.1**
Grand Total						**528.3**			**1,638.7**	**29.8**	**17.1**

Notes:

(1) Action proposed: EXISTING = currently exists, RETAIN = approved in MP (96) - retain in MPA (07), REMOVE = approved in MP (96) - remove in MPA (07), NEW = not considered in MP (96) - proposed in MPA (07).

(2) Acre feet of water needed per acre of ski run to achieve complete snow coverage. 2.7 indicates a ski run will require 2.7 acre feet of water per ski run acre per year to achieve snow coverage of ground cover. This number is assumed to be worst case for a ski season.

(3) Total acre feet of water required for complete snow coverage of the ski run for a ski season. This number is calculated by multiplying the Snowmaking Acreage by the Acre ft/Acre column.

(4) Change from Master Plan (1996) Approved to Master Plan Amendment (2007) Proposed build out.

(5) Additional water requirements of Master Plan Amendment (2007) from Master Plan (1996).

* All or partially implemented since adoption of the Master Plan in 1996.

** Approved to be implemented but not yet constructed.

5.4 INFRASTRUCTURE DESIGN RECOMMENDATIONS

Summary and Conclusions

Overall, Heavenly has focused on improving the safety, reliability, and efficiency of the snowmaking system as a whole. Heavenly Mountain Resort has made a number of specific improvements to snowmaking operations in the last two to three years including: the addition of a number of low energy fan guns, elimination of rented diesel compressors, and installation of a process control system. The existing system is presently constrained by water recharge rates to the existing reservoirs, and to adequately cover the existing snowmaking acreage on an 80/80 basis (80% of the snowmaking acreage in 80% of the years), roughly 500 gpm of additional supply is required. To accommodate the expansion of snowmaking terrain, the water supply system will need to be revamped to provide 4,000 gpm of recharge to the present reservoirs, along with the addition of 50 more fan guns.

The implications of these capacity expansion recommendations are provided in the following sections:

1. Water Supply
2. Pumping System
3. Compressed Air System
4. Piping
5. Process Control
6. Water Cooling
7. Automation

These sections include recommendations based on observations of existing system design and operation issues that presently constrain snowmaking production rates.

1. Water Supply

Two factors make the development of additional water supply critical. The first is the high cost of water, which presently amounts to $300,000 to $400,000 of operational cost per year. The second is the need to increase present recharge levels to satisfy increased pumping demands, especially during colder periods in late December. The only alternative to increasing recharge rates is to increase storage volume, an option that has been discounted as non-viable for environmental and permitting reasons.

Since snow production requirements are roughly split between California and Nevada sides in the expanded system (714 acre-feet in California vs. 759 acre-feet in Nevada), the ideal supply arrangement would provide equal flows on each side. If anything, a slightly greater supply should be developed on the California side since storage of the California Dam reservoir is substantially lower. However, groundwater resources should be developed as they become available, regardless of location since having the water is more important than having it in a certain location.

The build-out system will require an additional 2,500 gpm of recharge. This will likely be supplied by a combination of ground water supplied by new wells and purchased utility water. An obvious alternative

resource is the immense capacity of Lake Tahoe. However, water withdrawal from Lake Tahoe has significant permitting issues that need to be weighed against cost of developing groundwater and/or the ongoing cost of purchasing water from the utilities. In order to satisfy additional recharge needs, on-mountain groundwater wells should be developed near each existing reservoir or pumphouse (Lower California, California Dam and East Peak Lake).

2. Pumping System

Both the capacity and pressure of the existing pumping system will need to be increased to provide expanded coverage and accommodate fan/external mix air/water technology. The existing pumping system provides the following operating pressures:

- **Lower California**

  Pumps generate 1,100 pounds per square inch (psi) discharge pressure at design (including 60 psi of suction pressure from water utility). This generates 250 psi pressure at the California Dam Pumphouse, allowing for 50 psi of friction loss. No change in operating pressures are required.

- **California Dam**

  Pumps generate 805 discharge pressure at design. This generates 239 psi at the top of the Sky Express lift, allowing for 25 psi of friction loss. Higher friction rates are likely given existing pipe sizing, but this can be resolved with pipe replacement. This pressure is a little low at the summit, but modifications are not recommended since only a small portion of the terrain is impacted by restrictions.

- **Stagecoach**

  Pumps generate 606 psi discharge pressure at design. This generates roughly 200 psi at the East Peak Reservoir assuming 50 psi of friction loss. However, the pipeline runs over a saddle at 9,000 foot elevation which drops pressure at the high point to 15 psi if a 50 psi friction allowance is assumed. This is a high friction allowance, but it illustrates why these pumps are used primarily for transferring water as opposed to snowmaking capacity.
  Stagecoach pumps are also run at higher pressures/lower flows to match downhill pressures generated by the East Peak Pumphouse This is not an operating mode that is recommended for future expansion

- **East Peak**

  Pumps operate at 814 psi which generates 244 psi at the summit of the Dipper Express, assuming 50 psi of friction loss. This pressure is acceptable and can be increased by lowering friction rates with piping upgrades.

Recommendations for each pump station are as follows:

- **Lower California**

Capacity of Lower California will depend on utility supply rates and any potential groundwater development. This pumphouse is marginal condition, has poor maintenance characteristics (low head room, poor access) and is not in an ideal location from a resort and guest service standpoint. Therefore, a new pumphouse is recommended (location to be determined) with capability to add two more vertical pumps, bringing total capacity to 2,000 gpm.

- **California Dam**

Existing pumps provide only 1,500 gpm of capacity for a large expanse of acreage. This capacity needs to be upgraded to roughly 2,500 to 3,000 gpm to promote efficient operation and the ability to cover upper terrain quickly when cold temperatures permit. There are two options to investigate:

1. Install 4 new vertical turbines at 400 horsepower (hp)/650 gpm each (or 500 hp/800 gpm each. These units will fit in the existing pit area, though accommodation of the existing low-pressure pump for lower mountain operation must be made.

2. Retain the existing three 250 hp units and add two or three 400 hp/650 gpm pumps in an expanded wet well.

This pumphouse pressure control has recently been converted to utilize energy efficient variable frequency drive (vfd). This addition has improved both the pressure control and effectiveness of the existing pumps.

- **Stagecoach**

The Stagecoach pumphouse has been recently converted to vfd control and remote operation. If increased water recharge volumes can be expected from either KGID or a new groundwater resource in this region, there are two options to consider:

1. Install a transfer pipeline on Way Home to allow water to be pumped from Stagecoach to East Peak reservoir without flowing over the saddle (during non-recharge periods this line could be supplied with increased pressure for snowmaking coverage on Nevada Trail). This would also supply snowmaking operations on the lower mountain (Upper Edgewood Bowl summit and below). The result would be the ability to pump 1,300 gpm per pump using 400 hp motors.

2. Increase the flow capacity at Stagecoach at the existing pressure regime. This would require new 400 hp units to match the existing 800 hp pumps.

Valving should be installed on hill piping as required to allow the Stagecoach pumps to provide snowmaking pressures directly on the lower areas of the Nevada terrain and eliminate the present

practice of running these pumps at low flow/high pressure. This provides the dual benefit of more efficient pump operation and enhanced safety for operators (using East Peak pumps generates approximately 1,350 psi at the base of the Boulder lift—this is not recommended based on coupling and hose pressure considerations).

- **East Peak**

East Peak Pumphouse is the newest facility and has a capacity of 2,800 gpm. No modification is necessary for these pumps except for the recommended integration of a vfd for pressure control. However, low-pressure pumps are recommended for lower mountain operations to decrease operating pressures and increase efficiencies. These pumps should develop 300 psi at the top of the North Bowl lift, resulting in a discharge pressure requirement of 500 psi. This will require two 300 hp pumps, each with 800 gpm capacity (alternative: one 400 hp pump to provide 1,000 gpm). Dropping the pressure for the lower mountain will require a different strategy for covering the top of the Olympic Chair (9,500 feet). This can be achieved by running a separate feed line to the top of North Bowl or installing piping on Ponderosa or Bonanza to feed the top of Olympic.

3. Compressed Air System

No modifications are recommended on the compressed air system at this time. However, temperature measurements should be collected to determine the effectiveness of:

- Spray cooling of existing compressor cooling water. If the compressor cooling water is warming up the reservoir temperatures, cooling towers should be integrated prior to dumping the water into the reservoir.

- Effectiveness of the tube coolers are installed at the California Dam compressor location. If these coolers do not achieve adequate cooling/moisture separation, they should be replaced with either radiator style coolers or a cooling tower/shell and tube combination.

4. Piping

The existing piping at Heavenly Mountain Resort is undersized and will need a significant amount of upgrading to achieve the desired capacities. Piping modification recommendations are included in the Snowmaking Master Plan.

5. Process Control

The large expanse of terrain covered with snowmaking, coupled with a relatively complicated water supply configuration (two reservoirs, four pumphouses) makes snowmaking operations at Heavenly complex. This situation is exacerbated by the lack of remote operating capability at each pump and

compressor location. It is critical that the present process control system at Heavenly be upgraded to provide the following functionality:

- Remote operating capacity for each location. This is most critical for pumphouses that do not need to be manned on a permanent basis (specifically Stagecoach, California Dam, and Lower California). An individual snowmaking operations supervisor should be able to control all equipment from a central location (or locations)

- Monitoring and logging of system flows, including the multiple flow monitoring sites required for environmental compliance (indicating flows entering and leaving California/Nevada and In-Basin/Out-of-Basin).

- Effective reporting and logging of temperatures and performance values that will provide for effective crew management as well as evaluation of the true impact of technology improvements.

A new process control system was installed in 2003 to accomplish these tasks. This process control system will improve the operating efficiency of the system and decrease the complexity of operations.

6. Water Cooling

Water cooling provides an efficiency benefit for all types of snowguns due to improved nucleation efficiency (sources indicate 15-30% benefit). There is an existing water cooler at the STPUD intake, however capacity of this cooler is limited. As water flows increase, additional cooling capacity will be required at this location. In addition, water from KGID (which is not presently cooled) should be provided with cooling equipments, as will any newly developed well sites. Specific equipment recommendations on water cooling will depend on the location of new well sources.

7. Automation

Automation will play a critical role in providing the system at Heavenly with the ability to efficiently react to temperature conditions over a wide area. However, the prevalence of surface piping reduces the potential benefits of automation since lines must be charged and drained after usage. While automation alternatives in snowmaking change each year, the following are recommendations for implementation within the next one to three years:

- All pump stations and compressor plants should be automated to the extent that one supervisor can efficiently operate each plant. This was described in the process control section, but can easily include the automatic sequencing of pumps to maintain pressures; thereby simplifying the task of the control supervisor.

- Fan guns should be supplied with automatic performance capability for locations that are frequently used in areas where access is difficult, dangerous, or time consuming.

- Tower guns should be installed on spur lines where appropriate so that operating a single set of valves will turn an entire string of guns on, similar to typical operations on a golf course irrigation system. This technique is limited to areas where wind conditions permit the operation of multiple guns consistently[5], but offers a very cost-effective manner of automating large areas.

Automation of individual internal mix air/water guns is possible, but the capital cost to implement this type of automation is high, as are the typical maintenance requirements. For this reason this type of automation is not recommended at the present time.

[5] Any individual gun can be turned off manually, but this requires a manual operation which somewhat decreases the utility of the system.

6 Operations Plan

6 OPERATIONS PLAN

6.1 FACILITY OPERATIONS

Table 6-1 displays information concerning the operation of the Heavenly Mountain Resort facilities. The table breaks down the facilities into the following categories: gondola operations, lodge buildings, ski patrol buildings, maintenance buildings, snowmaking buildings, summer uses, parking lots, employee housing, and offsite facilities. Information including operation times, hours of operation in winter and summer use, and floor area square footage is displayed for each facility.

6.2 TRANSPORTATION, TRANSIT SERVICES, AND PARKING

Transportation of guests, employees and goods and services is a key component of Heavenly's operations. Safe, reliable and effective transportation systems are necessary for Heavenly to be successful. Heavenly maintains a dedicated staff of seasonal employees at al three base lodgers who operate and manage base area parking, snow removal, transit and traffic operations. Additionally, guest service staff are located at the Heavenly Village Transit Center where the shuttle buses arrive and depart to assist guests and employees with the shuttle system. At the other lodges, guest service and security employees are available to help guests and employees with individual problems.

Heavenly's on-mountain road system is an important component of the Resort. It provides the primary transportation system for summer operations, project implementation and watershed restoration and protection activities. The MP (96) Cumulative Watershed Effects Soil Erosion Reduction Program (CWE Program) contains a comprehensive plan and schedule to address the road system. Under the plan, system roads that will remain in use are retrofitted with water quality protection measures (BMPs). Those roads deemed no longer necessary or not desirable to maintain are decommissioned and no longer used. Annual maintenance of the roads occurs on a regular basis following BMP installation. Following adoption of the MPA (07), a comprehensive road use and maintenance plan will be prepared to update and maintain the road system needs, identify additional restoration opportunities and water quality protection measures.

Heavenly maintains winter seasonal employees for parking lot and shuttle bus guest services. There are twenty-one employees for parking control at the California Base Lodge and the Base of the Gondola. There are also twenty-one employees for parking control at the Nevada Base lodges. Traffic entering and exiting the ski resort base areas and parking lots are controlled and monitored daily. The monitoring consists of assisting guests into designated parking areas and maintaining traffic flow.

During peak times (weekends and holiday periods) employees park off-site on at the Ski Run and the Kingsbury satellite parking areas lots located along Ski Run Boulevard and Kingsbury. Employees are shuttled to the base areas using transit vehicles. At the Base of the Gondola, employees park at the rear of the Town Center site. Offsite parking at the California Base Area shall be removed prior to operation of the gondola. Overflow parking for the Nevada Base areas is located on South Benjamin and Quaking Aspen road. Local law enforcement agencies are retained by Heavenly Mountain Resort during peak holidays and certain snow days to provide traffic control at key local intersections.

Table 6-1

Heavenly Operations Inventory - 2003/2004

Ski Facilities	Time of Year	Winter Hours of Day		Summer Hours of Day		Use
Lodge Buildings						
California Base Lodge						
Rental Shop	Ski Season	8:00	6:00	N/A		Accessory
Retail Shop	Ski Season	8:00	6:00	N/A		Accessory
Locker	Ski Season	8:00	6:00	N/A		Accessory
Ticket Sales	Ski Season	8:00	3:30	N/A		Accessory
Restrooms	Ski Season	8:00	6:00	N/A		Accessory
California Bar	Ski Season	10:00	6:00	N/A		Accessory
Training Room	Ski Season	7:30	6:00	N/A		Accessory
Cafeteria	Ski Season	8:00	4:00	N/A		Accessory
Employee Locker-room	Ski Season	7:30	6:00	N/A		Accessory
Day Care Center	Ski Season	8:30	4:00	N/A		Accessory
Guest Services	Ski Season	8:00	6:00	N/A		Accessory
Human Resources Office	Year Round	7:30	5:00	8:00	5:00	Accessory
Mountain Operations	Year Round	7:00	6:00	7:00	4:00	Accessory
Ski School Operations	Ski Season	7:00	6:00	N/A		Accessory
Lift Maintenance Operations	Year Round	7:00	6:00	7:30	4:00	Accessory
Food & Beverage Operations	Ski Season	7:00	6:00	N/A		Accessory
Burton Demo Center	Ski Season	8:00	6:00	N/A		Accessory
Top of the Tram						
Restaurant	Year Round	9:00	5:00	10:00	11:00	Commercial
Cafeteria	Ski Season	9:00	5:00	10:00	11:00	Accessory
Bar	Year Round	10:00	5:00	10:00	11:00	Accessory
Restrooms	Year Round	9:00	5:00	10:00	11:00	Accessory
Base of Tram						
Tram Drive Machinery	Year Round	7:00	10:00	8:00	2:00	Accessory
First Aid/Ski Patrol	Ski Season	7:30	6:00	N/A		Accessory
Tram Tickets	Ski Season	8:00	4:00	9:00	11:00	Accessory
Sky Meadows Lodge						
Food Service/Preparation	Ski Season	9:00	4:00	N/A		Accessory
Deck	Ski Season	9:00	4:00	N/A		Accessory
Sky Meadows Restrooms	Ski Season	8:00	4:00	N/A		Accessory
Stagecoach Base Lodge						
Slice of Heaven	Ski Season	8:00	6:00	N/A		Accessory
Bar	Ski Season	10:00	6:00	N/A		Accessory
Restrooms	Ski Season	7:30	6:00	N/A		Accessory
Retail	Ski Season	8:00	6:00	N/A		Accessory
Ski Rental	Ski Season	8:00	6:00	N/A		Accessory
Skier Lockers	Ski Season	7:30	6:00	N/A		Accessory
Central Reservations	Year Round	8:00	5:00	8:00	5:00	Accessory
Food Storage	Ski Season	6:00	6:00	N/A		Accessory
Ticket Sales	Ski Season	8:00	3:30	N/A		Accessory
Boulder Base Lodge						
Black Diamond Cantina	Ski Season	8:00	6:00	N/A		Accessory
Bar	Ski Season	10:00	6:00	N/A		Accessory
Restrooms	Ski Season	7:30	6:00	N/A		Accessory
Skier Lockers	Ski Season	7:30	6:00	N/A		Accessory
Retail	Ski Season	8:00	6:00	N/A		Accessory
Ski Rental	Ski Season	8:00	6:00	N/A		Accessory
Guest Services	Ski Season	8:00	6:00	N/A		Accessory
Boulder Lift Tickets	Ski Season	8:00	3:00	N/A		Accessory
Boulder Ski School	Ski Season	8:00	4:00	N/A		Accessory
Ski School Tickets	Ski Season	8:00	4:00	N/A		Accessory
Boulder Employee Locker Room	Ski Season	7:30	6:00	N/A		Accessory
Boulder Employee Locker Room	Ski Season	7:30	6:00	N/A		Accessory
East Peak Lodge						
Cafeteria	Ski Season	8:30	4:00	N/A		Accessory
Bar	Ski Season	9:00	5:00	N/A		Accessory
Restrooms	Ski Season	9:00	5:00	N/A		Accessory
	Ski Season	10:30	4:00	N/A		Accessory
Asian Station	Ski Season	10:30	4:00	N/A		Accessory
Snow Beach	Ski Season	10:00	4:00	N/A		Accessory

Table 6-1 (cont'd)

Heavenly Operations Inventory - 2003/2004

Ski Facilities	Time of Year	Winter Hours of Day		Summer Hours of Day		Use
Gondola Facilities						
Adventure Peak Grill	Year Round	8:30	5:00	10:00	6:00	Commercial
Café Blue	Year Round	9:00	4:00	9:00	8:00	Commercial
Base Station	Year Round	8:00	8:00	8:00	6:00	Commercial
Ski School	Ski Season	8:00	8:00	N/A		Commercial
Mid-Station	Year Round	10:00	8:30	8:30	4:30	Commercial
Top Station	Year Round	10:00	8:30	8:30	4:30	Commercial
Ski School	Ski Season	8:00	4:30	N/A		Accessory
Ski Patrol Buildings						
Sky Ski Patrol Building	Ski Season	7:30	6:00	N/A		Accessory
Face Ski Patrol Building	Ski Season	7:30	6:00	N/A		Accessory
East Peak Ski Patrol Building	Ski Season	7:30	6:00	N/A		Accessory
Boulder Ski Patrol Building	Ski Season	7:30	6:00	N/A		Accessory
Dipper Ski Patrol Building	Ski Season	7:30	6:00	N/A		Accessory
Maintenance Buildings						
Lower California Maintenance Shop						
Vehicle Maintenance	Year Round	7:00	5:00	7:00	3:30	Accessory
Lift Maintenance	Year Round	7:00	5:00	7:00	3:30	Accessory
Electrical Maintenance	Year Round	7:00	5:00	7:00	3:30	Accessory
Fuel Storage	Year Round	7:00	5:00	7:00	3:30	Accessory
Shipping & Receiving	Year Round	7:00	5:00	7:00	3:30	Accessory
Upper California Maintenance Shop						
Vehicle Maintenance	Year Round	24/hrs/day		7:00	4:40	Accessory
Fuel Storage	Year Round	24/hrs/day		7:00	4:40	Accessory
East Peak Fuel Storage	Year Round	24/hrs/day		7:00	4:40	Accessory
Lift Repair - West Bowl	Year Round	7:00	6:00	7:00	4:40	Accessory
Snowmaking Buildings						
California Base Snowmaking Building	Year Round	24/hrs/day		7:00	3:30	Accessory
California Dam Snowmaking	Year Round	24/hrs/day		7:00	3:30	Accessory
Stagecoach Pumphouse	Year Round	24/hrs/day		7:00	3:30	Accessory
East Peak Compressor Building & Pumphouse	Year Round	24/hrs/day		7:00	3:30	Accessory
Summer Uses						
Hiking Trails	Summer Season	N/A		10:00	6:00	Accessory
Employee Housing						
Keller & Pioneer (24 units)	Year Round	24/hrs/day		24/hrs/day		Residential (SLT)
Offsite Facilities						
Food & Beverage Warehouse	Year Round	7:00	12:00	8:00	4:00	Commercial
Bulding Maintenance	Year Round	7:00	3:30	7:00	3:30	Commercial
Sign Shop	Year Round	7:00	3:30	7:00	3:30	Commercial
Retail Warehouse	Year Round	7:00	5:00	8:00	5:00	Commercial
Parking Lots						
California Parking Lot	Year Round	7:00	6:00	6:00	6:00	Accessory
Boulder Parking Lot	Year Round	7:00	6:00	8:00	5:00	Accessory
Stagecoach Parking Lot	Year Round	7:00	6:00	8:00	5:00	Accessory
Kingsbury Grade Parking Lot	Year Round	7:00	6:00	8:00	5:00	Accessory
Heavenly Village	Year Round	7:00	10:00	8:00	5:00	Commercial
California Offsite Parking Lot	Ski Season	7:00	10:00	N/A		Special Use Permit (City)
Stagecoach Offsite Parking Lot	Ski Season	7:00	10:00	N/A		S.U.P. (Tahoe Village)
Boulder Offsite Parking Lot	Ski Season	7:00	10:00	N/A		S.U.P. (KGID)

Heavenly's skier shuttle bus service provides free transit service for all guests and employees between all lodges and key lodging properties in South Lake Tahoe and Stateline. Heavenly's system is a key element of Blue Go, South Shore's coordinated transit system. Heavenly operates the system throughout the entire ski season. Levels of service (i.e. headways and routes) are established to respond to demand. Heavenly contracts the operation and maintenance of the transit fleet to Area Transit Management (ATM). Heavenly has developed a transit vehicle replacement plan in order to maintain the reliability of the transit vehicle fleet and take advantage of changes in technology where possible. Additionally, Heavenly implements TRPA's Employer Trip Reduction Ordinance. This includes dedicated employee shuttles and subsidized transit rides for employees.

6.3 CUMULATIVE WATERSHED EFFECTS SOIL EROSION REDUCTION PROGRAM

Regulatory Authority

The 1997 Heavenly CWE Mitigation Restoration Program is the mechanism which implements the Soil Erosion Reduction measure contained in the adopted Master Plan. Implementation of the program is a condition of both Master Plan adoption and implementation which is required by the Tahoe Regional Planning Agency for all in-region lands, and by the USDA Forest Service for all national forest lands. Implementation of the CWE program is further defined in the Forest Service Special Use Term permit for the resort. In addition, the State of California Water Resources Control Board, Lahontan Region, requires the implementation of the CWE Restoration Program through its 2003 updated Waster Discharge Requirements (WDRs) for the California portion of the resort.

Underlying the program is a mutual understanding among all parties that the role of the Forest Service and other agencies is to allow planned development to proceed under the terms of the Special Use Term Permit and Master Plan while providing for environmental protection and public safety, and that Heavenly, as the Permittee, in the execution of its business plan, will comply with all applicable laws, the Special Use Term Permit, WDRs, and USDA Forest Service policies spelled out in plans and permits. The Forest Service provides ongoing oversight both in the field and with the agreements and reports in terms of monitoring and reporting.

Heavenly Ski Area is a bi-state resort, which drains into two different watersheds: the Lake Tahoe Basin/Truckee River drainage and the Carson Valley River watershed. Prevention of water quality degradation through careful planning, design, use, and maintenance of Best Management Practices will receive equal emphasis in both drainages, on private as well as public lands. However, due to the heightened sensitivity concerning water quality issues in the Lake Tahoe Basin, priorities for restoration and revegetation will usually be directed to the Tahoe Basin watershed first.

Program Implementation

The 1997 CWE Restoration Program followed the adoption of the Master Plan. It identified road and ski run restoration needs by year and by watershed. The program priorities were coordinated with the Master Plan implementation phasing schedule in order to arrive at an optimal sequence of construction and restoration. The Program resulted in attaining the Threshold of Concern (TOC) for each watershed through the application of water quality Best Management Practices by the year 2000 for ski runs and by 2003 for summer maintenance and other roads. This program achieved compliance with the Master Plan mitigation measure which addressed soil erosion reduction (mitigation measure 7.5-1). Beyond achieving the TOC for each watershed (where the ERA values were greater than the TOC), Heavenly committed to applying water quality BMPs for all ski runs, roads and developed sites such as lodges and lift stations terminals.

Early each year, Heavenly staff and Forest Service watershed specialists meet to develop the annual CWE project work list. This exercise has been based on the 1997 Programs Schedule discussed above. Specific restoration projects from the schedule are identified and a program of work is drafted. The list is then transmitted to the Forest Service Winter Sports Permit Administrator and Lahontan Board staff for concurrence. Heavenly crews undertake the projects and prepare mid-season and end of season project accomplishment reports. The entire list of projects on the 1997 list is nearly complete. Now that the list of remedial projects is nearly complete, future annual work programs will focus on maintenance and construction related BMPs. Forest Service specialists monitor the status of the projects in the field and provide technical assistance as needed.

Monitoring & Reporting

Beginning in 1995, Heavenly contracted with the Forest Service through a Collection Agreement to perform annual monitoring and reporting tasks as outlined in the Section 7.6 of the 1996 Master Plan (Heavenly Monitoring Program). These reports have been prepared in accordance with the Monitoring & Reporting Requirements contained in the 1996 Master Plan Mitigation and Monitoring element measure 7.5-2, and with the Lahontan Waste Discharge Requirements. As of February 15, 2005, a revised Collection Agreement became effective wherein the Forest Service will provide oversight of the data collection and reporting. At that time, Heavenly will contract with an independent, third-party to prepare the monitoring reports on an ongoing basis.

On January 30, 2004, the Forest Service issued a Comprehensive Monitoring Report for Water Years 1991-2003. The report represents thirteen years of monitoring data collection and interpretation at Heavenly Mountain Resort (hereafter Heavenly). It is composed of six chapters: this introduction and five chapters addressing the major components of the Monitoring Program Plan, i.e., water quality monitoring, effective soil cover monitoring, BMP effectiveness monitoring, riparian (channel) condition monitoring, and a comprehensive condition and trend evaluation of the four previous components.

The Monitoring Program was developed by the US Forest Service as part of the Heavenly Master Plan Draft Environmental Impact Statement (USDA FS, 1996a) and later incorporated into the Heavenly Mountain Resort Master Plan as Chapter 7 (see Heavenly, 1996). The Forest Service is designated the lead, implementing, and monitoring agency at Heavenly and operates in this capacity through a special use permit.

The primary purpose of this report is to present a condition and trend status for all ski runs, creeks, roads, and structures at Heavenly. Secondarily, the information in this report is intended to provide direction to Heavenly and Forest Service management on monitoring and restoration priorities at Heavenly. In addition, the report lists all watershed restoration projects completed from 1992-2003.

Conditions and Trend Summary

Table 6-2 presents the condition and trend summaries for each of the ten subwatersheds, based on the five evaluation criteria outlined under the methods section. Trend statements are based on present condition compared to conditions assessed during the CWE fieldwork of 1991.

CA-1 (Heavenly Valley Creek): This is the largest of the ten subwatersheds and as a result, also has the most developed acreage. This watershed also receives the most intensive level of monitoring. The overall condition of the watershed is rated as "good" and the "trend" is much improved.

CA-4 (Ephemeral Drainages off Roundabout Road): A portion of Roundabout Road and all of Roundabout ski run (which was cut in 1992) are the only developed areas in this watershed. Both of these features have received BMP retrofits. Effective soil cover on Roundabout ski run is currently 61%. Until a BMP implementation and effectiveness evaluation is conducted, the result of installation of road BMPs is unknown. Based on the fact that CWE projects have been implemented on schedule, and the percent of effective soil cover, the overall condition of this watershed is rated as "good", and the "trend" is improved.

CA-6 (California Face; Bijou and Wildwood Creeks): The ski run, road, and ski lifts in this watershed have all received BMP retrofits. There has also been installation of some BMPs in the California Parking Lot in 1992 and 1993. Water quality results indicate that attainment of water quality effluent standards, while somewhat improved, are still frequently exceeding state standards. Further implementation of parking lot BMPs, along with BMPs for associated structures, is still required. The overall condition of this watershed is currently rated "fair", and the trend is "improved".

CA-7 (Gondola Line): No developments existed in this watershed within the ski area boundary, until the Gondola system was installed in 2000. Total watershed acreage as reported in the Gondola EA is 284 acres. Estimated developed acreage, as calculated using acres reported in Appendix G of the Gondola EA, is 3.21 acres. Because BMPs are installed as part of project construction, the watershed condition is rated as "good" with a "stable" trend.

NV-1 (Mott Creek): All BMPs retrofits have been implemented in this watershed. Overall condition is rated as "good" and the trend is "improved."

NV-2+5, NV-5, NV-4 (Middle Fork, South Fork, and South Tributary of Daggett Creek): All BMPs retrofits have been implemented in this watershed, except for structure BMPs. This watershed is rated as "good" and the trend is "improved".

Table 6-2

Overall Watershed Condition and Trend Summary

Watersheds	Water Quality Condition	Channel Condition	Soil Cover	BMP Effectiveness	CWE Implementation	Overall Watershed Condition	Overall Watershed Trend
Heavenly Valley Creek (CA-1)	Good	Good	Excellent	N/A	Good	Good	Much Improved
Upper Cold Creek (CA-4)	N/A	N/A	Good	N/A	Good	Good	Improved
Bijou Wildwood (CA-6)	Poor	N/A	Excellent	N/A	Good	Fair	Improved
Gondola Line (CA-7)	N/A	N/A	N/A	N/A	Good	Good	Stable
Mott Creek (NV-1)	N/A	Good	Excellent	N/A	Good	Good	Improved
Daggett Creek (NV-2+5,4,5)	N/A	Good	Excellent	N/A	Good	Good	Improved
Edgewood Creek (NV-3)	Poor	Fair/poor	Excellent	N/A	Good	Fair	Stable
Corser Creek (NV-4a)	N/A	Good	Excellent	N/A	Good	Good	Improved

6.4 SNOWMAKING OPERATIONS PLAN

Heavenly's snowmaking system is an extremely important aspect of the overall resort operations. The snowmaking system is large and complex. It includes several facilities, water from multiple sources, pipelines that are both above ground and below ground, remote valve stations, a mix of snowmaking gun types and a range of climatic conditions over the resort. Operations are conducted based on Heavenly's Snowmaking Manual which is updated from time to time. The Snowmaking Manual contains training and safety procedures, operating procedures, chain of command, communication and reporting requirements. Overall, the snowmaking operations focus on creating the greatest amount of the highest quality man-made snow possible for the least cost.

Snowmaking is conducted based on a Snowmaking Priorities Plan. This plan establishes the operational priorities for early season snowmaking and grooming under different natural snow conditions. It is intended to provide safe and reliable skiable snow surfaces for a variety of ability levels and underlying ground conditions. The Snowmaking and Grooming departments work together to implement the plan. The Snowmaking Priorities Plan generally begins with the opening of the season and can last until natural snow provides full trail coverage.

The Plan is adjusted on an ongoing basis as the season begins and conditions develop. In general, the Snow Plan calls for early season access through the gondola. Trails in the Von Schmidt's Flats area, Tamarack, Dipper and Comet Express pods are covered first. Following that, trails in the Sky and Canyon Express pods are covered following the execution of the initial opening plan. From that point, the snowmaking operations work down the hill on both sides on the resort, including Round-A-Bout trail. An important goal of the Snowmaking Priorities Plan is to provide Snowmaking operations focus on providing top to bottom skiing as the three consistent with the timing of the opening of the base lodges main lodges opening California and Nevada. As the trails are covered, snowmaking operations focus on creating terrain features and the half-pipe.

6.5 CONSERVATION & RECYCLING PROGRAM

Heavenly operates a conservation and recycling program the goals of which are to reduce the volume of solid waste produced and promote the purchase and use of recycled materials used at the resort. The program has the following elements:

Source Separation

Heavenly provides source separation for all glass, aluminum, and plastics, which are generated onsite. At this time, recycling includes aluminum, glass and plastic beverage containers. Recycle receptacles are provided for guests and employees to maximize the opportunities for recycling. Office paper and cardboard used in packaging or and shipping is collected at several key sites around the resort and recycled at the South Tahoe Recycle Center. Collection and pick up of materials to be recycled is coordinated with South Tahoe Refuse.

In the near future, Heavenly intends to utilize recycled transmission oil and antifreeze in its rubber tire vehicle fleet as the products become available. Biodiesel fuel for all diesel-powered equipment will be used on a trial basis with the ultimate goal of converting the entire fleet.

Use of Recycled Products

As a part of Vail Resorts, Heavenly purchases many products and materials which contain recycled components or materials. This includes such items as paper towels and napkins. In addition, several Food and Beverage materials have been switched from disposable to reusable. This includes such items as paper towels and napkins. Cooking oils are recycled and reused with the assistance of an outside contractor. Food baskets for many menu items are reused and washed. This replaces previous disposable foam plates. Glassware is replacing disposable cups in most of the indoor bars. Food and Beverage cups and mugs are reused.

6.6 NIGHT SKIING

Night skiing and riding will be offered on World Cup run using World Cup lift. The lighting will be the existing overhead lights that are used now for special events. Night skiing will be offered up to seven nights per week, conditions permitting, from mid-December through April. Hours of operation will be from 4:00 p.m. through 10:00 p.m. The existing services at the California Main Lodge will be used. Low-level lighting for the on-snow traverse between the Main Lodge and World Cup run will be needed in order for skiers to move back and forth safely between the two facilities. A specific area of the parking lot will may require new lighting for user safety and security. This area will be located nearest the existing retaining wall at the upper parking lot level next to the existing tram building. It is expected that lighting will be provided for up to three hundred cars. The entire lot will not be lit. All new lighting sources for the on-snow traffic and parking area will comply with the applicable provisions of Chapter 30 of the TRPA Code.

7 Mitigation & Monitoring Plan

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7 MITIGATION & MONITORING PLAN

7.1 BACKGROUND

The following mitigation and monitoring plan (MMP) is an update of the MMP from the MP 96, as adopted by the Forest Service, TRPA, and El Dorado County in 1996. Based upon measures that have been completed, measures that are no longer needed, and new measures that are required to reduce potential effects of the MPA 07, the MMP has been revised. The Table below summarizes the changes that are proposed to the MP 96 MMP. Detailed descriptions of each mitigation measure are included in Sections 7.3 through 7.6.

7.2 COMPLIANCE WITH EXISTING PROGRAMS (REGULATORY COMPLIANCE)

All applicable Regional, City, County, State, and Federal codes and regulations shall be complied with, including but not limited to:

Tahoe Regional Planning Agency

- Environmental Threshold Carrying Capacities
- Regional Plan for the Lake Tahoe Basin
- Code of Ordinances
- Plan Area Statements

Lahontan Regional Water Quality Control Board

- Updated Waste Discharge Requirements
- Lahontan Basin Plan

El Dorado County

- General Plan
- Zoning Ordinance
- Air Pollution Control District
- Uniform Building Code
- Environmental Management Department (food safety and hazardous materials)

State of California

- Air Resources Board
- Cal OSHA - Worker Safety Rules and Standards

- Department of Industrial Relations
- Division of Occupational Safety and Health, Elevator, Lift, and Ride

State of Nevada

- Nevada Division of Environmental Protection (fuel storage and water quality)
- Nevada Division of Environmental Health (water)

Forest Service

- Cumulative Watershed Effects
- LTBMU Forest Plan
- Title IV
- Heavenly Special Use Term Permit
- National Historic Preservation Act (Section 106 compliance)

Douglas County

- Master Plan & Development Code
- Zoning Ordinance
- Uniform Building Code

U.S. Army Corps of Engineers

- Clean Water Act, Section 404

City of South Lake Tahoe

- General Plan
- Zoning Ordinance
- Uniform Building Code

7.3 PLANNING MEASURES

7.3-1 Obtain Summer Day Use PAOT Allocations

Description

MP 96 & MPA 07

Prior to the construction of new summer day use facilities, Heavenly shall apply for and obtain TRPA approval of a summer day use PAOT allocation equal to the number of PAOTs calculated to use new summer day use areas at the Heavenly Mountain Resort. Should Heavenly be denied the summer day use PAOTs from the TRPA, the facility shall not be constructed or operated.

Impacts Mitigated

2006 EIR/EIR/EIS–REC-2: Will the Project conflict with an established recreational use in the area?

96 Final EIR/EIS/EIS: Addition of summer day uses may require an allocation of summer day use PAOTs.

Mitigation Level Compliance with TRPA PAS summer PAOT allocations.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing

Start: Project review.

Complete: Upon approval of a project that requires summer PAOT allocations.

2006 Status To be completed for each new summer use that requires summer day use PAOTs.

Milestone/Product 250 Summer Day Use PAOTs were allocated in 2003 by TRPA to gondola summer activities. Additional Summer Day Use PAOTs will be requested as activities that require PAOTs expand.

7.3-2 TRPA Mitigation Monitoring Activities

Description

MP 96 and MPA 07

Upon approval of the Heavenly Mountain Resort MP 96, TRPA and Heavenly shall enter into a mitigation monitoring agreement. The agreement shall require Heavenly to provide adequate funding for TRPA staff to monitor compliance with mitigation programs, many of which must begin upon approval of the MP 96. Many mitigation measures must be

	implemented upon approval of the MP 96, and are therefore not related to any individual project permits or existing compliance programs at TRPA. This mitigation monitoring agreement would ensure TRPA has adequate staff resources to effectively monitor the implementation of MP 96 programs. Specific development projects may have additional compliance requirements not included in this monitoring program which are not covered by the TRPA permit application fee, and which Heavenly may be required to fund.
Impacts Mitigated	96 Final EIR/EIS/EIS: Monitoring of all impacts which must be mitigated by measures provided at MP 96 adoption.
Mitigation Level	Compliance with Heavenly Mountain Resort MP 96 mitigation measure requirements.
Lead Agency	TRPA
Implementing Agency	TRPA
Monitoring Agency	TRPA
Timing	**Start:** Upon approval of the MP 96. **Complete:** Throughout MP 96 implementation.
2006 Status	Ongoing
Milestone/Product	Status Report of all mitigation and monitoring activities filed annually with TRPA and Forest Service as part of project approvals.

7.3-3 (SCENIC-4) Design and Site the Proposed Gondola Mid Station Restaurant to Minimize Visibility From Off-Site Views

Description

MPA 07

Prior to permitting of construction, the following mitigation measures should be taken:

1. Prepare field simulations of the height and mass of the proposed structure. Such simulations may include story poles, balloons, or other techniques that effectively demonstrate the extent of visibility from off-site views.
2. Determine visibility of proposed structure from viewpoints identified in the MPA 07 Draft EIR/EIS/EIS.
3. If simulations demonstrate that the building may extend above the adjacent ridge line or tree line as viewed from off-site viewpoints, changes to the building height, roof pitches, massing, siting, proposed grading or design would be made

to reduce the buildings visibility.

4. Confirm effectiveness of revised siting and design measures with revised simulations.

Impacts Mitigated	06 EIR/EIS/EIS-SCENIC-4: The Gondola Mid-Station Restaurant Would be Visible From Off-Site Viewpoints – Future MPA 07 Phase	
Mitigation Level	Reduced visual effects of Gondola Mid Station Restaurant	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Prior to project construction.
	Complete:	Prior to project construction.
2006 Status	Incomplete	

7.3-4 (SCENIC-5) Design and Site the Proposed Angel's Roost Communications Site to Minimize Visibility From Off-Site Views

Description	MPA 07 Towers and antennae shall be redesigned to appear like natural tree snags. Applicant shall submit design plans, including color and material samples, that demonstrate that the proposed antennae and support apparatus would blend with the forest background and be non-reflective. Materials such as core ten steel which are non-reflective should be used. All major trees outside the footprint of the facility shall be protected during construction and retained on site. A retention and revegetation plan for disturbed or cleared areas shall be submitted as part of the permit application.	
Impacts Mitigated	06 EIR/EIS/EIS-SCENIC-5: The Angel's Roost Communications Site Would be Visible From Off-Site Viewpoints – Future MPA 07 Phase	
Mitigation Level	Reduced visual effects of Angel's Roost Communications Site	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Prior to project construction.

	Complete:	Prior to project construction.
2006 Status	Incomplete	

7.3-5 (SCENIC-6) Reduce Visibility of the Skiways 1 and 2 Trails Through Reduction in Cleared Areas and Retention of Vegetation

Description	MPA 07 Skiways 2 (I5) should be realigned and gladed with 25 percent cleared area and 75 percent vegetation retention. Skyway 1 (I4) should be gladed with 50 percent retention of vegetation. Total width of the gladed ski trails can be up to 130 feet.	
Impacts Mitigated	06 EIR/EIS/EIS-SCENIC-6: Proposed New In-Basin Ski Trails and Ski Trail Widening Would Create New Forest Openings – Phase I and Future MPA 07 Phases	
Mitigation Level	Reduced visual effects of proposed new in-basin ski trails I4 and I5	
Lead Agency	Forest Service and TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	Forest Service and TRPA	
Timing	**Start:**	Prior to project construction.
	Complete:	Prior to project construction.
2006 Status	Incomplete	

7.3-6 (SCENIC-8) Design and Site the Proposed Sand Dunes Lodge to Minimize Visibility From Off-Site Views

Description

MPA 07

Prior to permitting of construction, the following mitigation measures should be taken:

1. Prepare field simulations of the height and mass of the proposed structure. Such simulations may include story poles, balloons or other techniques that effectively demonstrate extent of visibility from off-site views.
2. Determine visibility of proposed structure from viewpoints identified in the MPA 07 Draft EIR/EIS/EIS.
3. If simulations demonstrate that the building may extend above the adjacent ridge line or tree line as viewed from off-

site viewpoints, changes to the building height, roof pitches, massing, siting, proposed grading or design would be made to reduce the buildings visibility.

4. Confirm effectiveness of revised siting and design measures with revised simulations.

Impacts Mitigated	06 EIR/EIS/EIS-SCENIC-8: The Sand Dunes Lodge Would be Visible From Off-Site Viewpoints – Future MPA 07 Phase	
Mitigation Level	Reduced visual effects of proposed Sand Dunes Lodge	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Prior to project construction.
	Complete:	Prior to project construction.
2006 Status	Incomplete	

7.4 CONSTRUCTION MEASURES

7.4-1 REVISED Construction Erosion Reduction Program

Description

MP 96

Referenced to pages 4.1-56 to 4.1-65 of Volume 4a of the 95 Draft EIR/EIS/EIS

MPA 07

Referenced to APPENDIX 2-B of the 06 Draft EIR/EIS/EIS for the Revised Construction Erosion Reduction Program (CERP).

The Revised CERP would minimize the rate of soil loss from Heavenly Mountain Resort caused by construction activities associated with the MPA 07. This program is outlined in Appendix 2-B and serves as a working version of Mitigation Measure 7.4 1 from the MP 96. The program is now considered a design feature of the MPA 07 and not a separate mitigation measure. Heavenly would be the implementing entity, and the Forest Service or TRPA would be the lead and monitoring agency. Mitigation measures contained in this program will be finalized during project design and implemented during construction of the new facility.

The Erosion Control Plan and Revegetation Specifications for Ski Runs and Disturbed/Developed Areas (previously referred to as "Heavenly Valley Summer Operation and Erosion Control Plan") has been updated and integrated as part of the revised CERP for the MPA 07. The revegetation specification for ski trails and developed and disturbed project areas have been revised and updated by an outside contractor. During these revisions, monitoring results from the Environmental Monitoring Program (1995-2003) were incorporated to integrate more effective BMPs, changes in ski area management directives, improved seed mixtures, Forest Service native plant program, and Forest Service noxious weed management program into the plan. The plan should also help facilitate project documentation and record keeping.

Impacts Mitigated	06 EIR/EIS/EIS- WATER-1: Existing Percent ERA in Watersheds CA-6, NV-1 and NV-4 are above allowable TOCs 06 EIR/EIS/EIS- WATER 2: Peak and Total Runoff Increases Due to Vegetation Removal and Impervious Surface Construction 06 EIR/EIS/EIS- WATER -3: MPA 07 Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, Mott and Daggett Creeks 06 EIR/EIS/EIS- WATER-4: Phase I Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, and Daggett Creeks
Mitigation Level	Future development must not increase the percent Equivalent Roaded Acres (ERA) above the recommended Thresholds of Concern (TOC) for each of the Heavenly watersheds. Meet State and regional water quality standards. Temporary and permanent BMP effectiveness.
Lead Agency	Forest Service, TRPA, and Lahontan
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	Forest Service
Timing	**Start:** At beginning of each construction project. **Complete:** Following successful implementation of construction mitigation measures.
2006 Status	Ongoing
Milestone/Product	Temporary and permanent water quality BMPs are implemented with each construction product. They are maintained throughout the life of the project. Forest Service specialists provide ongoing field oversight. CWE Restoration Program implemented each summer. Forest Service provides field oversight. Heavenly prepares annual summary of work, documenting project completions and outstanding issues.

7.4-2 Construct Infiltration Facilities

Description

MP 96

Heavenly shall, for new facilities with impervious surfaces, evaluate whether infiltration of storm water may contaminate the groundwater. If groundwater is not at risk, Heavenly shall

design and construct infiltration facilities with capacity for a 20-year, 1-hour storm event. If groundwater is at risk of contamination, Heavenly shall design and construct SEZs, detention ponds or other facilities to prevent an increase in the peak flow. Facilities should be designed using the methodology in TRPA's *Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Best Management Practices*.

MPA 07

Mitigation 7.4-2 of the MP 96 is now a design feature of the MPA 07. Heavenly shall, for new facilities with impervious surfaces, evaluate whether infiltration of storm water may contaminate the groundwater. If groundwater is not at risk, Heavenly shall design and construct infiltration facilities with capacity, at a minimum for a 20-year, 1-hour storm event. If groundwater is at risk of contamination, Heavenly shall design and construct SEZs, detention ponds or other facilities to prevent an increase in the peak flow. Facilities should be designed using the methodology in TRPA's Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Best Management Practices. This design feature is evaluated at the site-specific engineering design phase for all projects at Heavenly Mountain Resort.

In addition to installing infiltration facilities, SEZs or detention ponds to prevent an increase in peak flow, the following additional mitigation measures can also be used:

Reduce the coverage footprint for new facilities or when modifying existing facilities by incorporating low impact development principles. Low impact development strives to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Methods, such as bioretention, green roofs, permeable pavers, or cisterns, can be incorporated into project design.

Impacts Mitigated	96 Draft EIR/EIS/EIS: Peak and total runoff increases due to future construction of facilities identified in 95 Draft EIR/EIS/EIS Table 4.1-13. 06 EIR/EIS/EIS- WATER 2: Peak and Total Runoff Increases Due to Vegetation Removal and Impervious Surface Construction 06 EIR/EIS/EIS- WATER-3: MPA 07 Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, Mott and Daggett Creeks 06 EIR/EIS/EIS- WATER-4: Phase I Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, and Daggett Creeks	
Mitigation Level	Runoff capacity for 20-year, 1-hour storm event.	
Lead Agency	TRPA and Lahontan	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	At beginning of each construction project.
	Complete:	Following successful construction of infiltration facility.
2006 Status	Ongoing	
Milestone/Project	Engineered for project sites and implemented as part of individual projects	

7.4-3 (WATER-1) Control Runoff for Existing Facilities

Description

<u>MPA 07</u>

1. Heavenly shall complete installation of BMPs at all lodges and support facilities, parking lots, and ski lifts.
2. Heavenly shall complete the BMP retrofit project for California Base Parking Lot by October 2007 as required under the Updated Waste Discharge Permit.
3. Heavenly shall complete a BMP retrofit project for the Stagecoach Parking Lot and install BMPs on all existing structures and facilities prior to further development in NV-4. Projects that involve restoration and revegetation and will not increase watershed ERAs for NV-4 shall be permitted. This measure #3 is regulated by NDEP not TRPA or the Forest

	Service.
Impacts Mitigated	06 EIR/EIS/EIS- WATER 2: Peak and Total Runoff Increases Due to Vegetation Removal and Impervious Surface Construction
Mitigation Level	Site Specific, but runoff capacity for the 20-year, 1 hour design storm at a minimum; Watershed ERAs must be below allowable TOC prior to future development
Lead Agency	TRPA and Lahontan (items 1 and 2 only); NDEP (Item 3)
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	TRPA (items 1 and 2 only); NDEP (Item 3)
Timing	**Start:** Ongoing, Upon Adoption of MPA 07
	Complete: Ongoing
2006 Status	New mitigation/design features

7.4-4 (WATER-2) Meet Water Quality Standards

Description

MPA 07

Implementation of the following mitigation measures would reduce the impact to less than significant. The Forest Service would be the lead and monitoring agency. Heavenly would be the implementing entity.

1. Heavenly shall continue the maintenance phase of the CWE Restoration Program (Appendix I of 95 Draft EIR/EIS/EIS).

2. Heavenly shall implement the Revised CWE Restoration Program. The program should be revised and prioritized as determined by future monitoring and the Forest Service Access and Travel Management Plan (ATM) for the Heavenly Valley Transportation shed.

3. Heavenly shall continue to implement the Revised CERP (Updated Mitigation Measure 7.4 1).

4. Heavenly and the Forest Service shall implement the Revised Environmental Monitoring Program (Updated Mitigation Measure 7.5 2)

5. Heavenly shall install and maintain BMPs at all facilities and parking lots.

6. At least one water year prior to construction of Ski Lift Z and/or Ski Trails 86, 87, 89, 91 (now Ski Trails Z1, Z2, Z4, and Z8 in the MPA 07), the Forest Service and NDEP will conduct a field visit to determine an appropriate site for installation of a monitoring station on the South Fork of Daggett Creek if the Forest Service and NDEP determine that installation of a monitoring site for water quality is necessary.

7. Snow grooming equipment and activities are not permitted on ski trails deficient of snow cover adequate enough to protect soil and water resources.

Impacts Mitigated

06 EIR/EIS/EIS- WATER-3: MPA 07 Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, Mott and Daggett Creeks

06 EIR/EIS/EIS-WATER-4: Phase I Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, and Daggett Creeks

Mitigation Level State and Regional water quality constituent standards; Updated Waste Discharge Permit

Lead Agency Forest Service

Implementing Agency Heavenly Mountain Resort

Monitoring Agency Forest Service

Timing **Start:** Ongoing

Complete: Ongoing

2006 Status New Mitigation/Design Criteria- Ongoing

7.4-5 (WATER-3) Implement Adaptive Ski Run Prescriptions

Description

MPA 07

Heavenly shall implement the ski trail prescriptions proposed in the Easy Street Run Hazard Reduction Program on all future ski trails and selected and approved existing ski trails with significant hazards, adapting prescription techniques to monitoring results from demonstration projects. Monitoring results will be reviewed and the program amended and

improved based on these results. The program is a process-based, adaptive management approach to ski trail implementation. Heavenly shall be the implementing and monitoring entity, and the Forest Service shall be the oversight and approval agency. For ski trails in the Lake Tahoe Basin, TRPA shall also be the approval agency.

Impacts Mitigated

06 EIR/EIS/EIS-WATER-1: Existing Percent ERA in Watersheds CA-6, NV-1 and NV-4 are above allowable TOCs

06 EIR/EIS/EIS-WATER 2: Peak and Total Runoff Increases Due to Vegetation Removal and Impervious Surface Construction

06 EIR/EIS/EIS-WATER-3: MPA 07 Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, Mott and Daggett Creeks

06 EIR/EIS/EIS-WATER-4: Phase I Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, and Daggett Creeks

Mitigation Level

ERAs must be below watershed TOC prior to further development within the watershed

Lead Agency

TRPA

Implementing Agency

Heavenly Mountain Resort

Monitoring Agency

TRPA

Timing

Start: Ongoing

Complete: Ongoing

2006 Status

New Mitigation/Design Criteria- Ongoing and adapted to monitoring results and new technologies

7.4-6 (WATER-4) Control Runoff due to Future Construction and Long-Term Operation Facilities

Description

MPA 07

1. Before design and construction of each specific project, identify the likely project-specific impacts and identify specific appropriate mitigation measures for each impact. Heavenly shall continue to include temporary and permanent BMPs details and specifications on all project designs submitted to TRPA and the Forest Service for approval. BMPs are intended to reduce runoff and capture

sedimentation that creates water quality impacts from construction.

2. New facilities with impervious surfaces shall be designed and constructed with infiltration BMPs with a minimum capacity for a 20-year, 1-hour storm event. Runoff structures and BMPs will be designed and constructed to require minimal maintenance, avoid directing runoff into sensitive areas, and adequately treat the 20-year, 1 hour storm. In addition, Heavenly shall continue to maintain existing runoff diversion structures and other erosion reduction BMPs as required in the Revised Environmental Monitoring Program.
3. While underground snowmaking may be proposed and approved for summer-groomed ski trails and select road segments exempted under the MP 96 (see Figure 2-3 of the 95 Draft EIR/EIS/EIS), all subsequently proposed snowmaking shall be installed above ground except as follows: If a certain situation dictates installing snowmaking systems below ground, the impacts of the ground disturbance shall be determined and mitigated to less than significant using site-specific BMPs or removal or restoration of other existing disturbances. If impacts from new trenching cannot be adequately mitigated, then snowmaking equipment shall be installed above ground. Under ground snowmaking alternatives were not analyzed in the 06 Draft EIR/EIS/EIS because the existing CWE model is not sensitive enough to differentiate short-term non-vegetation removal and non-land coverage disturbances.
4. Scheduling and documentation of maintenance activities will be formalized to facilitate monitoring and reporting activities required through the Environmental Monitoring Program and the Updated Discharge Permit. A map is required to identify the locations of these structures and would facilitate annual maintenance and documentation of maintenance activities and timing.
5. The proposed primary use of the Mid-station road is disclosed in Appendix 6 of MPA 07. If additional secondary use is proposed for the Gondola Mid Station road, such as construction of a future Gondola Mid Station restaurant, additional analysis shall be required to determine potential impacts.

Impacts Mitigated	06 EIR/EIS/EIS- WATER 2: Peak and Total Runoff Increases Due to Vegetation Removal and Impervious Surface Construction	
	06 EIR/EIS/EIS- WATER-3: MPA 07 Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, Mott and Daggett Creeks	
	06 EIR/EIS/EIS- WATER-4: Phase I Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, and Daggett Creeks	
Mitigation Level	Site-specific, but at a minimum runoff capacity for 20-year, 1-hour storm event; effective soil cover adequate to control soil loss	
Lead Agency	TRPA and Lahontan	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	During the planning stages of a facility
	Complete:	Ongoing
2006 Status	New Mitigation/Design Criteria	

7.4-7 Avoid Disturbance to SEZ or Restore/Create SEZ

Description

Existing 1994-95 Condition

Implementation of the following mitigation measures will reduce the impact to less than significant. TRPA and Forest Service will be the lead and monitoring agencies and Heavenly will be the implementing entity. Mitigation will begin at the time of adoption of the MP 96.

1. Heavenly shall restore the in-region disturbed but not developed SEZs (29.1 acres). The restoration designs for these SEZs shall achieve both SEZ restoration and still permit ski area operations and wintertime skiing in the restored areas. TRPA and Forest Service shall have the restoration design approval authority.

2. Heavenly shall restore an additional 5.2 acres of SEZs within the Lake Tahoe Basin. This acreage represents a 25 percent decrease in the total evenly disturbed and

developed SEZ acreage. Possible locations for the restoration work include Upper Edgewood Creek below the Boulder Base Lodge, along Trout Creek near the STPUD treatment plant, and along Trout Creek at the Meeks Lumber relocation site.

3. Heavenly shall implement the CWE Soil Erosion Reduction Program, in particular the restoration of 0.9 acres of SEZs (see 95 Final EIR/EIS/EIS Table 4.2-3) outside the Lake Tahoe Region.

MP 96

Implementation of the following mitigation measures would reduce the impact to less than significant. The Forest Service and TRPA will be the lead agency and the monitoring agency. Heavenly will be the implementing entity. Mitigation should occur at or before the time of development of the new facility. Note that mitigations 1 and 2 result in no additional land coverage or permanent disturbance in SEZ within the Lake Tahoe Region.

1. Heavenly shall realign Ski Lifts P, K, and X; and Ski Trails 30, 31, 35, 36 and 37 to avoid development within SEZs and SEZ setbacks.

2. Heavenly shall design the Gondola so that no towers are constructed in the SEZ, and only trimming of the tops of vegetation to a height of 19 feet is required within the SEZ and SEZ setbacks.

3. Heavenly shall trim only the tops of vegetation within SEZ crossings (to a height of 3 feet tall) along Ski Trails 87 and 91.

4. Heavenly shall, for development in SEZs outside the Lake Tahoe Region, comply with relevant Forest Service BMPs and guidelines regarding development within SEZs to minimize the severity of impact to SEZs from development, including restoration of up to 15.9 acres of SEZs outside the Lake Tahoe Basin.

5. Heavenly shall, for development in SEZs outside the Lake Tahoe Region, minimize the aerial extent and intensity of the impacts including, but not limited to, use of helicopters to install ski lift towers.

6. Heavenly shall, prior to the time of development of the new East Peak Lodge, design and construct the lodge to minimize the area and severity of impact to the SEZ as determined jointly by Forest Service and Heavenly.

7. Heavenly shall implement the SEZ restorations identified in 96 Final EIR/EIS/EIS Tables 4.2-2 and 4.2-3 and an additional 0.6 acres outside the Lake Tahoe Region.

8. Heavenly shall minimize operational impacts to the SEZs by annually cutting only the tops of vegetation (to a height of 3 feet tall) to prevent skier safety hazards. Vegetation shall be cut with hand held equipment, so that heavy equipment and vehicles are not driven and used in the SEZs.

9. If avoidance is not possible pursuant to mitigation measure number 1, Heavenly shall apply for and seek exemption findings from Lahontan and TRPA.

<u>MPA 07</u>

In summary, to meet compliance with the mitigation targets as required in the MP 96 MMP, Heavenly must restore at least 18.3 acres of disturbed SEZ in 2006. Under a worst case scenario, the following mitigation measures are necessary to reduce the impact to less than significant. TRPA and Forest Service will be the lead and monitoring agencies and Heavenly would be the implementing entity. Mitigation measures are ongoing until verification is completed.

1. TRPA and the Forest Service will be the lead and monitoring agencies and Heavenly would be the implementing entity. The mitigation process is ongoing until verification is completed.

2. Heavenly shall complete the 7.65 acres of restoration identified in the Edgewood Creek Watershed Assessment and Restoration Plan (Swanson 2005, Appendix 2-F).

3. Heavenly shall complete the 8.75 acres of restoration identified for the Edgewood Bowl and North Bowl areas identified by Swanson Hydrology and Geomorphology in a subsequent evaluation of the Edgewood Bowl and North Bowl SEZs (Swanson 2005, Appendix 2-F). A portion of

this 8.75 acres has been completed in the summer of 2006.

4. Heavenly shall complete the 1.10 acres of SEZ restoration/creation identified in the Upper Shop Water Quality and SEZ Improvements project (see Appendix 3.2-A)

5. Heavenly shall utilize credit for restoration of developed SEZs (up to 0.95 acre is available) to meet the remaining 0.80 acre of disturbed SEZ restoration needed.

6. Heavenly shall begin the projects in 2006, complete restoration of the projects listed above in Phase I, and work with the regulatory agencies to verify completion of the restoration as required to meet the restoration schedule outlined under the MP 96 for the mitigation of impacts to SEZs from past projects (total of 29.1 acres).

Impacts Mitigated	96 Final EIR/EIS/EIS: SEZ Disturbance for Existing Heavenly Facilities (Existing 1994-1995 Conditions) 96 Final EIR/EIS/EIS: Disturbance to Jurisdictional Wetlands and Waters from Existing Heavenly Conditions (Existing 1994-1995 Conditions) 06 EIR/EIS/EIS- SEZ-1: SEZ Disturbance from Existing Heavenly Facilities 06 EIR/EIS/EIS- SEZ-2: Disturbance of Jurisdictional Wetlands and Waters from Existing Heavenly Facilities
Mitigation Level	Compliance with TRPA & Forest Service criteria for disturbance within an SEZ.
Lead Agency	TRPA, Lahontan and Forest Service
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	TRPA and Forest Service

Timing

Start: The following table provides interim performance targets for SEZ restoration in the Lake Tahoe Region.

Year	Acreage of Developed SEZ	Acreage of Disturbed SEZ
1997	0.0	0.0
1998	0.0	0.0
1999	1.3	9.0
2000	0.0	3.0
2001	1.3	3.0
2002	0.0	3.0
2003	1.3	3.0
2004-2006	1.3	8.1
Total	**5.2**	**29.1**

Complete: Ongoing.

2006 Status Ongoing, partially complete.

Milestone/Product See Appendix 8 of the MPA 07 for descriptions of completed projects in fulfillment of MP 96 SEZ Restoration Schedule; See MPA 07 Restoration Schedule (page 3.2-21 of the 06 Draft EIR/EIS/EIS) towards completion of requirements of 29.1 acres of the SEZ disturbed prior to adoption of MP 96. All but two components of the Edgewood Creek Watershed Restoration program were completed in 2006. Two components will be completed in 2007 as documented in Chapter 3.2 of the MPA 07 EIR/EIS/EIS.

7.4-8 Avoid Disturbance to Wetlands or Restore/Create Wetlands

Description

MP 96

Implementation of the following mitigation measures would reduce the impact to less than significant. The U.S. Army Corps of Engineers will be the lead and monitoring agency. Heavenly will be the implementing entity. Mitigation will occur at or before the time of development of the new facility.

1. Heavenly shall, before development of these facilities begins, complete a jurisdictional wetlands delineation to determine the actual location of jurisdictional wetlands and waters surrounding the specific project.

2. Heavenly shall avoid development within the wetlands and

waters to the extent possible as determined jointly by the U.S. Army Corps of Engineers and Heavenly.

3. Heavenly shall, if development within the wetlands cannot be avoided, seek to obtain a Section 404 permit from the COE, including water quality certification by Lahontan, and comply with all requirements of the permit to mitigate the specific impacts of the project.

MPA 07

Implementation of the mitigation measures listed for 7.4-3 for existing disturbance to SEZs would also reduce the impact from past disturbances to jurisdictional waters and wetlands to a less than significant level.

Impacts Mitigated	96 Final EIR/EIS/EIS: Disturbance of Jurisdictional Waters and Wetlands Due to the Construction of MP 96 Facilities 06 EIR/EIS/EIS- SEZ-1: SEZ Disturbance from Existing Heavenly Facilities 06 EIR/EIS/EIS- SEZ-2: Disturbance of Jurisdictional Wetlands and Waters from Existing Heavenly Facilities
Mitigation Level	Compliance with U.S. Army Corps of Engineers wetlands permitting requirements.
Lead Agency	U.S. Army Corps of Engineers and Lahontan
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	U.S. Army Corps of Engineers
Timing	**Start:** Prior to development of a new facility. **Complete:** Upon completion of the proposed facility.
2006 Status	Ongoing, with restoration projects completed.
Milestone/Product	See Appendix 8 of the MPA 07 for descriptions of completed projects in fulfillment of MP 96 SEZ Restoration Schedule; See MPA 07 Restoration Schedule (page 3.2-21 of the 06 Draft EIR/EIS/EIS) towards completion of requirements of 29.1 acres of the SEZ disturbed prior to adoption of MP 96.

7.4-9 (SEZ-3) Restore Future Disturbed SEZs to Meet MP 96 Mitigation Measure 7.4-3 Requirements

Description MPA 07

Implementation of the following mitigation measures will reduce the impact from future SEZ disturbance to less than significant. Depending on project location, the Forest Service, TRPA, or Lahontan will be the lead and monitoring agencies. Heavenly will be the implementing entity. Mitigation implementation will occur at or before the time of development of the new MPA 07 facility.

In-Basin

1. Run widening activities (Ski Trails I1, H9, H10, H11, S2, and Z2) will be conducted over the snow, or by other means that do not cause ground disturbance, and ONLY coniferous trees will be felled and left in place. Shrubs and herbaceous vegetation will remain, no ground disturbance will occur, and hydrologic function of the SEZ will be preserved.
2. Heavenly shall, prior to the time of construction of Ski Trails H13, 12, and 5a, design the ski trails to avoid new disturbance to SEZs and SEZ setbacks or minimize if avoidance is not possible as determined jointly by the Forest Service, TRPA, and Lahontan. If impacts to hydrologic function or permanent degradation to riparian communities are determined, findings must be made for TRPA Code of Ordinances 20.4.b (2) and the Lahontan Basin Plan (restoration at a minimum of 1.5:1 ratio and net environmental benefit).
3. Upon replacement of Boulder Ski Lift (Ski Lift Q), the ski lift base will be relocated outside the SEZ along with all buildings involved in Boulder Operations. Alternatively, facilities may be moved to the existing Boulder parking lot if TRPA determines that the relocation area is man-modified and does not require restoration. Ski Lift Q must be replaced in its current alignment, and no direct disturbance or indirect impacts to the Edgewood Creek SEZ Restoration project area will be permitted.
4. No vehicles or equipment are permitted off road in SEZs without justification and prior approval from TRPA, Lahontan, and the Forest Service.
5. Channel and streambed stability are important components of sediment reduction and SEZ functionality. Therefore, hand pruning methods will be used to maintain riparian vegetation at a minimum height of 3 feet in the vicinity of active low flow channels. The vicinity will be defined as between the banks and within a 5 foot buffer on either side of the channel. Mechanical thinning could occur outside the designated channel and buffer area.

6. All tree removal/cutting activities for construction of the ski lifts will be conducted to reduce the potential for ground disturbance within SEZs. Mechanisms for cutting trees will be over the snow or involve the use of helicopters.
7. Sky Meadows and the portion of Heavenly Valley Creek, which feeds the meadow, will be restored (according to a Restoration Plan prepared by a third party and approved by TRPA and the Forest Serviced) after removal of the Sky Meadows facilities and deck. Decommissioned road segments R93 and R94 will remain closed.
8. If avoidance is not possible pursuant to mitigation measure 1, Heavenly will apply for and seek exemption findings from the Lahontan and TRPA and implement appropriate restoration in the minimum amount of 1.5 times the area of new disturbance.
9. For projects within jurisdictional wetlands and waters, a Section 404 permit from the USACE and water quality certification from Lahontan (in California) will be required.

Out-of-Basin

1. Heavenly will remove coniferous trees and trim only the tops of vegetation (to a height of no less than 3 feet tall) along the SEZ portions of Ski Trails 17, 18, U3, U4, Z1, Z2, Z3, Z4, Z8.
2. Heavenly will, for development in SEZs/RCAs outside the Lake Tahoe Basin, comply with relevant Forest Service BMPs and guidelines regarding development within RCAs to minimize the severity of impacts to SEZs/RCAs from development, including restoration of up to 37.29 acres (24.86 times ratio of 1.5:1) of SEZs/RCAs outside the Lake Tahoe Basin.
3. Heavenly will, for development in SEZs/RCAs outside the Lake Tahoe Basin, minimize the areal extent and intensity of the impacts including, but not limited to, use of helicopters to install ski lift towers.
4. Channel and streambed stability are important components of sediment reduction and SEZ functionality. Therefore, Heavenly will minimize operational impacts to the SEZs/RCAs by using hand-pruning methods to maintain riparian vegetation at a minimum height of 3 feet in the vicinity of active low flow channels. The vicinity will be defined as between the banks and within a 5 foot buffer on either side of the channel. Mechanical thinning could occur outside the designated channel and buffer area.

5. For projects within jurisdictional wetlands and waters, a Section 404 permit from the USACE and water quality certification from Lahontan (in California) will be required.

Impacts Mitigated	06 EIR/EIS/EIS- SEZ-3: SEZ Disturbance due to the Construction of Proposed Facilities 06 EIR/EIS/EIS- SEZ-4: Disturbance of Jurisdictional Wetlands and Waters Due to the Construction of Proposed Facilities
Mitigation Level	Compliance with TRPA & Forest Service criteria for disturbance within an SEZ.
Lead Agency	TRPA, Lahontan and Forest Service
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	TRPA and Forest Service
Timing	**Start:** Prior to development of a new facility. **Complete:** Upon completion of the proposed facility.
2006 Status	Ongoing, with restoration projects completed.

7.4-10 (SEZ-4) Restore Future Disturbed Jurisdictional Wetlands and Waters to Meet MP 96 Mitigation Measure 7.4.4 Requirements

Description

MPA 07

Implementation of the following mitigation measures will reduce the impact to less than significant. The Forest Service and USACE will be the lead and monitoring agencies. Lahontan may be a lead and monitoring agency for 401 Certification of projects located in California. Heavenly will be the implementing entity. Mitigation will occur at or before the time of development of the new MPA 07 facility.

1. Heavenly will, before development begins, complete a jurisdictional wetlands delineation to determine the actual location of jurisdictional wetlands and waters surrounding the specific project.
2. Heavenly will avoid development within the wetlands and waters to the extent possible as determined jointly by USACE and the Forest Service.
3. Heavenly will, if development within the wetlands cannot be avoided, obtain a Section 404 permit from the USACE or approval under existing general permits, including water quality certification (Section 401) by Lahontan (in

California), and comply with all requirements of the permit to mitigate specific impacts of the project.

4. Sky Meadows Lodge and Deck (CA-1), the Base of Ski Lift Q (NV-3), and Boulder Operations will be relocated to locations outside delineated wetland boundaries to reduce impacts caused by past projects.
5. All tree removal activities for construction of ski lifts and ski trails will be conducted to reduce the potential for ground disturbance within wetlands or jurisdictional waters.
6. Additionally, as stated in the Updated Waste Discharge Permit (Board Order NO. R6T-2003-0032, page 15) for projects that impact SEZs [or wetlands] in California, "…any disturbance to SEZ [or wetlands] for new construction is prohibited unless the Regional Board provides an exemption to prohibitions against discharge or threatened discharge of wastes attributable to new development in SEZ [or wetlands]. If the Regional Board provides an exemption, additional mitigation measures may also be required for their permitting."

Impacts Mitigated 06 EIR/EIS/EIS- SEZ-4: Disturbance of Jurisdictional Wetlands and Waters Due to Construction of Proposed Facilities

Mitigation Level Compliance with U.S. Army Corps of Engineers wetlands permitting requirements.

Lead Agency U.S. Army Corps of Engineers and Lahontan

Implementing Agency Heavenly Mountain Resort

Monitoring Agency U.S. Army Corps of Engineers

Timing **Start:** Prior to development of a new facility.

Complete: Upon completion of the proposed facility.

2006 Status New Mitigation/Design Criteria

7.4-11 (SEZ-5) Restore Disturbed SEZs due to Construction of Phase I Projects to Meet MP 96 Mitigation Measure 7.4-3 Requirements

Description MPA 07 Phase I

Implementation of the following mitigation measures will reduce the impact from future SEZ disturbance to less than significant. Depending on project location, the Forest Service, TRPA, and Lahontan will be the lead and monitoring agencies. Heavenly will be the implementing entity. Mitigation

implementation will occur at or before the time of development of the new MPA 07 facility.

In-Basin

1. Heavenly shall, prior to the time of construction of Ski Trail I5 (proposed Skiways Trail), design the ski trail to avoid new disturbance to SEZs and SEZ setbacks or minimize the area of disturbance if avoidance is not possible as determined jointly by the Forest Service, TRPA, and Lahontan. Only the removal of conifer trees (10 trees total) depicted in design plans in Appendix 2-H will be removed.
2. Heavenly will implement the restoration projects outlined in the Edgewood Creek Watershed Assessment and Restoration Plan (Swanson 2005, Appendix 2-F).
3. No vehicles or equipment are permitted off road in SEZs without justification and prior approval from TRPA, Lahontan, and the Forest Service.
4. Channel and streambed stability are important components of sediment reduction and SEZ functionality. Therefore, hand pruning methods will be used to maintain riparian vegetation at a minimum height of 3 feet in the vicinity of active low flow channels. The vicinity will be defined as between the banks and within a 5 foot buffer on either side of the channel. Mechanical thinning could occur outside the designated channel and buffer area.
5. All tree removal/cutting activities for construction of the ski lifts will be conducted to reduce the potential for ground disturbance within SEZs. Mechanisms for cutting trees will be over the snow or involve the use of helicopters.
6. Heavenly will apply for and seek exemption findings from the Lahontan (in California) and TRPA and implement appropriate restoration in the minimum amount of 1.5 times the area of new disturbance.
7. For projects within jurisdictional wetlands and waters, a Section 404 permit from the USACE and water quality certification from Lahontan (in California) will be required.

Out of Basin

No projects are proposed for Phase I that impact out of basin SEZs/RCAs

Impacts Mitigated

06 EIR/EIS/EIS- SEZ-5: SEZ Disturbance Due To Construction Of 2006 Projects

06 EIR/EIS/EIS- SEZ-6: Disturbance Of Jurisdictional Wetlands And Waters Due To The Construction Of 2006 Projects

Mitigation Level	Compliance with TRPA & Forest Service criteria for disturbance within an SEZ.	
Lead Agency	TRPA, Lahontan, and Forest Service	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA and Forest Service	
Timing	**Start:**	Prior to development of a new facility.
	Complete:	Upon completion of the proposed facility.
2006 Status	New Mitigation/Design Criteria	

7.4-12 (SEZ-6) Restore Jurisdictional Wetlands and Waters Disturbed Due to Construction of Phase I Projects to Meet MP 96 Mitigation Measure 7.4-4 Requirements.

Description

MPA 07 Phase I

Implementation of the following mitigation measures will reduce the impact from future SEZ disturbance to less than significant. The Forest Service and TRPA will be the lead and monitoring agencies. Heavenly will be the implementing entity. Mitigation implementation will occur at or before the time of development of the North Bowl Ski Lift and Ski Trail S10.

1. Heavenly will, before project development begins, complete a jurisdictional wetlands delineation to determine the actual location of jurisdictional wetlands and waters surrounding the specific project.
2. Heavenly will avoid development within the wetlands and waters to the extent possible as determined jointly by USACE and the Forest Service.
3. Heavenly will, if development within the wetlands cannot be avoided, obtain a Section 404 permit from the USACE , including water quality certification (Section 401) by the Lahontan (in California), and comply with all requirements of the permit to mitigate specific impacts of the project.
4. All tree removal activities for construction of ski lifts and ski trails will be conducted to reduce the potential for ground disturbance within wetlands or jurisdictional waters.

Impacts Mitigated 06 EIR/EIS/EIS- SEZ-6: Disturbance Of Jurisdictional Wetlands And Waters Due To The Construction Of 2006 Projects

Mitigation Level Compliance with U.S. Army Corps of Engineers wetlands permitting requirements.

Lead Agency	U.S. Army Corps of Engineers	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	U.S. Army Corps of Engineers	
Timing	**Start:**	Prior to development of a new facility.
	Complete:	Upon completion of the proposed facility.
2006 Status	New Mitigation/Design Feature	

7.4-13 TRPA Land Coverage Mitigation

Description

MPA 07

As documented in a TRPA Land Coverage Verification letter dated December 5, 2005 (Appendix 3.4-B), Heavenly removed and restored 422,623 ft2 of previously existing land coverage, including 105,415 ft2, (2.4 acres) in Hydrologic Transfer Area 4 (South Stateline) and 317,208 ft2 (7.2 acres) in Hydrologic Transfer Area 5 (Upper Truckee). An additional 37,897 ft2 (0.86 acres) of banked coverage may become available in Hydrologic Transfer Area 5 after successful restoration.

To utilize the 434,580 ft2 (as outlined in Table 3.4-2 of this 2006 EIR/EIS/EIS) of available land coverage within the Heavenly project area (includes remaining coverage available plus banked coverage), TRPA must make appropriate relocation findings included in the Code of Ordinances, and temporary and permanent BMPs must be installed and maintained as outlined in mitigation measure 7.4-1, the Revised Construction Erosion Reduction Program (CERP).

Impacts Mitigated	06 EIR/EIS/EIS-EARTH-1: New Permanent Land Coverage.	
Mitigation Level	Land coverage no greater than allowed by TRPA using the Bailey Land Capability Classification system.	
Lead Agency	TRPA	
Implementing Agency	TRPA and Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Upon approval of the MPA 07
	Complete:	Upon completion of project construction and Findings.
2006 Status	Ongoing	

7.4-14 Reduce and Control Fugitive Dust

Description

MP 96

Heavenly shall require its contractors to implement mitigation measures during project construction to minimize the generation and transport of construction related fugitive dust. These measures consist of using chemical dust suppressants (with prior review and approval by the Lahontan staff for California projects) and/or water on unpaved roads, graded and excavated areas and material storage piles, and of cleaning on-site paved roads daily to remove tracked-on dirt and mud.

Impacts Mitigated Cumulative change in ambient fine particulate (PM_{10}) concentrations. (Existing 1994-95 Conditions)

Mitigation Level Reduce fine particulate emissions during construction.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing **Start:** Upon commencement of project construction.

Complete: Upon completion of project construction.

2006 Status Ongoing

Milestone/Product Implemented as a BMP as part of individual projects.

7.4-15 Minimize Removal/Modification of Deciduous Trees, Wetlands, and Meadows

Description

MP 96 and MPA 07

1. Heavenly Mountain Resort shall retain a qualified biologist to conduct a preliminary vegetation survey prior to the project-level design or approval of any proposed facility. This vegetation survey shall identify all deciduous trees, wetlands, and meadows located within or adjacent to the proposed construction corridor and shall delineate facility-siting alternatives that avoid the loss or degradation of these resources. Heavenly Mountain Resort, through consultation with the Forest Service and TRPA, shall then implement a final engineered facility siting alternative that avoids the loss or

degradation of riparian or wetland plant communities.

2. If TRPA, Lahontan, and the Forest Service jointly determine (the Forest Service, Lahontan, and TRPA shall determine separately on lands of individual jurisdiction) that the construction of any new facility cannot be sited to avoid the loss or degradation of riparian or wetland plant communities, the areal extent of the impact and the intensity of the impact shall be minimized. Methods for minimizing impact shall include, but not be limited to, the realignment of facilities to minimize the acreage of riparian or wetland plant communities affected, hand excavation adjacent to riparian or wetland plant communities, and use of helicopters to install ski lift towers and other facilities. For each acre of disturbed riparian or wetland vegetation, an area 1.5 times the impacted area shall be restored or created within the special use permit boundary.

Impacts Mitigated	96 Final EIR/EIS/EIS: Loss or degradation of native vegetation associations due to the construction of new MP 96 facilities. 06 EIR/EIS/EIS-7.4-8: Loss or degradation of native vegetation associations due to the construction of new MPA 07 facilities.	
Mitigation Level	Non-degradation of deciduous trees, wetlands, and meadows.	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Prior to the approval of a MPA 07 project.
	Complete:	Upon completion of construction or, if necessary, following implementation of vegetation creation and restoration.
2006 Status	Ongoing	
Milestone/Product	Implemented as part of individual projects.	

7.4-16 (BIO-2) Active Raptor and Migratory Bird Nest Site Protection Program

Description MPA 07

Pre-construction surveys, conducted during the nesting season immediately prior to project construction, shall be conducted to identify any active raptor nest sites within the selected alignment. During initial construction activities (tree removal), a Forest Service qualified biological monitor shall be onsite to evaluate whether any raptors or migratory birds are occupying trees within 100 feet of the construction corridor. The biological monitor will have the authority to stop construction near occupied trees if it appears to be having a negative impact on nesting raptors or migratory birds or their young observed within the construction setbacks of the project area. If construction is stopped, the monitor must consult with, Forest Service and TRPA staff within 24 hours to determine appropriate actions to continue construction while reducing impacts to identified raptors or migratory birds.

Impacts Mitigated 06 EIR/EIS/EIS-BIO-2: Loss of active raptor and migratory bird nests.

Mitigation Level Protection of raptor and migratory bird nests and fledglings.

Lead Agency Forest Service

Implementing Agency Heavenly Mountain Resort

Monitoring Agency Forest Service

Timing **Start:** Pre-construction of projects.

Complete: Upon completion of construction activities.

2006 Status New Mitigation/Design Feature

7.4-17 Monitor and Protect Northern Goshawk

Description MP 96 and MPA 07

1. Surveys for northern goshawk shall be funded by Heavenly and conducted by the Forest Service or by others approved by the Forest Service prior to the onset of any project that proposes to affect suitable northern goshawk habitat or any project located within 0.5 mile of suitable northern goshawk habitat. All surveys shall be in accordance with the most recent Forest Service Region 5 protocol. If a northern goshawk nesting territory is discovered, a Protected Activity Center shall be delineated in accordance with the Sierra

Nevada Forest Plan Amendment Record of Decision (January 2004). A LOP must be maintained to prohibit activities or vegetation treatments which may disrupt breeding within ¼ mile of the PAC from February 15 through September 15. The LOP may be waived if surveys confirm nesting is not occurring or if the activity is of such scale and duration that impacts to breeding California spotted owls would not occur. A one-half mile disturbance zone surrounding the nesting tree shall be delineated in accordance with TRPA Code of Ordinances 78.3.A(1) for in-basin areas. No manipulation of the habitat within the disturbance zone is allowed unless manipulation is necessary for habitat enhancement.

2. Heavenly Mountain Resort shall fund and the Forest Service or the TRPA shall prepare (and both the Forest Service and TRPA shall approve) updated northern goshawk habitat maps at 5-year intervals throughout the life of the MPA 07. These maps shall reflect the loss or modification of existing suitable northern goshawk habitat and shall identify new habitat areas created by the maturation of early and mid-successional forest stands and shall be based on the latest scientific information. The updated northern goshawk habitat maps shall be used to identify areas that must be surveyed for northern goshawk prior to allowing construction activities to proceed. Updated habitat maps shall not interrupt two year survey protocols. Maps utilized for the first year of surveys shall be utilized for the second year of surveys regardless if updates occur.

Impacts Mitigated

96 Final EIR/EIS/EIS Disturbance of northern goshawk nesting or foraging habitat.

06 EIR/EIS/EIS – BIO-4: Loss of sensitive (including Management Indicator Species) wildlife individuals or habitat?

Mitigation Level

Maintenance of northern goshawk habitat at Heavenly; protection of nesting goshawks from noise and human disturbance.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing

Start: Project Review.

Complete: Ongoing.

2006 Status Ongoing

7.4-18 Prohibit Skier Access on Management Prescription 9 Lands

Description

MP 96 and MPA 07

Heavenly Mountain Resort shall prohibit skier access from the Gondola Mid Station by posting ski area boundary markers and roping the perimeter of the facility.

Impacts Mitigated Installation of ski resort facilities on lands designated for Management Prescription 9 of the LTBMU's Forest Plan. (MP 96 and MPA 07)

Mitigation Level Compliance with Management Prescription 9 of the LTBMU's Forest Plan.

Lead Agency Forest Service

Implementing Agency Heavenly Mountain Resort

Monitoring Agency Forest Service

Timing

Start: Upon approval of the Heavenly Mountain Resort MPA 07.

Complete: Ongoing.

2006 Status Ongoing

Milestone/Product Methods to control access and provide for public safety in these areas are established in the Heavenly Operations and Avalanche Plan. This plan is reviewed and approved annually. The 2003/2004 Operations and Avalanche Plan is attached in the Appendix.

7.4.19 Evaluate and Monitor Known Archaeological Resources Within Comstock Logging Historic District

Description

MP 96 and MPA 07

1. The sites must be formally evaluated for the NRHP by a qualified professional as either contributors to the proposed discontiguous Comstock Logging Historic District, or on their own merits as historic properties.
2. Their data potential (criterion D) and their associations (A and B) must be established in consultation with the Nevada State Historic Preservation Office (SHPO). Concurrently, if the resources are determined to be in basin, they should

also be evaluated for designation as TRPA historic resources in compliance with TRPA Code Sections 29.4 and 29.5.

3. In addition, the sites must be monitored to determine the extent of deterioration and to discourage vandalism.
4. Avoidance of cultural resources by project components is desired.
5. If project redesign is not feasible and cultural resources that have been evaluated and determined eligible to the NRHP will be impacted, consultation and concurrence with SHPO, TRPA, Forest Service, and/or the Washoe Tribe in dealing with the affected resources must occur and measures to reduce the impact to less than significant identified. Another option that may be determined appropriate after site evaluation and monitoring is a program of public interpretation.

Impacts Mitigated	96 Final EIR/EIS/EIS: Destruction of known archaeological resources in the vicinity of existing ski trails, ski lifts, summer uses, and maintenance activities. (Existing 1994-95 Conditions)	
	96 Final EIR/EIS/EIS: Destruction of known archaeological resources in the vicinity of proposed ski trails, ski lifts, summer uses, maintenance activities.	
	06 EIR/EIS/EIS – CULT-1: Potential to Disturb Known Cultural Resources	
Mitigation Level	Identification and protection of significant archaeological resources	
Lead Agency	Forest Service	
Implementing Agency	Forest Service and Heavenly Mountain Resort	
Monitoring Agency	Forest Service	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MPA 07.
	Complete:	Ongoing.
2006 Status	Ongoing	

7.4-20 Identify and Protect Undiscovered Archaeological Resources

Description MP 96 and MPA 07

1. The LTBMU Heritage Resources staff shall have the opportunity to spot-check proposed construction areas and to consult with the SHPO, prior to final decisions regarding the siting of specific MP 96 or MPA 07 facilities.
2. If previously undiscovered resources are discovered or revealed during construction or any subsequent activity, all activity will cease in the vicinity of the discovery until the LTBMU Heritage Resources staff for either California or Nevada assesses it for eligibility to the NRHP, compliance with TRPA Code Section 29, and/or (in the event of a prehistoric or ethnographic find) for Native American (Washoe) values. This assessment will occur in consultation with the SHPO, TRPA, and the Washoe Tribe, as appropriate.
3. Cessation of activity will continue until proper treatment can be determined and implemented.
4. Avoidance of the resource may be an appropriate mitigation measure.
5. An implemented interpretive program for the cultural resource may be determined to ban an important component to the mitigation measure after evaluation of the resource.
6. The appropriate contingency clause stipulating this stop-work condition will be inserted in all contracts related to the undertakings.

Impacts Mitigated	96 Final EIR/EIS/EIS - Potential destruction of undiscovered archaeological sites during construction of facilities.	
	06 EIR/EIS/EIS – CULT-1: Potential to Disturb Known Cultural Resources	
Mitigation Level	Identification and protection of significant archaeological resources	
Lead Agency	Forest Service and TRPA	
Implementing Agency	Forest Service and Heavenly Mountain Resort	
Monitoring Agency	Forest Service and TRPA	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MPA 07.
	Complete:	Ongoing.
2006 Status	Ongoing	

7.4-21 Protect the Tahoe Rim Trail

Description

MP 96 and MPA 07

Heavenly Mountain Resort shall implement the following measures in the Galaxy and Wells Fargo Ski Lift areas to allow for continued use of the TRT during construction of resort facilities:

- The construction of permanent structures (ski lift terminals or towers) which would block trail use shall be prohibited within the current alignment of the TRT.
- Safety hazards within or adjacent to the TRT, including blasting areas, trenches, ski lift construction sites, and tree removal areas, shall be roped off and posted to prohibit public access during construction.
- Heavenly shall work with USFS, TRT and local media outlets to inform the general public of potential closure times, dates and alternative access to other areas of the TRT.
- Wherever possible, ski trails shall be sited to not intersect with the existing TRT. In addition, ski lift towers shall be sited so as to provide the greatest distance of natural vegetative buffer, including trees, woody plant material, and groundcover between the trail and the tower foundations. As required in the Cumulative Watershed Effects Section (3.1) of this document, new ski trails and ski lifts shall be constructed in order to minimize the removal of existing ground vegetation. Implementation of these measures would reduce the potential impact to less than significant.

Impacts Mitigated

96 Final EIR/EIS/EIS - Short-term conflicts with the use of the Tahoe Rim Trail caused by construction of Ski Lifts R, Y, and EE and Ski Trails 72 to 77

06 EIR/EIS/EIS – REC-2: Will the Project conflict with an established recreational use in the area?

Mitigation Level

Maintenance of the existing recreational value of the Tahoe Rim Trail.

Lead Agency

Forest Service

Implementing Agency

Heavenly Mountain Resort

Monitoring Agency

Forest Service

Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MPA 07.
	Complete:	Upon completion of MPA 07 construction.
2006 Status	Ongoing. Ski Lifts Y and EE have been removed from the MPA 07. Ski Lift R has been implemented with no adverse effects to the Tahoe Rim Trail.	

7.4-22 Secure Adequate Water Capacity Prior to Development

Description

MP 96

Heavenly on-site demands for water relate largely to snowmaking and on-mountain visitor service needs. Off-site impacts revolve around the continued development of the South Lake Tahoe Area. Heavenly has not indicated a precise schedule for the proposed expansion, other than that shown in the 95 Draft EIR/EIS/EIS, Appendix S, Table S-9. This analysis developed forecasts of off-site housing and visitor development associated with the MP 96.

Whether or not supply or infrastructure problems will exist is simply unknown at this time under these circumstances, mitigation measures will consist of:

- The Heavenly Mountain Resort will complete a detailed analysis of on-site water and sewer requirements prior to beginning each new phase of development. This analysis is complete for Phase I development.
- STPUD and KGID will review the analyses and determine if water supply and transmission capacity and sewer system collection and treatment capacity can be reasonably expected to be available to meet expansion needs.
- No further expansion will be allowed until the local utilities or Forest Service can verify existing or planned capacity sufficient to meet on-site needs.

Impacts Mitigated	96 Final EIR/EIS/EIS: Potentially inadequate water delivery infrastructure to accommodate project-related requirements.
Mitigation Level	Adequate water supply.
Lead Agency	STPUD and KGID

Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Prior to Project Review.
	Complete:	Project Review.
2006 Status	Ongoing.	
Milestone/Product	Implemented as part of individual projects. For each facility that requires additional water service by an outside provider, Heavenly first reviews the expected needs jointly with the local utility provider and determines the availability of additional capacity. Building permits are not issued by the applicable jurisdiction until the utility provider has reviewed and approved the development plans. Heavenly generally holds sufficient water rights to develop on-mountain water wells to meet domestic water needs for on-mountain lodges.	

7.4-23 Secure Adequate Sewer Capacity Prior to Development

Description	MP 96 and MPA 07 Heavenly shall acquire adequate sewer capacity prior to development of new on mountain facilities that require sewer units. Heavenly generally utilizes sewer capacity reserved for MP 96 buildout. This capacity shall be monitored to ensure that it would meet the requirements of facilities now included in the MPA 07.	
Impacts Mitigated	96 Final EIR/EIS/EIS: Potentially inadequate sewage treatment capacity.	
Mitigation Level	Adequate sewer capacity.	
Lead Agency	STPUD	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Prior to Project review.
	Complete:	Project review.
2006 Status	Ongoing.	

Milestone/Product

Implemented as part of individual projects. Prior to the adoption of the MP 96, Heavenly reserved additional sewage capacity in both service districts for future on-mountain needs. The reserved capacities are confirmed to meet future needs contained in the MPA (07). For each facility that requires additional sewer service, Heavenly reviews the expected needs jointly with the local utility provider and determines the availability of additional capacity. Building permits are not issued by the applicable jurisdiction until the utility provider has reviewed and approved the development plans.

7.5 OPERATIONS AND MAINTENANCE MEASURES

7.5-1 REVISED Cumulative Watershed Effects Restoration Program

Description

MP 96

Heavenly shall implement the maintenance phase of the CWE Restoration Program (MP96) and the Revised CWE Restoration Program (MPA 07). The programs should be revised and prioritized as determined by future monitoring. The Forest Service Access and Travel Management Plan (ATM) for the Heavenly Valley Transportation shed should also be used to appropriately revise the restoration and maintenance schedule for road segments.

The original CWE Soil Erosion Reduction Program (mitigation measure 7.5-1) was reworked and rescheduled upon completion of the 1997 Tamarack Express EA due to immediate changes in capital project priorities. The reworked 1997 CWE Restoration Program was then implemented more on a pre- and post-project basis and not as scheduled. The program is now called the 1997 CWE Restoration Program. All projects scheduled in the 1997 CWE Restoration Program have been completed and are outlined in Appendix 3.1-B. The exception is Edgewood Bowl Restoration, but this project will be completed in 2006.

MPA 07

The Revised CWE Restoration Program for the MPA 07 is outlined in Table 4 of Appendix 2-D and is scheduled according to capital project area and construction phasing. Appendix 2-D contains the Technical Report for the 2005 Cumulative Watershed Effects (CWE) Model Revision. Detailed descriptions of the CWE analysis, CWE model, and CWE restoration programs are references to Appendix 2-D.

As with the 1997 CWE Restoration Program, under the Revised CWE Restoration Program for the MPA 07, all road segments with modeled erosion rates of over 5 tons per acre/year and all ski trails with modeled erosion rates over 1 ton per acre/year are prioritized and restoration projects would be completed along with, if not prior to, projects in Phase I. The Revised CWE Restoration Program for the MPA 07 is now considered a design feature of the MPA 07.

The revised program is scheduled and prioritized according to Phase I, II, and III project implementation (see Chapter 2). Additionally, the Revised CWE Restoration Program will focus

on long-term maintenance of facility BMPs and road and ski trail projects with improved pre- and post-project implementation and effectiveness monitoring, as most large scale ski trail restoration projects have been completed under the 1997 CWE Restoration Program (see Appendix 3.1 B) and now require maintenance. The exception is Edgewood Bowl Restoration, which was scheduled for completion in 1998 under the CWE Restoration Program and is now scheduled for Phase I in conjunction with the proposed replacement of the North Bowl Chair Ski Lift.

The revised CWE Restoration Program described in Table 4 of Appendix 2 D would be implemented under the MPA 07, and is structured to further reduce the watershed percent ERAs and to reduce the potential for erosion or soil loss due to long term operation of existing and proposed facilities at Heavenly Mountain Resort. The Revised CWE Restoration Program is proposed for years 2006 though 2016 and is organized first according to Priority ski trail and road segments and then according to capital project implementation Phases I, II, or III and the capital project focus areas.

The percent ERAs for the MPA 07, after construction of all facilities, ski lifts, roads, and ski trails (use of appropriate BMPs during and after construction and installation of BMPs on all existing facilities assumed for Proposed Conditions with Full Mitigation Measures) are referenced to Table 3.1-17. These ERAs are representative of the 2004 Existing Conditions as revised by development of the entire MPA 07 with assumed BMPs applied to all impervious surfaces. Watershed ERAs may be further decreased through completion of the Revised CWE Restoration Program as outlined in Appendix 2 D. The overall objectives of this program are continued maintenance and application of improved and accepted specifications and seed mixtures for revegetation and restoration projects, and improved technology and engineering for road projects.

The Forest Service would be the lead and monitoring agency, and Heavenly would be the implementing entity. Timing for implementation of the mitigation measures of this program would begin upon adoption of MPA 07. Any facility, ski trail, or road segments identified for restoration in this program, but restored prior to adoption of the MPA 07, would be credited toward completion of this program.

Impacts Mitigated	06 EIR/EIS/EIS- WATER-1: Existing Percent ERA in Watersheds CA-6, NV-1 and NV-4 are above allowable TOCs 06 EIR/EIS/EIS- WATER 2: Peak and Total Runoff Increases Due to Vegetation Removal and Impervious Surface Construction 06 EIR/EIS/EIS- WATER-3: MPA 07 Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, Mott and Daggett Creeks 06 EIR/EIS/EIS- WATER-4: Phase I Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, and Daggett Creeks
Mitigation Level	Watershed sedimentation rates (ERAs) reduced to below the recommended TOC and to the levels shown in Table 3.1-17 (the "Proposed Action with full mitigations' column)
Lead Agency	Forest Service and TRPA
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	Forest Service
Timing	**Start:** Existing Mitigation modified for MPA 07; Continued implementation upon approval of the Heavenly Ski Resort MPA 07 as design features. Maintenance stage of the 1997 CWE Restoration Program is ongoing; the Revised CWE Restoration Program will begin upon approval of the MPA 07 **Complete:** Ongoing
2006 Status	The maintenance phase of the 1997 CWE Restoration Program is ongoing. All ski trail and road segment restoration projects are completed with the exception of Edgewood Bowl, which is scheduled for completion in Phase I in conjunction with North Bowl Ski Lift replacement. The Revised CWE Restoration Program is to be implemented as outlined in Table 4 of Appendix 2-D and amended by the Forest Service ATM (roads and hiking trails) and Environmental Monitoring Program.

Milestone/Product

CWE restoration projects are implemented annually based on a program of work that is prepared by Heavenly and Forest Service watershed specialists. The work is completed by Heavenly staff with ongoing oversight by the Forest Service. Temporary and permanent water quality BMPs are implemented as part of each construction project. The 1997 CWE Restoration Schedule is complete with the exception of Edgewood Bowl restoration, which must be completed towards fulfillment of mitigation measure 7.3-3.

7.5-2 Revised Collection/Monitoring Agreement - Heavenly & Forest Service

Description

MP 96 and MPA 07

The Revised Environmental Monitoring Program is attached in Appendix 3.1-D. The following sections include an outline of monitoring components and a summary of recommendations from the CMR (USFS 2004), TRPA, Lahontan, and West Yost and Associates.

Water Quality Monitoring

The monitoring requirements for Heavenly Valley Creek and Bijou Park Creek are defined in the Lahontan Order No. R6T-2003-0032 and are summarized in Table 3.1-12. The Monitoring Program has been adapted to satisfy the monitoring requirements of Lahontan Board Order No.R6T-2003-0032.

Since the adoption of the MP 96, NDEP and TRPA have developed more specific monitoring requirements for Heavenly and the creeks within Heavenly's boundaries on the Nevada-side. The Monitoring Program also includes monitoring to evaluate whether the water quality goals of NDEP and TRPA are achieved.

The present Monitoring Program includes water quality monitoring at stations HV-C1A, HV-C2, HV-C3, HV-C4, HV-H5, HV-E1, and HV-E2. Sampling for Heavenly Valley, Hidden Valley, and Edgewood Creeks occur monthly except during the spring snow melt period (approximately March 15 until summer baseflow condition is reached), when sampling occurs weekly. Results are reported to Heavenly, TRPA, and Lahontan in an annual Monitoring Program Report. Additionally, water quality sampling results are reported quarterly to Lahontan as required by Order No. R6T-2003-0032. The following constituents are monitored at all stations

unless specified otherwise below:

- Discharge;
- Specific Conductivity;
- Turbidity;
- Suspended Sediment;
- Total Nitrate/Nitrite as Nitrogen (Total NO2/NO3);
- Total Kjeldahl Nitrogen (TKN);
- Dissolved Orthophosphate and Total Phosphorus (DOP/SRP and Total P);
- Dissolved Phosphorus (DP- twice a year at HV-E1 and HV-E2)
- Chloride (HV-C1A , HV-C2, HV-C3 and HV-H5-quarterly; HV-C4-all samples)
- Total Iron (HV-C1A, HV-C2, HV-C3. HV-H5-quarterly; HV-C4-all samples)

Additional parameters for the HV-C4 monitoring site:

- Oil and Grease;
- Total Petroleum Hydrocarbons (as gasoline range);
- Ammonia (monthly and during snowmelt runoff);
- Total Lead (quarterly and during storm and snowmelt runoff).

The Environmental Monitoring Program has been updated to adapt the conclusions and recommendations made in the CMR (USFS 2004) through ongoing discussions between LTBMU and Heavenly. The Heavenly Mountain Resort Environmental Monitoring Program will continue to be funded by Heavenly but as of 2005 is implemented by ENTRIX and Resource Concepts, Inc. with oversight and management by the LTBMU Ecosystem Management Department. The water quality monitoring program will be reevaluated as part of the 2006 Comprehensive Monitoring Report and will include a comprehensive analysis of the existing water quality data at all the monitoring sites and recommendations regarding future monitoring to improve monitoring site locations, and sampling strategies. Additionally, Lahontan recommends analysis of the adequacy of monitoring utilized to evaluate progress towards meeting the Heavenly Valley Creek TMDL annual sediment loads. See Appendix 3.1-C for the outside party evaluation of the Updated Discharge Permit completed by West Yost and Associates in 2004.

When Ski Lift Z and/or Ski Trails Z1, Z2, Z3, Z4, Z5, Z6, Z7, and Z8, are proposed for construction, the Forest Service and NDEP will conduct a field visit to determine an appropriate site for the installation of a monitoring station on the South Fork of Daggett Creek. Following construction of the ski lift or ski trails, the monitoring station shall be installed to Forest Service and NDEP standards.

Effective Soil Cover Monitoring

The Monitoring Program of the MP 96 included soil cover monitoring with objectives of determining requirements and effectiveness of various soil covers under different slopes and conditions, the effectiveness of various plant species as ground covers, and to evaluate the effectiveness of past and current projects. As stated in the CMR (USFS 2004), Chapter 3, these objectives could only be answered qualitatively and some objectives could not be answered completely due to inadequacies in the monitoring program, field methodologies, database deficiencies, or insufficient data.

Monitoring from 1995-2002 was based on the use of fixed test plots and random transects occurring in each elevation range within Heavenly (<7,800 feet; 7,800 to 8,800 feet; >8,800 feet) and in representative riparian areas in each elevation zone. Results were reported annually in the Annual Environmental Monitoring Report. Fixed plots were discontinued in 2002 due to difficulty relocating the erosion pins and the fact that most erosion pins had been disturbed during ski area management activities. Random transects (also called effective soil cover surveys) should continue based on a pre and post project monitoring schematic and should incorporate less field intensive monitoring activities. Additionally, as stated on page 8.52 of the 96 Final EIR/EIS/EIS, upon 5 year evaluation of the Environmental Monitoring Program (which occurred through the CMR), if progress has not been adequately made towards restoration goals, a revised plan will be developed to achieve updated objectives. The following recommendations were made in the CMR (USFS 2004) for the effective soil cover component of the Monitoring Program:

- Discontinue Fixed Plot Monitoring
- Better record keeping is needed to document materials and structures installed, and seeding rates and mixes. This implementation monitoring will improve data collected

concerning plant succession, applied seed mixes, and effectiveness of various mitigation measures, to better address monitoring objectives.

- It is recommended that effective soil cover measurements at random transects, as well as estimates of soil loss volume, continue to be collected. These data should continue to be assessed at four year intervals. However, it is also recommended that the use of satellite imagery (IKONOS) or aerial photos be considered as the primary methods of collecting soil cover data for ski trails. This data could then be converted into GIS polygons for mapping and for input into process-based, hillslope model (such as WEPP). Transects would primarily be used to validate polygon designation of imaged data, and to document visible signs of erosion and erosion estimates. The definition of what should be counted as rock cover needs to be reexamined, due to a suspiciously high degree of variability in this measurement. A process for collecting duplicate data (i.e. repeat transects at very short time intervals, with different and same data collectors) should be developed to determine the magnitude of sampling error with these measurements.
- It is recommended that the monitoring plan be updated to consider utilizing a physically based, descriptive hillslope erosion model (such as WEPP, the Watershed Erosion Prediction Project), to estimate effectiveness of revegetation and grade control structures in controlling erosion on individual ski trails. Transect data would be used to provide inputs for the model, as well as some field data for validation of results.

Entrix, one of the consultants hired by Heavenly to continue implementation of the Heavenly monitoring program, has developed a revised monitoring strategy for this component, as outlined in Appendix 3.1-D.

BMP Effectiveness Monitoring

The Monitoring Program includes BMP effectiveness monitoring (BMPEP) to determine requirements and effectiveness of BMP planning, design, and implementation at existing facilities, restoration-sites, and new construction-sites to prevent soil erosion and protect water quality. Applications of BMPs at Heavenly include an array of structural and nonstructural measures that reduce soil movement and control

surface runoff. Many of these BMPs are required as part of the Revised Construction Erosion Reduction Program (CERP in Appendix 2-B). Some example measures include establishing vegetative cover, protecting stream environment zones and other sensitive areas, mulching the soil surface, installing infiltration and stabilization measures, and creating physical barriers between waterways and construction sites.

Monitoring is also conducted to determine the appropriate maintenance levels to preserve the integrity of the various BMPs. Monitoring of permanent and temporary BMPs occurs at existing facilities, restoration-sites, and new construction-sites. Results are reported annually the Annual Monitoring Report and are used to prioritize project sites for the following field season.

In the process of analyzing the data for the CMR report, which were collected on past BMP data forms, several significant flaws were identified that severely limit the ability to provide a comprehensive systematic evaluation for answering the two basic questions of whether BMPs were implemented correctly and whether they were effective in protecting water quality. These limitations included varying skill levels of data collection staff, sampling frequency inconsistencies, insufficient data storage and analysis process, and current strategy not well designed to inform decision making processes.

Feedback and results provided by the past monitoring has proven effective in facilitating information exchange between Heavenly and Forest Service staff during project implementation. This has improved mutual understanding of appropriate BMP application and effectiveness. While this has helped to provide information to managers, particularly in the short term, the current process has provided limited useful documentation to assess BMP implementation and effectiveness success. Qualitative observational narratives were found to be extremely valuable in providing information learned through staff experience; however quantitative data are needed to measure success.

The results of the evaluations conducted in 2004 utilizing new protocols are presented in the 2004 Annual Report for the Heavenly Environmental Monitoring Program (USFS 2004). Although the database for evaluating the data collected was not yet available for this report, a preliminary evaluation of the results was conducted by LTBMU monitoring staff. This evaluation concluded that 10 out of the 14 evaluations

conducted indicate problems with BMP implementation, and 2 of the 14 evaluations indicate a substantial level of concern related to BMP effectiveness. A consistent deficiency related to implementation was observed related to inadequate specifications for revegetation. As a result of this data, Heavenly is contracting with a consultant to revise the revegetation specifications for projects beginning in 2006, and will be implementing corrective actions in 2006 at the projects with observed deficiencies identified in the 2004 evaluations.

Under the Revised Environmental Monitoring Program, Resource Concepts Incorporated (RCI), the consultants hired by Heavenly to implement the BMP component of the Heavenly monitoring program, will be utilizing the now available database, and will use the new format described in Appendix 3.1-D for future BMP monitoring at the resort. The BMP Monitoring- Third Quarter Report submitted to Lahontan on October 31, 2005 is included in Appendix 3.1-E. The consultant will also provide feedback, including any suggested improvement to this process.

The CMR also made a number of recommendations related to the monitoring and evaluation of BMPs related to resort roads. There are currently over 30 miles of largely native surface roads at the resort. These recommendations are provided below.

- Develop and add a separate section to the Revised Environmental Monitoring Program for roads monitoring and revise roads monitoring to align with LTBMU Roads Monitoring Program
- A thorough evaluation of the degree of success of the decommissioning treatments and previously implemented road BMP upgrades should be a priority. The evaluation should follow the process established for the LTBMU Roads Program.
- The LTBMU Roads Program has developed a three-step process to assess both BMP effectiveness and potential water quality impacts to roads. The first step is to assess potential risk to water quality for individual road segments (based on a number of qualitative criteria related to road characteristics and proximity to waterbodies) and rate each segment as high, medium, or low risk. The second step is to utilize the BMPEP evaluation forms developed for the Region 5 BMPEP program, to assess BMP implementation

and effectiveness. The third step will be to utilize the WEPP model for roads to estimate the actual transport of runoff and sediment from specific road segments (including BMP applications). The WEPP model will be applied to a representative sample of road segments representing a variety of road characteristics and risk categories, to estimate loading for the entire road network, and to provide an estimate of site-specific BMP effectiveness. The roads monitoring program at Heavenly should be revised to more closely follow the process described above, to provide more meaningful data related to road BMP effectiveness and the potential risk to water quality from roads.

- All decommissioned roads should be evaluated to determine if natural contours were restored, all compacted surfaces were eliminated, appropriate drainage structures are functioning, and adequate soil cover is in place. Assessments of water quality risk, evaluations of decommissioning and BMP upgrade success, and recommendations for future decommissioning and BMP upgrade measures should be conducted in coordination with the Forest Service

Riparian Condition Monitoring

The Monitoring Program of the MPA 07 will include riparian condition monitoring to evaluate the status and trend of stream channel and riparian condition at Heavenly Mountain Resort. In addition, this monitoring will be used to determine the effect of Heavenly Mountain Resort operations on the geomorphology, habitat, and riparian condition of potentially-affected streams. As needed, the results of the monitoring will be used to modify management practices.

The evaluation of monitoring data will include the following components:

- Evaluate sediment sources and conditions using the monitoring data to the extent feasible.
- Characterize and evaluate geomorphic characteristics, channel habitat condition, and stream channel stability.
- Determine the effect of Heavenly Mountain Resort operations on trends observed in channel characteristics listed above.
- Determine if measured variability is within the natural range

of unimpaired watersheds, by comparing to data from undisturbed watersheds.

- If applicable, identify potential effects of other disturbances or naturally unstable geomorphic systems.
- Identify the need for remediation or restoration measures.

The use of Pfankuch protocols for evaluation of stream channel conditions has been discontinued based on recommendations resulting from the development of the LTBMU Adaptive Management Monitoring Program for Channel Condition. The Pfankuch protocol is no longer being utilized by federal land management agencies and has been replaced by SCI methodology. Full SCI monitoring will occur every three to five years

A bioassessment component was added to the Heavenly monitoring program in 2002. The Forest Service-Region 5 protocol for macroinvertbrate sampling was implemented in 2002 and 2003 on both Heavenly and Hidden Creek, and in scheduled to be repeated at two year intervals. The next scheduled interval is 2005 and 2006. Data from the 2002/2003 has not yet been fully analyzed, and should be included in the 2006 Comprehensive Monitoring Report.

In addition to the currently established SCI reaches the, Entrix will be recommending the addition of new reaches in Daggett, Mott, and Edgewood Creek to continue long term evaluation of channel condition in these streams. SCI surveys will also be utilized to monitor effects of channel restoration projects at the resort, including the Edgewood Creek stream restoration project. The Edgewood Creek Watershed Assessment and Restoration Plan found in Appendix 2-F outlines a recommended monitoring approach and success criteria.

Condition and Trend Monitoring

The Monitoring Program includes condition and trend monitoring to determine the overall condition of the watersheds, trends in the conditions of the watersheds, and if management activities are improving the watershed conditions. Data were collected from existing facilities, roads, and ski trails in each of the watersheds and watersheds were rated for condition and trend according to criteria specified in Chapter 6 of the CMR (USFS 2004). Results were reported in the Annual Monitoring Report and the Condition and Trend Summary table for watersheds at Heavenly Mountain Resort are presented in

Table 3.1-13.

The revised approach for evaluating future watershed condition and trend is outlined in the Revised Environmental Monitoring Program in Appendix 3.1-D.

In summary, the Heavenly Mountain Resort Environmental Monitoring Program should continue to be revised and organized to adequately meet the monitoring and reporting requirements set forth in all regulatory documents and the Mitigation and Monitoring Program of the MPA 07. These needs and requirements include:

- Updated Discharge Permit (Water Quality Monitoring of Ski Area, Water Quality Monitoring at California Base Area, Erosion control and Facilities Maintenance, Development of an Annual Work List, Snow Conditioning and Snowmaking Enhancement, Deicers and Abrasive Application and Recovery, Heavenly Valley Creek TMDL, Mitigation monitoring);
- Revised CWE Restoration Program (Project BMP Implementation Documentation with Performance-based Criteria need to be improved; Updated Erosion Control Plan and Revegetation Specifications necessary)- Mitigations 7.4-9 and 7.5-1;
- Revised Construction Erosion Reduction Program- Mitigation 7.4-1;
- SEZ Restoration Projects (Project Implementation and Performance-base Criteria need to be established)- Mitigations 7.4-3 and 7.4-4; and
- Easy Street Run Hazard Reduction Project– Mitigating prescriptions for ski trail implementation were demonstrated on Easy Street (Ski Run HH-1). The Forest Service recommends the use of the Watershed Erosion Prediction Program (WEPP), a model capable of predicting site-specific hillslope processes. Performance-based and process-based monitoring objectives should be decided upon by TRPA, the Forest Service and Lahontan in order to adequately judge success of the demonstration project(s) and enable the adaptive management process to contribute to improvement of prescriptions for future projects, which include proposed and selected existing ski trails). The ESRHRP Monitoring Report is included in Appendix 2-C and results and summarized below.

Impacts Mitigated	06 EIR/EIS/EIS- WATER-1: Existing Percent ERA in Watersheds CA-6, NV-1 and NV-4 are above allowable TOCs 06 EIR/EIS/EIS- WATER 2: Peak and Total Runoff Increases Due to Vegetation Removal and Impervious Surface Construction 06 EIR/EIS/EIS- WATER-3: MPA 07 Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, Mott and Daggett Creeks 06 EIR/EIS/EIS- WATER-4: Phase I Ski Area Construction and Operation May Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley, Bijou Park, Edgewood, and Daggett Creeks
Mitigation Level	Compliance with state and regional water quality standards and allowable watershed TOCs.
Lead Agency	Forest Service
Implementing Agency	Forest Service and Heavenly Mountain Resort
Monitoring Agency	Forest Service
Timing	**Start:** January 1995. **Complete:** Ongoing under agreement between Heavenly and Forest Service and Heavenly and third party contractor
2006 Status	Ongoing agreement in place between Heavenly, Forest Service and third party contractors.
Milestone/Product	A five-year Collection Agreement is in place. Annual budgets necessary to fund the agreement (Forest Service and contractor costs) are developed and incorporated into the Collection Agreement as annual amendments. The Forest Service scope of work shifted in 2005 from complete monitoring and reporting to oversight of an outside contractor (considered in separate contracts). The 2005 budget amendment to the Collection Agreement reflects this change.

7.5-3 Maintain Water Rights Balance

Description

MP 96

Water Rights/Water Use Monitoring Program

To ensure that water from Heavenly's various supplies is used

in appropriate quantities and locations, a Water Use/Water Rights monitoring program would be implemented. The goal of the program would be to measure or estimate the quantity of water supplied by each source and where the water is used. This program is used as a mitigation measure in several of the impacts below.

The existing gauging stations (described above) would be upgraded to provide continuous flow measurement. The Daggett Creek Station will be relocated to a site closer to the Heavenly Mountain Resort boundary to isolate the effects of the Heavenly Mountain Resort and eliminate effects from Kingsbury Grade. Existing and new facilities would be installed to measure all surface water and groundwater diversions. Additionally, the quantities of water purchased from STPUD and KGID would be measured.

Descriptions of proposed new flow measurement facilities are presented below. Locations of these facilities are presented in 95 Draft EIR/EIS/EIS Figure 4.3-1.

- East Peak Lake Release - An instream flow gauge would be installed below East Peak Lake to measure releases from the Reservoir.

- Lower Crossover Ski Trail- A 6-inch meter would be installed at Lower Crossover Ski Trail. This meter would measure total and instantaneous flow into and out of the Lake Tahoe Basin within Nevada. This meter would have electronics for remote display and computer connection.

- Top of North Bowl Ski Trail - A 12-inch meter would be installed at the top of North Bowl Ski Trail. This meter would measure total and instantaneous flow into and out of the Lake Tahoe Basin within Nevada. This meter would have electronics for remote display and computer connection.

- Men's Down Hill Above 075 Ski Trail - A 12-inch meter would be installed at Men's Down Hill Ski Trail above the 075 Ski Trail. This meter would measure total and instantaneous flow into and out of the Lake Tahoe Basin within Nevada. This meter would have electronics for remote display and computer connection.

- Upper Lower Way Home Ski Trail - A 6-inch meter would be installed at Upper Lower Way Home Ski Trail. This

meter would measure total and instantaneous flow into and out of the Lake Tahoe Basin within Nevada. This meter would have electronics for remote display and computer connection.

MPA 07 - Additional Monitoring Facilities:

- Meters should be installed to monitor the monthly pumpage from individual wells used for snowmaking, including both the existing and proposed wells. Additionally, the monitoring should include monthly measurements of groundwater levels in the existing and proposed wells used for snowmaking. Finally, extended-period aquifer tests should be conducted in each of the proposed wells used for snowmaking.

With the existing and proposed flow monitoring facilities, it would be possible to determine the quantity of water supplied to Heavenly from each source, used in each state, and used in and out of the Lake Tahoe Basin. By knowing the use restrictions on water from each source, the maximum water use permitted in any area would be known, and thus water uses could be limited to the maximum permitted. This mitigation measure would also provide data necessary to ensure attainment of TRPA's goal to reduce and eliminate inter-basin transfers.

Heavenly would prepare an annual report indicating the quantity of water used from each of its sources, the maximum entitlement from each of its sources, and the amount of water consumed by each of Heavenly's uses, including snowmaking in and out of the Tahoe Basin in both California and Nevada. Additionally, flow records for each of the creek monitoring stations, estimated flow into East Peak Lake and releases from East Peak Lake would be included. This report would be submitted to the Forest Service for review and concurrence. If the Forest Service finds that Heavenly is out of compliance with any terms of their water rights, Heavenly would, in the future, modify their operating procedures to comply with the water right requirements.

Impacts Mitigated

96 Final EIR/EIS/EIS: Water diversions from Heavenly Valley Creek may result in violations of water right requirements.

96 Final EIR/EIS/EIS: Noncompliance with Heavenly water entitlements.

96 Final EIR/EIS/EIS: Future increased creek water diversions from Heavenly Valley Creek may result in violation of water right requirements.

96 Final EIR/EIS/EIS: Future increased use of water by Heavenly may not comply with the water entitlements.

06 EIR/EIS/EIS- WATER USE-1: Potential for Changes in Streamflow (Daggett, Mott and Bijou Park Creeks) and Lake Level (East Peak Lake) Effects Based upon Proposed Groundwater Pumping

06 EIR/EIS/EIS- WATER USE-2: Potential for Changes in Groundwater Levels Based upon Proposed Groundwater Pumping

Mitigation Level Compliance with water rights restrictions.

Lead Agency State of Nevada and Forest Service

Implementing Agency Heavenly Mountain Resort

Monitoring Agency State of Nevada and Forest Service

Timing

Start: Upon approval of the Heavenly Mountain Resort MPA 07.

Complete: Ongoing.

2006 Status Ongoing; all meters needed to monitor water use and balance conditions are in place.

Milestone/Product An annual water use/water balance report has been prepared for the 2003/04 season. It is included in the Appendix. Previous year's reports have not been prepared because the monitoring system was not completely installed due to a lack of capital funds made available by Heavenly's previous owner. Under Vail's ownership, Heavenly has taken corrective measures and has accelerated completion of outstanding commitments such as this has occurred.

7.5-4 Maintain Water Flows in Heavenly Valley Creek

Description

MP 96

Implementation of the following mitigation measures will

reduce the impact to less than significant. The Forest Service will be the lead agency and monitoring agency and will review the annual water use/water rights report. Heavenly will be the implementing entity. Mitigations will be implemented upon adoption of the Heavenly Mountain Resort MP 96 and continued indefinitely.

1. Heavenly shall implement the Water Rights/Water Use Monitoring Program so that it can be determined how much water is used in California and Nevada both in- and out-of-basin.
2. Heavenly shall, using the upgraded monitoring station at Heavenly Valley Creek station HV-C1A (upstream of California Reservoir), continue to monitor the inflow to the Reservoir, so that the required release rates are known.
3. Heavenly shall operate the California Reservoir such that the minimum release requirements are complied with.
4. Heavenly shall document compliance in the annual water use/water rights report (described above), to include flow records at HV-C1A, California Reservoir release records and flow records at HV-C2.
5. Heavenly shall, if water use does not conform with water rights and the Reservoir operating permit, modify future operation of the Reservoir to comply with the water right and operating permit restrictions.

Impacts Mitigated

96 Final EIR/EIS/EIS: Water diversions from Heavenly Valley Creek may result in violations of water right requirements

96 Final EIR/EIS/EIS: Future increased creek water diversions from Heavenly Valley Creek may result in violation of water right requirements.

Mitigation Level

Compliance with water right requirements for Heavenly Valley Creek.

Lead Agency

TRPA and Forest Service

Implementing Agency

Heavenly Mountain Resort

Monitoring Agency

Forest Service

Timing

Start: Upgraded monitoring station shall be installed within 90 days after approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status	Ongoing. The upgraded monitoring station was funded in 2004 by Vail Resorts. Data is now being recorded. Annual water use reports are being prepared.
Milestone/Product	Flows into and out of the California reservoir are maintained in balance on a continual basis to ensure that water rights are not exceeded.

7.5-5 Maintain Summertime Flows in Heavenly Valley Creek

Description

MP 96

Implementation of the following mitigation measures would reduce the impact to less than significant. TRPA will be the lead agency and the monitoring agency. Heavenly will be the implementing entity. Mitigations shall be implemented upon adoption of the Heavenly Mountain Resort MP 96 and continued indefinitely.

1. Heavenly shall obtain water for summertime irrigation from sources other than Heavenly Valley Creek.

2. Heavenly shall manage the California Reservoir and Dam such that the Dam releases equal the inflow to the Reservoir during the summer such that instream flows are not decreased.

Impacts Mitigated	96 Final EIR/EIS/EIS: Diversion of creek water from Heavenly Valley Creek for summer irrigation of revegetation/restoration sites may constitute a nonattainment of the TRPA fisheries threshold concerning instream flows.	
Mitigation Level	Compliance with TRPA instream flow threshold for Heavenly Valley Creek.	
Lead Agency	Forest Service and TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	Forest Service	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MP 96.
	Complete:	Ongoing.
2006 Status	Ongoing	

Milestone/Product

No additional diversions from Heavenly Valley Creek have occurred since the adoption of the MP 96. Summer irrigation water is purchased from outside sources.

7.5-6 Maintain Water Flows in Daggett Creek

Description

MP 96

Implementation of the following mitigation measures would reduce the impact to less than significant. The Forest Service would be the lead agency and monitoring agency and would review the annual report. Heavenly would be the implementing entity. All mitigations would be implemented upon adoption of the Heavenly Mountain Resort MP 96 and continued indefinitely.

1. Heavenly shall install a flow gauge to measure the release from East Peak Lake.

2. Heavenly shall estimate flow into East Peak Lake based upon the previous months' total precipitation and then calculate the required release (as done above for average, wet, and dry years in 95 Draft EIR/EIS/EIS Table 4.3-7).

3. Heavenly shall operate East Peak Lake Dam to satisfy the calculated release rates, the requirements of water right permit 50525, and downstream claimants needs. No more than 0.5 cfs shall be diverted between November 2 and March 15, and no diversions shall be made from March 16 through November 1. However, releases are not required to exceed the estimated Daggett Creek inflow even if downstream claimants' needs are not satisfied.

4. Heavenly shall document compliance in an annual water use/water rights report, to include records of estimated flow into and release from East Peak Lake.

5. Heavenly shall, if water use does not conform with water right restrictions, modify operations to conform with the water right restrictions or purchase decreed downstream water rights to cover any diversions above those permitted by Water Right 50525.

Impacts Mitigated	96 Final EIR/EIS/EIS: Diversion of creek water from Daggett Creek (outside the Lake Tahoe Basin) may result in violations of water right requirements. 96 Final EIR/EIS/EIS: Increased creek water diversions from Daggett Creek may result in violation of water right requirements.	
Mitigation Level	Compliance with water right requirements for Daggett Creek.	
Lead Agency	State of Nevada	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	Forest Service	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MP 96.
	Complete:	Ongoing.
2006 Status	Ongoing	
Milestone/Product	No additional diversions from Daggett Creek have occurred since the adoption of the MP 96. The dam is operated to satisfy the usage rates that are established in the water rights.	

7.5-7 Maintain Compliance with Water Entitlements

Description

MP 96

Implementation of the following mitigations would reduce the impact to less than significant. Forest Service would be the lead and monitoring agency and would review the annual report; Heavenly would be the implementing entity. Mitigations should be implemented upon approval of this document and continued indefinitely.

1. Heavenly shall limit water use to conform with their approved water rights including limiting water use to quantities available under approved water rights and restricting uses to proper POUs. For water purchased from STPUD and KGID, Heavenly shall comply with water rights restrictions associated with the purchased water.
2. Heavenly shall implement the Water Rights/Water Use Monitoring Program which will enable Heavenly to determine the quantity and location of water use, and thus to determine if Heavenly's water right requirements are satisfied.

3. Heavenly shall annually determine the maximum permissible water uses for each location (California, Nevada, in-region, out-of-region) based upon the quantities supplied by each source and the current water use restrictions of each source.
4. Heavenly shall annually prepare a report documenting that water uses conform to water rights restrictions.
5. Heavenly shall, if water use for the previous year does not conform with water rights, modify future water use operations to conform with the approved water rights.
6. Heavenly shall obtain approval of the California (App. Nos. 30227 and 80228) and Nevada (No. 58345) water rights application to use 594 and 150 afa of Lake Tahoe water in California and Nevada in the Lake Tahoe Basin for snowmaking. Also, Heavenly shall apply for and obtain approval of the changes to existing Nevada water rights POUs discussed above and shown in EIR/EIS/EIS Figure 4.3-3. If approval of these applications is not obtained, Heavenly shall currently and at all time in the future limit water use to conform to their approved water rights.
7. Heavenly shall, if Heavenly's on-site water supplies are insufficient to satisfy its water demands, purchase additional water from STPUD and KGID. For water purchased from STPUD and KGID, Heavenly shall use the water in-basin and comply with water rights restrictions associated with the purchased water. Additionally, for water use out-of-basin and in Nevada, Heavenly shall develop new water supplies (drill additional wells) such that they can fully utilize their approved water rights.

Impacts Mitigated

96 Final EIR/EIS/EIS: Noncompliance with Heavenly water entitlements.

96 Final EIR/EIS/EIS: Future increased use of water by Heavenly may not comply with the water entitlements.

Mitigation Level Compliance with Heavenly water entitlements.

Lead Agency Forest Service and TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency Forest Service

Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MP 96.
	Complete:	Ongoing.
2006 Status	Ongoing	
Milestone/Product	Consumptive water uses at Heavenly are in compliance with approved water rights. Purchases of water from outside sources for use at Heavenly are within the approved rights, if any, that are held by the water provider. The East Peak Reservoir is operated to satisfy the usage rates that are established in the water rights. Heavenly has gained approval and begun the investigation process to develop additional water sources outside the Lake Tahoe Basin in compliance with the existing water rights.	

7.5-8 Reduce Vehicle Emissions

Description

MP 96 and MPA 07

To reduce the potential impact to ambient CO concentrations, Heavenly shall work with responsible agencies to implement a mitigation package to ensure construction projects do not significantly increase ambient CO concentrations. The mitigation measure for this impact would require participation of many different emission contributors. These sources include vehicular traffic, home fire places, industrial sources, and other combustion engines.

The combination of mitigation measures selected would depend on three key factors:

- the Alternative selected for implementation
- the phasing of the Alternative
- the level of mitigation desired.

All three of these factors must be addressed by Heavenly and other lead and responsible agencies before a final mitigation package can be prepared and implemented. The final mitigation package must reduce CO emissions associated with the operation of the Heavenly Mountain Resort to help attain and maintain the CO standards within the Lake Tahoe Air Basin.

Heavenly has implemented the following mitigation measures as required in the MP 96 Mitigation and Monitoring Program:

Developed additional control technologies (e.g., low emission vehicles) on mobile and stationary diesel-powered equipment as recommended in the 96 Final EIR/EIS/EIS.

Expanded the Heavenly Shuttle Bus System – provides free shuttle service between all Heavenly Base areas (including the gondola) and all area lodging facilities. A free employee shuttle was also added.

Improved Existing Transit System – free rides for Heavenly employees on BlueGo fixed route system, contributed to start-up and operation of the CTS (BlueGo) public transit system.

Improved Parking Management to Maximize Shuttle Bus Usage – parking fee for Heavenly Village structure, parking management implemented in the surrounding neighborhoods and at the adjacent Town Center.

Low Emission Vehicles for Use as Buses and Shuttles – Heavenly is replacing several diesel shuttles with CNG shuttles and plans on continuing to incorporate alternatively fueled vehicles into the fleet as vehicles are retired.

In addition to the measures implemented to date, the following mitigation measures were recommended in the 96 Final EIR/EIS/EIS to address cumulative CO conditions. Due to the recent exceedance of CA CO standards, these mitigation measures should also be considered to reduce near-term CO effects of the MPA 07.

Heavenly shall require that construction equipment operating procedures (equipment maintenance and limitations on equipment idle time) be followed by contractors, that low-sulfur diesel fuel is used, and that low NOx emitting engines are used in construction equipment. Heavenly must follow dust control measures during construction. Best available control technology (BACT) shall be used for all construction equipment.

Heavenly shall consider offering skiers the option of purchasing morning as well as afternoon half-day ski lift tickets. This would reduce peak hour parking lot traffic by shifting some of the half-day skier exit traffic to the midday period.

Impacts Mitigated	96 Final EIR/EIS/EIS: Cumulative change in ambient carbon monoxide concentrations. 96 Final EIR/EIS/EIS: Cumulative change in ambient fine particulate (PM_{10}) concentrations. 06 EIR/EIS/EIS-AQ-1: Change in Ambient Carbon Monoxide Concentrations	
Mitigation Level	Reduce carbon monoxide and fine particulate emissions from construction equipment and vehicular traffic.	
Lead Agency	El Dorado County, TRPA and TTD	
Implementing Agency	Heavenly Mountain Resort; City of South Lake Tahoe; Hotels; Casinos	
Monitoring Agency	El Dorado County and TRPA	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MPA 07.
	Complete:	Ongoing.
2006 Status	Ongoing	

Milestone/Product

Heavenly utilizes many of the measures listed above to reduce vehicle emissions. These include: development of additional control technologies (i.e., low emission vehicles) on mobile and stationary diesel-powered equipment, expanding the shuttle bus fleet to serve the gondola area and improve headways, adding employee shuttles, free rides on the BlueGo fixed route system for all Heavenly employees, and contributing to the start-up and operation of the CTS (BlueGo) public transit system. Heavenly is presently purchasing new low-emission shuttle buses to replace older diesel-powered buses. Conversion to low emission will continue until the entire fleet is comprised of low or ultra-low emission vehicles. Heavenly's goal is to incorporate alternative fueled vehicles as on-going fleet replacement occurs. Paid parking has been implemented at the Heavenly Village. Parking management has been implemented in the surrounding neighborhoods and at the adjacent Town Center. Ridership on Heavenly's free skier and employee shuttle system has grown significantly since the adoption of the program. Ridership numbers are shown below:

Year	Passengers
1998/99	427,209
1999/00	426,704
2000/01	421,186
2001/02	391,936
2002/03	395,157
* 2003/04	488,154
2004/05	442,145
2005/06	454,397

* includes operation of employee shuttles by contractor

7.5-9 Snow Grooming Noise Mitigation Methods

Description

MP 96

In order to reduce this impact to less than significant, Heavenly shall not operate snow-grooming equipment as outlined in the Affected Environment Section within 85 feet of a PAS boundary. Heavenly could modify snow-grooming methods and continue to groom as long as they meet the PAS

	CNEL noise standards.	
Impacts Mitigated	96 Final EIR/EIS/EIS: Potential exceedance of TRPA PAS noise standards during the use of snow grooming equipment.	
Mitigation Level	TRPA Plan Area Statement CNEL levels.	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MP 96.
	Complete:	Ongoing.
2006 Status	Ongoing	
Milestone/Product	Snow grooming machines are not operated within 85 feet of PAS boundaries. Portions of the fleet are replaced continually with newer technology equipment.	

7.5-10 Snowmobile Noise Mitigation Methods

Description	MP 96 In order to reduce this impact to less than significant, Heavenly shall maintain their snowmobiles in optimum operating conditions to comply with TRPA single event noise standards and will not allow concentrated activity near adjacent PAS boundaries. In addition, Heavenly shall continue to replace older model snowmobiles with new four-stroke engine models, which are quieter than older models.	
Impacts Mitigated	96 Final EIR/EIS/EIS: Potential exceedance of TRPA single event and PAS noise standards during the use of snowmobiles.	
Mitigation Level	TRPA Plan Area Statement CNEL levels.	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MP 96.
	Complete:	Ongoing.
2006 Status	Ongoing	

Milestone/Product Snowmobile equipment is maintained and operated within 85 feet of PAS boundaries. Portions of the fleet are replaced continually with new equipment.

7.5-11 Snow Removal Noise Mitigation Methods

Description

MP 96

In order to mitigate this impact to less than significant levels, Heavenly must reduce the CNEL values to 1982 levels or the PAS noise standards, whichever is less, at the California and Boulder base areas. The 1982 CNEL value is the same as the existing and predicted MP 96 values. These values can be reduced to the PAS CNEL noise standard by minimizing nighttime snow removal operations, and by constructing noise barriers along the perimeters of the parking lots. The noise barriers may be constructed from the snow removed from the parking lot. In later season operations during snowmelt, a barrier of snow may not be practical. In this situation, snow removal operations should occur during daytime or evening hours only. At the California Base, the upper parking lot should be cleared first, and clearing of the lower parking lot should be delayed until daytime hours whenever possible. These measures will provide up to a 15 to 20 dB CNEL noise reduction. The reduction of CNEL levels shall be reevaluated annually to ensure that Heavenly is implementing all possible snow removal measures available to attain the PAS CNEL noise standards.

Impacts Mitigated 96 Final EIR/EIS/EIS: Exceedance of TRPA PAS noise standards during snow removal at the California and Boulder base areas in the absence of snowmaking noise.

Mitigation Level TRPA Plan Area Statement CNEL levels.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing

Start: Upon approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status Ongoing

Milestone/Product Snow removal equipment is operated consistent with the measures listed above.

7.5-12 Snowmaking Noise Mitigation Methods for Base Areas

Description

MP 96

To reduce the impact to a less than significant level, Heavenly must reduce noise levels to 1982 values or the PAS noise standards, whichever is less. The reduction of CNEL levels shall be reevaluated annually to ensure that Heavenly is implementing all possible snowmaking measures available to attain the PAS CNEL noise standards.

There are numerous measures available, that when used in combination, would reduce the CNEL values to below 1982 levels or the PAS noise standards, whichever is less. The mitigation and monitoring plan shall specify which measures will be used to meet the PAS CNEL noise standards. These measures include the following, which are listed in order of priority:

1. Use of fans in place of air/water nozzles or air/water guns which are low noise.
2. Re-direction of nozzles and fans to minimize noise exposures at PAS boundaries.
3. Reduction in the numbers of nozzles and/or fans.
4. Use of setbacks to reduce noise exposures at PAS boundaries.
5. Use of noise reduction housings for air/water nozzles.
6. Use of barriers at low-mounted air/water nozzles.
7. Reduction in snowmaking activities at nighttime.
8. Sponsor research into reducing noise produced by snowmaking. This may include support of industry-wide research activities, specific studies concerning nozzle design sponsored directly by Heavenly, and the study of alternatives in placement of guns and fans at Heavenly.

At the Stagecoach and Boulder Bases, Heavenly will strive to replace all air/water nozzles with fans. This will reduce CNEL

values significantly due to the lower noise emissions of each source, as well as a reduction in the number of sources (one fan can replace three or four air/water nozzles). Fans would be placed to provide adequate coverage, and, where possible, would be oriented to reduce noise exposures at PAS boundaries. Using the first three items of the priority list would achieve compliance with the PAS standards. The schedule for Stagecoach would be to achieve a 20 dB reduction in CNEL exposures at the PAS boundaries in Year 1999. At Boulder, a 25 dB reduction would be the goal for Year 2001.

At the California Base, it is anticipated that the entire list of mitigation measures would be pursued. The schedule for mitigation monitoring is to achieve a 10 dB reduction by Year 1999, a 15 dB reduction by Year 2001, with a goal of a 35 dB reduction by Year 2006. It should be noted that the above reductions would be achieved at a reference location near Saddle and Keller Roads, and that there would be a trade-off in that noise levels would be increased by new sources in the vicinity of Ski Lifts K, L, and M (only one of which is likely to be installed).

The noise monitoring program should include:

1. Noise measurements to verify CNEL or short-term noise levels:

    a) At remote PAS boundaries affected by snowmaking (such as the Edgewood Bowl area);

    b) At the California Base when studying alternatives in replacements of air/water nozzles with fans, re-direction of nozzles, use of housings and barriers, etc.;

    c) At the Stagecoach and Boulder Base areas after fans have been installed;

    d) At the California Base near Ski Lifts K, L, and M after ski lifts have been installed;

    e) As required in connection with Heavenly's nozzle noise reduction research efforts; and

    f) As required for concerts.

2. Installation of a long-term noise monitoring station at the California Base near Saddle and Keller Roads. This site could be set up before snowmaking begins in the late

Fall, and left in operation over the Winter to document noise levels from snowmaking and snow removal.

Impacts Mitigated

96 Final EIR/EIS/EIS: Exceedance of TRPA PAS noise standards during the use of snowmaking equipment at the California base area.

96 Final EIR/EIS/EIS: Exceedance of TRPA PAS noise standards during the use of snowmaking equipment at the Boulder base area.

96 Final EIR/EIS/EIS: Exceedance of TRPA PAS noise standards during the use of snowmaking equipment at the Stagecoach base area.

Mitigation Level TRPA Plan Area Statement CNEL levels.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing

Start: Upon approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status Ongoing, compliance with the schedule shown above has not occurred.

Milestone/Product

Heavenly has installed the long-term noise monitoring station near the intersection of Keller and Saddle Roads. Although it picks up other noise sources such as vehicle traffic, it has provided data for annual snowmaking noise reports. Annual noise monitoring occurs from November 1 through March 31 of the following year. It has occurred since master plan adoption. This coincides with Heavenly's snowmaking operations period. Heavenly has replaced the majority of snowmaking guns along the base of California with fan guns. Redirecting some of the guns has also reduced noise values.

Full compliance with the attainment schedule established in the MP 96 was not achieved due primarily to a lack of capital funds made available by Heavenly's previous owner. Under Vail's ownership, Heavenly has taken corrective action and has accelerated installation of the quiet fan gun technology. Heavenly has approval to replace nearly the entire array of guns located on the Face and at the California Base Area with fan guns. That replacement will occur over the next two years. Noise measurements taken during the 2003/04-ski season

following partial fan gun replacement have shown substantial reduction in CNEL values. The 2003/2004 snowmaking noise monitoring report is included in the Appendix. It is anticipated that the CNEL noise standards will be achieved following the complete replacement of the face area with fan guns. The replacement program will then move to the Stagecoach and Boulder Base Areas on the Nevada side so that all noise sensitive boundaries are retrofitted with fan gun technology within five years. A revised attainment schedule will be developed as a part of the MPA 07.

7.5-13 Snowmaking Noise Mitigation Methods for Upper Mountain Areas

Description

MP 96

To reduce the impact to a less than significant level, Heavenly must reduce existing noise levels where new facilities would result in new Plan Area noise impacts. The reduction of existing CNEL levels shall be reevaluated annually to ensure that Heavenly is implementing all possible snowmaking measures available to work towards the attainment of the PAS CNEL noise standards.

In order to reduce the existing CNEL values at adjacent PAS boundaries, Heavenly shall use fan guns or other similar noise reduction measures for all new snowmaking areas. In addition, where new snowmaking is placed adjacent to existing ski trails with snowmaking, Heavenly shall convert the existing air/water snowmaking nozzles with fan guns or use other similar noise reduction measures to maintain or reduce existing noise levels in that area. This is expected to provide about a 20 dB reduction in CNEL values.

Based upon the reduction of noise levels at existing snowmaking areas, this impact is considered to be less than significant.

Impacts Mitigated 96 Final EIR/EIS/EIS: Exceedance of TRPA PAS noise standards during the use of snowmaking equipment at upper mountain areas.

Mitigation Level TRPA Plan Area Statement CNEL levels.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MP 96.
	Complete:	Ongoing.
2006 Status	Ongoing	
Milestone/Product	Snowmaking noise from the upper mountain areas is monitored on a regular basis. Individual project analyses have not determined that exceedance of the noise standards will occur from the installation of new snowmaking facilities. New snowmaking installations are fan guns.	

7.5-14 (NOISE-1) Limit hours of Snowmaking operation and use fan gun technology for the proposed Skyline Trail Snowmaking

Description

MPA 07

In the vicinity of Skyline Trail, the current snowmaking CNEL is approximately 78 dB based on existing snowmaking operations. As a means of minimizing CNEL noise impacts, Heavenly shall limit snowmaking to daytime hours along the Skyline Trail.

In addition, as required in mitigation measure 7.5-13 above, Heavenly shall replace existing air-water nozzles with fan guns on adjacent ski trails located under the top portion of the Dipper Express and Sky Express Ski Lifts (e.g., Ski Trails I3 – Upper Ellie's, V4 – Big Dipper, and V8 – Orion's). Implementation of this measure would result in overall reduction in existing snowmaking CNEL noise levels during snowmaking operations at the PAS 095 boundary. Based on noise measurements conducted in February 2005 at the PAS 095 boundary, and above the existing trail, the operation of the four existing air-water Ratnik guns resulted in measured noise levels of 76 dBA Leq. Therefore, the predicted noise levels for the proposed fan guns are at least 5 to 10 dB less than the existing snowmaking operations. The resulting CNEL at the PAS 095 boundary using the recommended mitigation measures would result in a CNEL of approximately 60 dB. This reduction in noise compared to existing conditions is consistent with the existing MP 96 MMP which calls for Heavenly to provide an overall reduction in snowmaking noise through the use of new snowmaking technology.

Impacts Mitigated

06 EIR/EIS/EIS-NOISE-1: Exceedance of TRPA PAS Noise Standards During the Use of Snowmaking Equipment

Mitigation Level	Compliance with TRPA PAS noise standards	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MPA 07.
	Complete:	Ongoing.
2006 Status	Ongoing	

7.5-15 Rock Busting Noise Mitigation Methods

Description

MP 96 and MPA 07

In order to mitigate the impact to a less than significant level, Heavenly must control the number, size and location of "rock busting" blasts in order to meet PAS noise standards. In order to mitigate the impact to a less than significant level, Heavenly must control the number, size and location of "rock busting" blasts in order to meet PAS noise standards.

1. Rock busting operations noise impacts have been thoroughly analyzed in the 95 Draft EIR/EIS/EIS Noise Section 4.6, and are described above. It is expected that additional rock busting operations will occur as a part of the continued development of the existing MP 96. In order to reduce this impact to less than significant, existing mitigation measures for rock busting (7.5-14) shall continue to be implemented to reduce on mountain rock busting noise.
2. The noise levels vary based upon shot size and shot timing. Based upon the analysis in the 95 Draft EIR/EIS/EIS, locations of the 50 dB and 55 dB C-weighted CNEL contours are about 2,900 feet and 1,800 feet, respectively, from the blast site. In order to reduce this impact to less than significant, existing mitigation measures for rock busting (7.5-14) shall continue to be implemented to reduce on mountain rock busting noise.

It is expected that additional rock busting operations will occur as a part of the development included in the MPA 07. In order to reduce this impact to less than significant, existing mitigation measures for rock busting (7.5-14) shall continue

	to be implemented to reduce on mountain rock busting noise.	
Impacts Mitigated	96 Final EIR/EIS/EIS - Potential exceedance of TRPA PAS noise standards during summer "rock busting".	
	06 EIR/EIS/EIS – Potential Exceedance of TRPA PAS Noise Standards During Summer "Rock Busting."	
Mitigation Level	TRPA Plan Area Statement CNEL levels.	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MPA 07.
	Complete:	Ongoing.
2006 Status	Ongoing	

7.5-16 (NOISE-5) Restrict Hours of Amphitheater Operations

Description	MPA 07	
	Restrict hours of concert noise to the daytime and early evening (non-nighttime) hours. Technically, concerts would need to cease operations by 10:00 p.m. However, it is recommended that concerts cease operations by sunset. This would be consistent with the hours of operations assumed for the amphitheater noise study. In addition, concerts should not extend more than 6 hours in duration.	
Impacts Mitigated	06 EIR/EIS/EIS-NOISE-5: Potential exceedance of TRPA PAS noise standards during summer concerts.	
Mitigation Level	TRPA Plan Area Statement CNEL levels.	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MPA 07.
	Complete:	Ongoing.
2006 Status	No concerts have occurred yet.	

7.5-17 Expanded Bus/Shuttle Access

Description

MP 96

Heavenly shall implement a monitoring program that focuses upon maximizing the shuttle bus usage to the existing base areas and new Gondola.

Heavenly shall implement the proposed CTS (see mitigation measure 7.5-18). Through increased development of transit opportunities, automobile usage can be reduced. Substantial decreases in parking demand and regional VMT (Vehicle miles traveled) could also be achieved.

Heavenly shall implement incentives directed at increasing the usage of the existing Heavenly ski shuttle buses. Incentives could include: 1) discounts for ski lift tickets and ski packages when the shuttle system is used for access; 2) parking fees at the base areas; 3) reduced parking supply at the existing base areas to reduce vehicle parking at the site; or 4) parking management strategies directed at encouraging Heavenly skiers and sightseers to walk to the new Gondola.

Heavenly shall increase their employee shuttle services to maximize the use of shuttles by employees. Existing off-site parking spaces which are in non-compliance according to TRPA shall be eliminated near Ski Run Boulevard to encourage skiers and visitors from the South Lake Tahoe Commercial Core Area to use the new Gondola. In addition, employees shall be provided incentives for using employee housing which is within walking distance of the Heavenly Mountain Resort or Gondola.

Based upon the programs identified above, this impact would be considered less than significant.

Impacts Mitigated 96 Final EIR/EIS/EIS: Parking demand will increase at each of the existing base areas and at the new Gondola.

Mitigation Level No increase in the number of parking spaces at the existing base facilities.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing

Start: Upon approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status Ongoing

Milestone/Product

Heavenly is a founding partner in the CTS MOU and Participation Agreement, and is a leading operator in the CTS system (known as BlueGo) on an ongoing basis. Parking management strategies surrounding the gondola include paid parking at the Heavenly Village parking structure, two-hour enforced parking on neighborhood streets and parking enforcement for customers only at the nearby Village Center. In combination, these measures have reduced use of the private automobile. Heavenly has expanded it free shuttle system in response to the gondola and in response to demand. This includes employee shuttles to and from the California Main Lodge, where employee parking is often restricted during the season. Ridership numbers are shown below:

Year	Passengers
1998/99	427,209
1999/00	426,704
2000/01	421,186
2001/02	391,936
2002/03	395,157
* 2003/04	488,154
2004/05	442,145
2005/06	454,397

* includes operation of employee shuttles by contractor

7.5-18 Discourage Use of Automobiles

Description

MP 96

Heavenly shall discourage the use of automobiles as the primary access mode to the Gondola. No automobile parking for the Gondola shall be provided by Heavenly. Through participation in the CTS the Heavenly Mountain Resort shuttle buses could be used for rolling stock during the summer recreational season. Discounts for summer use of the Gondola could be provided for those Gondola riders who use transit to

	access the Gondola Base Station. Through the CTS and in cooperation with the Chamber of Commerce and the various Tahoe-Area Visitor Information Centers and sources, visitors shall be informed of alternative modes of travel to the Gondola. Public information regarding the CTS system, user discounts and other benefits shall be incorporated into a standard public information/discount package that is provided to all visitors, tourist agencies and other groups who accommodate and/or arrange travel for visitors to the Tahoe Region.	
Impacts Mitigated	96 Final EIR/EIS/EIS Increased peak summer day ridership and vehicle miles traveled (VMT) within the Lake Tahoe Region under the low and high Gondola ridership alternatives.	
Mitigation Level	Reduced automobile use in the Lake Tahoe Region.	
Lead Agency	TRPA	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Upon approval of the Heavenly Mountain Resort MP 96.
	Complete:	Ongoing.
2006 Status	Ongoing	

Milestone/Product

1. Heavenly participates in the CTS system on an ongoing basis. Parking management strategies surrounding the gondola include paid parking at the Heavenly Village parking structure, two-hour enforced parking on neighborhood streets and parking enforcement for customers only at the nearby Village Center. In combination, these measures have reduced use of the private automobile. Heavenly encourages walking trips from nearby hotels and motels, and transit trips to the gondola, particularly during the summer in order to reduce automobile use. This includes sponsorship of the Nifty 50 trolley. Refer to measure 7.5-16 for additional information.
2. Heavenly has provided a full range of resort services at the gondola in order to provide for the guest's needs in one central location, hereby discouraging additional automobile use. The services include ski rental, retail, ski school, guest services and season passes. Winter and summer activities at the gondola mid-station and top station provide year-round attractions in a concentrated location that also discourages automobile use.
3. A key component of BlueGo operations and marketing is the distribution of approximately forty-three direct phone lines and thirty interactive computer kiosks at key lodging and destination properties throughout the community. The kiosks are used to book rides and provide guest service assistance to BlueGo passengers. This helps to discourage automobile use.
4. Additionally, Heavenly implements the TRPA Employer Trip Reduction Ordinance in order to promote transit use, ride sharing and car-pooling by employees. This effort discourages single purpose, single occupant vehicle use.

7.5-19 Implement the Coordinated Transportation System (CTS)

Description

MP 96 and MPA 07

Heavenly shall continue to implement their part of the ongoing package of air quality and traffic mitigation measures presented in the CTS Memorandum of Understanding.

The goals of the CTS are fourfold and are to provide:

1. A unified and *singular* public transit system in the South Shore;
2. A predominantly *market/demand* driven rather than a predominantly *schedule* driven public transit system;
3. A transit system that treats riders as *guests* rather than *passengers*; and
4. A *guest interactive* public transit system that connotes and promotes guest convenience.

A description of the contributions to the CTS Mitigation Fund, physical contributions, specific road, intersection and other physical improvements that would be provided by each of the proponents of the MOU Projects are:

A. Revised Ski Run Project

1. The project's fair share contribution to the CTS Mitigation Fund;
2. Construction of a second left turn lane from Ski Run Boulevard onto U.S. Highway 50 westbound toward the Wye and separate right turn lane on eastbound U.S. Highway 50 at Ski Run Boulevard along with all necessary signalization and traffic control; and
3. Provision of a light rail transit easement by each subcomponent parcel owner of the Ski Run Component of Redevelopment Project 1 adjacent to and along the lake side of U.S. Highway 50 from the West property line of Tahoe Meadows to the East property line of Tahoe Beach and Ski.

B. Park Avenue Project

1. The project's contribution to the CTS Mitigation

Fund;

2. Construction of an intermodal transit facility sited at U.S. Highway 50 and adjacent to the East property line of the Embassy Suites Hotel. This facility shall be constructed to facilitate the CTS and a future fixed guideway system in accordance with proposition 16.
3. Construction of "Transit Lane" from Van Sickle Road to U.S. Highway 50;
4. Realignment of Park Avenue and widening of its entire length from two to three lanes (i.e., one lane each way and one center turn lane);
5. Reconstruction of Van Sickle Road to City Standards from Park Ave to the East property line of the Embassy Suites Hotel;
6. Provision of a light rail transit easement parallel to and along the mountain side of U.S. Highway 50 from the East property line of the Embassy Suites Hotel to Pioneer Trail; and
7. Construction of a free right hand turn lane from Pioneer Trail onto U.S. Highway 50 eastbound, construction of a new lane along and on the mountain side of U.S. Highway 50 from Pioneer Trail to Park Avenue, and construction of a free right hand turn lane from U.S. Highway 50 onto Park Avenue along with all necessary signalization and traffic controls.

C. Heavenly Mountain Resort

1. The project's fair share contribution to the CTS Mitigation Fund;
2. Continued operation of the existing winter bus fleet and additional operation of some portion of that same bus fleet in the summer as part of the CTS; and
3. Construction of the proposed Gondola, which effectively mitigates DVTE, DVMT, and intersection LOS for the majority of the Heavenly Mountain Resort ongoing projects as more particularly set forth in the Heavenly Mountain Resort MP 96 and its 96 Final EIR/EIS/EIS.

D. South Tahoe Public Utility District

1. The project's fair share contribution to the CTS Mitigation Fund which was fixed at $200,000.00 by the May 1995 Certified Future Connections Facilities Plan EIR/EIS; and
2. On an ongoing basis, the contribution of 5% of all sewer connection fees to the CTS Mitigation Fund for operational and capital expenses that are collected from all new sewer connections after May 24, 1995 that are allowed by the "Future Connections Facilities Plan".

Impacts Mitigated	96 Final EIR/EIS/EIS: The Peak Hour Levels of Service at Intersections Along U.S. Highway 50 Would Operate At Unacceptable Conditions in the Year 2007. 06 EIR/EIS/EIS- TRANS-1: Summer Vehicle Miles of Travel 06 EIR/EIS/EIS- TRANS-2: Level of Service 06 EIR/EIS/EIS- TRANS-3: Parking
Mitigation Level	Improvements to the Levels of Service at Intersections Along U.S. Highway 50 by Reducing the Dependence on the Automobile.
Lead Agency	TRPA and South Shore Transportation Management Association
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	TRPA
Timing	**Start:** Upon Future Project Permit Approval **Complete:** Ongoing
2006 Status	Ongoing
Milestone/Product	Heavenly is a founding partner in the CTS MOU and Participation Agreement, and is a leading operator in the CTS system (known as BlueGo) on an ongoing basis. Heavenly has implemented all measures identified in *C.* above, including the payment of its share of the CTS Mitigation Fund. Heavenly implements its share of the CTS during the winter and pays all costs associated with its operations and maintenance.

7.5-20 Reduce Traffic on U.S. Highway 50 at Echo Summit

Description

MP 96

The following mitigation measures are recommended to reduce the new traffic generated by the project on U.S. Highway 50 at Echo Summit during the Sunday peak period. One or a combination of the following measures shall be used to reduce new trips associated with the MP 96 build out.

Heavenly shall expand their charter package promotions for visitors who would normally use Echo Summit to access the Tahoe Basin. Based upon a 55-passenger charter bus capacity, increasing charters alone would require an additional 36 to 48 charters per weekend.

Heavenly shall encourage more visitors to access the Tahoe Basin via air travel to Reno and other airports east of the Placerville area. The shift to air travel would require an additional 1,955 to 2,664 person trips on planes per weekend.

Heavenly shall introduce special pricing programs that are directed at encouraging skiers to access or depart the Tahoe Basin on off-peak times and travel periods. In other words, shift the arrivals to the Basin from Friday nights to Wednesday or Thursday and shift the departures from the Basin to Monday or Tuesday rather than Sunday afternoon.

In order to determine the effectiveness of these measures, Heavenly shall expand their marketing and surveying procedures to include more questions and data concerning arrivals and departures in the Tahoe Basin. Of particular interest is the need to better understand when people arrive and depart the Basin and the routes which they use. Heavenly shall report their findings annually. By reporting these findings each year, the lead and responsible agencies can determine if the project's marketing strategies, such as encouraging bus charters and other alternative modes of access, are successful in reducing traffic into the Basin to pre-MP 96 levels and/or shifting the times and days of the week that people visit the Basin to ski at Heavenly.

Impacts Mitigated

96 final EIR/EIS/EIS: Unacceptable Levels of Service at U.S. Highway 50 near Echo Summit.

Mitigation Level

Non-degradation of peak hour traffic at U.S. Highway 50 and Echo Summit.

Lead Agency

TRPA

Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	TRPA	
Timing	**Start:**	Upon MP 96 approval.
	Complete:	Ongoing.
2006 Status	Ongoing	

Milestone/Product

Heavenly operates winter charter bus service from key points in Sacramento and the Bay Area to provide group travel opportunities. The service is an all-inclusive transportation and ski lift ticket package. The charters are available to groups of 35 and larger. It is promoted and sold through corporate offices and ski shops in these areas. Heavenly works directly with three separate ground tour operators in the Bay Area who their market Heavenly's transportation and ski lift ticket packages directly from the key drive markets.

In 2003, Heavenly began a strategic marketing alliance with Amtrak to promote train and ski packages using the Amtrak Capitol Corridor train line. This product is expected to become more attractive over time as the marketing effort grows.

Heavenly is investigating express transit service from the Sacramento International Airport and other key stops near Sacramento. This service would be similar to the South Tahoe Express service that operates between South Lake Tahoe and the Reno/Tahoe Airport.

Air service between Reno and points west has increased significantly since the 1996 adoption of the MP 96. Today, there are 20 nonstop, direct flights between the Bay Area and Reno/Tahoe and 11 direct, non-stop flights between Los Angles and Reno/Tahoe.

As a member of the Regional Marketing Committee, Heavenly has played a key role in maintaining existing and attracting new air service into the Reno/Tahoe International Airport. New in 2004 is direct, nonstop service between Reno and Newark, NJ and Reno Chicago and Atlanta.

Heavenly currently offers significant off-peak marketing programs designed to encourage destination visitors to stay longer and to arrive/depart during off peak times in order to drive off-peak business. Pricing strategies include ski lift tickets, lodging and transportation. These packages are focused during the Pre-Christmas period (late November through mid-December) and again near the end of the season in spring.

7.5-21 Protect Tahoe Draba Populations within Heavenly Mountain Resort

Description

<u>1996 Master Plan and MPA 07</u>

1. *Surveys:* All facilities that are proposed to be located within potential Tahoe draba habitat shall have surveys

performed prior to site planning for the subject facility. All in-basin Tahoe draba plants shall be avoided and protected using protective measures identified below for in-basin projects.

2. *Fencing:* For out-of-basin projects and for in-basin projects as outlined below in #3, minimize loss of Tahoe draba plants by installing protective fencing around occupied habitat that is adjacent to Forest Service approved construction projects. Fencing shall be installed prior to the onset of construction, shall be at least 4 ft. in height, and shall be installed along the boundary of any construction zone, staging areas, or roads and trails that will be used for construction access and are located adjacent to existing Tahoe draba plants. Plants located within the approved construction footprint may be disturbed for out-of basin projects only. Fencing will be maintained throughout the duration of construction activities and removed upon completion of the project and prior to the opening of the ski season. Installation of information signs and working education shall also be required to inform construction crews of the purpose of the fencing.

3. *Avoidance:* For in-basin projects, avoid loss of Tahoe draba by siting facilities away from Tahoe draba populations and by installing protective fencing around occupied habitat where it is adjacent to proposed facilities.

   Skiway Glade Trails I4 & I5: LTBMU botanists shall work with Heavenly staff and/or contractors in the field to locate trees to be removed for the Skiways Glades and to identify whether existing Tahoe draba populations would be potentially disturbed during tree removal. Trees located nearby existing Tahoe draba populations must be removed in such a manner to avoid disturbance to the plants.

   Zipline Adventure Ride: The zip line stations and access trails shall be repositioned if necessary to avoid disturbance to Tahoe draba and Galena Creek rock cress plants. As described above in bullet number 2, fencing shall also be installed to reduce impacts from adjacent construction activities and staging.

   Gondola Hiking Trails: The gondola hiking trails shall be realigned if necessary to avoid existing in-basin and out-of-basin Tahoe draba and Galena Creek rock cress populations.

Powderbowl Lodge: The proposed Powderbowl lodge location is approximately 8,800 feet in elevation. Surveys were performed in 2006 and did not reveal any draba plants. To date, no Tahoe draba plants have been found this low on the Mountain. However, pre-construction surveys shall be required for the lodge site. Should plants be discovered within the construction footprint, the lodge would either be relocated to avoid plants, or postponed to a future MPA 07 phase when potential adopted conservation strategies may allow for plant disturbance (see Measure VEG-1-A: Tahoe Draba Long-Term Conservation Strategy).

4. *Rock Removal:* Construction activities should avoid capping rocks/boulders that have Tahoe draba growing near them. If rocks must be capped near Tahoe draba populations, existing plants shall be covered during blasting with canisters or other approved protective measures. This measure is in addition to fencing described above in bullet number 2.

5. *Monitoring:* Fences and blasting operations near Tahoe draba plants shall be monitored for the duration of the construction season by contractors, Heavenly staff, and Forest botanists to ensure compliance.

6. *Interpretive Program:* Develop and implement an employee orientation and training program for Tahoe draba for those employees associated with summer operations, such as interpretive programs, zip line, and hiking trails. Interpretive materials may include a description or illustration of Tahoe draba, an overview of the plant's natural history, general locations of the species at Heavenly, and measures that could be employed to protect the plant and its habitat from disturbance. Interpretive materials and services should be provided at entry points for summer visitors to the resort.

Impacts Mitigated

2006 EIR/EIS/EIS – VEG-1: Loss directly or indirectly (including through spread of noxious weeds), of individuals or habitat of endangered, threatened, or rare (CNPS 1B) plant species?

1996 EIR/EIS/EIS - Potential loss or disturbance of Tahoe draba populations within the Master Plan Development Area. (Existing 1994-95 Conditions plus 1996 Master Plan)

Loss or disturbance of Tahoe draba populations due to increased summer recreational activity. (Existing 1994-95 Conditions plus 1996 Master Plan)

Mitigation Level	Maintenance of existing Tahoe draba populations at Heavenly.
Lead Agency	Forest Service (Mountain Wide) and TRPA (In-Basin)
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	Forest Service (Mountain Wide)
Timing	**Start:** Project planning. **Complete:** Ongoing.
2006 Status	Ongoing
Milestone/Product	2005/2006 Status - Each project which is located in potential Tahoe draba habitat is evaluated for potential impacts prior to project implementation. This includes field surveys to locate existing plants. Appropriate mitigation measures including avoidance and plant protection are incorporated in the Project Description as necessary. Field surveys have located substantially more draba plants than were known to exist at the time of the 1996 Master Plan. Each year, Heavenly erects specific Tahoe draba informational signage along key driving and hiking routes that are located in draba habitat to alert summer employees and guests of the draba and its needs. Annual summer employee orientations include a section on draba and habitat protection. Beginning in 2004, Heavenly became a participating partner in a long-term draba genetic and seed collection project developed jointly with the TRPA, the Forest Service and Mt. Rose Ski Area. Goals include a greater understanding of how environmental conditions affect plant survival, genetic make-up, and reproductive methods.

7.5-22 (VEG 1-A) Tahoe Draba Long-Term Conservation Strategy

Description

MPA 07

As required in Measure 7.5-20: Protect Tahoe Draba Populations within Heavenly Mountain Resort, all facilities that are proposed to be located within potential Tahoe draba habitat shall have surveys performed prior to site planning for the specific facility. Within the Lake Tahoe Basin, all Tahoe draba plants shall be avoided and protected using protective measures identified in measure 7.5-20. Future projects included in MPA 07 Phases II and III may have the potential to impact Tahoe draba plants, as new plant populations are

being discovered in numerous locations on the Mountain. Prior to the initiation of phases II and III ongoing research may demonstrate that it is possible to mitigate direct and indirect impacts to Tahoe draba by transplanting natural or nursery grown individuals. As such, Heavenly shall implement the following measures should they want to pursue the potential for disturbance of in-basin Tahoe draba plants in future MPA 07 Phases. Until proven and effective mitigation measures are developed, no plants within the basin will be disturbed.

1. In order to develop a Long-Term Conservation Strategy for Tahoe draba that may one day allow for disturbance of in-basin plants, Heavenly has assisted in facilitating the drafting, execution, and implementation of a Memorandum of Understanding (MOU) between the Forest Service Humboldt-Toiyabe National Forest, Forest Service Lake Tahoe Basin Management Unit, Mount Rose Limited Partnership, Heavenly Valley Limited Partnership and Tahoe Regional Planning Agency. The MOU facilitates the collection of more extensive data on Tahoe draba ecology and include research on potential methods to transplant and propagate plants from seed.
2. Based upon a Forest Service and TRPA approved Conservation Strategy, in-basin plant disturbance and removal may be possible for future MPA 07 phases. To make in-basin disturbance possible, the TRPA Regional Plan may require an amendment that would allow for plant disturbance based on advances in out planting, transplanting procedures and/or seed propagation.

Impacts Mitigated

2006 EIR/EIS/EIS – VEG-1: Loss directly or indirectly (including through spread of noxious weeds), of individuals or habitat of endangered, threatened, or rare (CNPS 1B) plant species?

1996 EIR/EIS/EIS - Potential loss or disturbance of Tahoe draba populations within the Master Plan Development Area. (Existing 1994-95 Conditions plus 1996 Master Plan)

Loss or disturbance of Tahoe draba populations due to increased summer recreational activity. (Existing 1994-95 Conditions plus 1996 Master Plan)

Mitigation Level Maintenance of existing Tahoe draba populations at Heavenly.

Lead Agency TRPA and Forest Service

Implementing Agency Heavenly Mountain Resort

Monitoring Agency	TRPA and Forest Service	
Timing	**Start:**	MPA 07 Adoption
	Complete:	Ongoing.
2006 Status	Proposed MPA 07 Mitigation Measure	

7.5-23 (VEG 1-B) Minimize Loss/Degradation of Sensitive Plant Species

Description

MPA 07

1. Heavenly Mountain Resort shall retain a qualified biologist, funded by Heavenly or fund Forest Service personnel, to conduct a preliminary sensitive plant survey prior to project level siting of any proposed facility within the Heavenly Mountain Resort permit area. The purpose of the survey shall be to identify occurrences of any LTBMU sensitive plant species within or adjacent to the proposed construction corridor and to develop facility siting alternatives that avoid or minimize the loss or degradation of sensitive plants.
   - If sensitive plants are present in project area then at a minimum, a 100 ft buffer will be placed around the plants and the facility shall be sited outside of the buffer.
   - If the 100 ft buffer is not feasible, additional mitigation measures may be discussed for the following plant species: Galena Creek rock cress, Tahoe draba, Cup Lake draba, long-petaled lewisia, and three-ranked hump-moss. See appendices C and D for mitigation measures allowed for Tahoe draba and possible ways the above species could also be mitigated.
   - If the 100 ft buffer cannot be accommodated or impacts to the species cannot be mitigated, additional mitigation measures will not be allowed for the following species, unless there is an increase in current populations: Arabis tiehmii (Tiehm's rock cress), Botrychium ascendens (upswept moonwort), Botrychium crenulatum (scalloped moonwort), Botrychium lineare (slender moonwort), Botrychium lunaria (common moonwort), Botrychium minganense (Mingan moonwort), Botrychium montanum (western goblin), Bruchia bolanderi (Bolander's candle moss), Epilobium howellii (subalpine fireweed), Erigeron miser

(starved daisy), Eriogonum umbellatum var. torreyanum (Torrey's or Donner Pass buckwheat), Helodium blandowii (Blandow's bog-moss), Hulsea brevifolia (short-leaved hulsea), Lewisia kelloggii ssp. hutchisonii (Kellogg's lewisia), L. k. ssp. kelloggii (Kellogg's lewisia), Meesia ulignosa (broad-nerved hump-moss) and Peltigera hydrothyria (veined water lichen).

- A Forest Service Botanist will determine any additional mitigation measures for species on the sensitive plant list that are not included in this environmental document based on the known occurrence information.
- If watch list species are found in the project area, mitigation measures will be discussed and be based on species presence and distribution.

2. In order to minimize disturbance in potential habitat for TES species, facilities should be sited to avoid the following habitats:
   - Riparian areas, wetlands, and meadow vegetation
   - Old growth sites where trees are greater than 30 in dbh
3. Because of limited information pertaining to the effect of man-made snow on sensitive plants, snow guns shall not be placed where snowmaking would directly affect any sensitive plant species.
4. Prior to the final approval of any proposed facility within the permit boundaries, Heavenly Mountain Resort shall prepare or fund a qualified biologist to prepare a project-level biological evaluation (BE) pursuant to Forest Service policy. The BE prepared for each project within Heavenly Mountain Resort MPA 07 Development Area shall incorporate information from the Heavenly Mountain Resort MPA 07 Programmatic BE, as well as information obtained during project-specific biological field surveys. Based on this information, the project level BEs shall identify potential project impacts to sensitive plants and fungi and incorporate mitigation measures to reduce these impacts. The recommendations of the BE shall be approved by the Forest Service and TRPA prior to the onset of construction of any new facility at the Heavenly Mountain Resort.

Impacts Mitigated

06 EIR/EIS/EIS – VEG-1: Loss directly or indirectly (including through spread of noxious weeds), of individuals or habitat of endangered, threatened, or rare (CNPS 1B) plant species?

Mitigation Level	Maintenance and protection of potential existing sensitive plant populations at Heavenly.	
Lead Agency	TRPA and Forest Service	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	Forest Service	
Timing	**Start:**	Project construction.
	Complete:	Ongoing.
2006 Status	New mitigation measure/design feature	

7.5-24 (VEG 1-C) Noxious Weed Management

Description MPA 07

1. As a term and conditions of Heavenly Mountain Resort's Special Use Permit, Heavenly will develop a long-term integrated weed management plan. This plan should include annual monitoring associated with existing weed infestations and new project construction. Plans should include control and abatement plans, restoration and revegetation plans, and annual reporting requirements (weed treatments, infestation sizes, and locations will be reported). Currently, three noxious weed species are located within Heavenly Mountain Resort's boundary on both Forest Service and privately owned land: tall whitetop (*Lepidium latifolium*), Canada thistle (*Cirsium arvense*) and bull thistle (*Cirsium vulgare*).
2. Summertime maintenance and excavation equipment vehicles used for project implementation should be weed free and cleaned of all attached mud, dirt, and plant parts before entering the project area. This practice shall be done at a vehicle washing station or steam cleaning facility (power or high-pressure cleaning) before the equipment and vehicles enter the project area.
3. Equipment, materials, or crews shall not be staged in noxious weed infested areas.
4. All gravel, fill, mulches or other materials should be weed free. Use onsite sand, gravel, rock or organic matter where possible. Otherwise, obtain materials from gravel pits and fill sources that have been determined to be weed-free by the Forest Service Noxious Weed Coordinator. Topsoil from disturbance will be saved and put back to use in

onsite revegetation, unless contaminated with noxious weeds.
All activities that require seeding or planting should use locally collected native seed sources whenever possible. Plant and seed material should be collected from as close to the project area as possible, from within the same watershed and at a similar elevation whenever possible. Persistent non-natives such as timothy (Phleum pretense), orchardgrass (Dactylis glomerata), or ryegrass (Lolium sp.) should be avoided. Seed mixes should be approved by Forest Service Botanists.

5. Weed infestations identified before project implementation that are within the project area should be treated or "flagged and avoided" according to the species present and project constraints.
6. Construction areas should be monitored for 3 years post-project to ensure that no new weed infestations move into the area disturbed during project implementation.
7. Heavenly will implement an annual employee orientation and training program for employees that work in ground disturbing activities. Training could include an introduction to the noxious weeds currently present on the mountain, (tall whitetop, Canada thistle, and bull thistle), photographs of the weeds, a map identifying known weed locations, and a list of the mitigation measures being implemented to eradicate the noxious weeds.

Impacts Mitigated	06 EIR/EIS/EIS – VEG-1: Loss directly or indirectly (including through spread of noxious weeds), of individuals or habitat of endangered, threatened, or rare (CNPS 1B) plant species?	
Mitigation Level	Maintenance and protection of potential existing sensitive plant populations at Heavenly.	
Lead Agency	Forest Service	
Implementing Agency	Heavenly Mountain Resort	
Monitoring Agency	Forest Service	
Timing	**Start:**	Project construction.
	Complete:	Ongoing.
2006 Status	New mitigation measure/design feature	

7.5-25 (VEG 3) Late Seral/Old Growth Forest Enhancement

Description

MPA 07

Heavenly Mountain Resort shall conduct or fund forest enhancement/restoration projects when MPA 07 projects would remove late seral/old growth suitable habitat within the Lake Tahoe Basin as shown in Figure 3.8-1. The acres of habitat enhanced/restored shall be at a 2 to 1 ratio for each acre removed for projects that result in removal of identified habitat. The objective of the forest enhancement/restoration projects shall be to advance stands toward a late seral stage and promote old growth characteristics. Forest enhancement/restoration projects may also decrease impacts associated with secondary effects by decreasing fragmentation of forested stands (i.e., fully restoring roads that bisect suitable habitat). All forest enhancement/restoration projects shall comply with USFS Limiting Operating Periods so as to not disturb adjacent sensitive wildlife species if they should exist.

All forest enhancement/restoration projects shall follow the Policies set forth in the TRPA Goals and Policies Conservation Element Vegetation Goal #4 as follows:

- Stands exhibiting late seral/old growth characteristics shall be managed to allow these stands to sustain these conditions.
- Stands not exhibiting late seral/old growth characteristics shall be managed to progress towards late seral/old growth.
- Prescriptions for treating these stands will be prepared on a stand-by-stand basis. Each prescription will demonstrate/explain how it will promote late seral or old growth characteristics prior to applying any mechanical treatment or prescribed fire. Stand-specific prescriptions will be developed using the best available forest and ecosystem management science, strategies, standards and guidelines.
- Retain large trees as a principal component of late seral/old growth ecosystems.
- Retain trees of medium and small size sufficient to provide for large tree recruitment over time, and to provide structural diversity. Preferably, these trees will be the most vigorous in the stand using one of the standard tree classifications. In addition, species composition should be key consideration in tree retention.
- Use of prescribed fire is preferred to reduce fire hazard and

perpetuate desired natural ecological processes. Manual and mechanical treatment may be used to reduce forest fuel levels and to improve late seral forest conditions in addition to, or in lieu of, prescribed fire.

Preferred locations for the forest enhancement/restoration shall be within the Heavenly Special Use Permit Boundary. All habitat removed from within the Tahoe Basin shall be mitigated by habitat enhancement within the Tahoe Basin. Secondary locations for the forest enhancement/restoration shall be directly to the south of the Heavenly Special Use Permit Boundary in the High Meadows area. If suitable sites for enhancement/restoration are no longer available in the preferred or secondary restoration areas, enhancement/restoration projects may be located anywhere within the Tahoe Basin for in-basin impacts (or outside the Basin in the Carson Range of the Sierra Nevada for out-of-basin impacts) in the same elevation zone (Subalpine zone, Upper Montane zone or Montane zone) as the habitat being removed.

All restored stands shall be inspected by USFS and TRPA staff to ensure target conditions of the prescription are met. Subsequent to completion of the enhancement prescription, an inspection and stand analysis shall be performed every 5 years and shall be reported to USFS and TRPA. The stand analysis shall follow the stand structure elements set forth in Table 3.8-16 of the FEIR/EIS/EIS.

Impacts Mitigated	06 EIR/EIS/EIS – VEG-3: Loss of native live trees larger than 24" dbh, old forest or late seral/old growth habitat as defined by TRPA or SNFPA.
Mitigation Level	Maintenance and protection of large trees and late seral/old growth habitat at Heavenly.
Lead Agency	TRPA
Implementing Agency	Heavenly Mountain Resort and Forest Service
Monitoring Agency	TRPA
Timing	**Start:** MPA 07 Approval **Complete:** Ongoing.
2006 Status	New mitigation measure/design feature

7.5-26 Restrict Vehicle Traffic within the Heavenly Ski Resort MP 96 Development Area

Description

MP 96

1. Vehicle traffic within the Heavenly Mountain Resort MP 96 Development Area shall be limited to employees of the Heavenly Mountain Resort, the Forest Service, and other regulatory agencies that have jurisdiction within the special use permit boundaries. Public traffic shall be restricted to service vehicles and authorized visitors only, and shall be either accompanied by a Heavenly staff member or carry written authorization for vehicle access. In addition, Heavenly Mountain Resort shall install signing at each entry gate identifying a 10 mile per hour speed limit on all internal roads, directing all traffic to stay on existing roads, and warning all vehicles to watch for wildlife crossing the roads.
2. Off-road vehicle use by Heavenly staff, as well as construction vehicles and equipment, shall be restricted to existing roads.
3. Heavenly Mountain Resort shall implement an annual employee orientation and training program that provides an introduction to the wildlife resources at Heavenly and the measures being undertaken to protect these resources from disturbance.

Impacts Mitigated 96 Final EIR/EIS/EIS Indirect effects to wildlife and fisheries.

Mitigation Level Minimize effects of vehicle use on wildlife.

Lead Agency TRPA and Forest Service

Implementing Agency Heavenly Mountain Resort

Monitoring Agency Forest Service

Timing

Start: Upon approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status Ongoing.

7.5-27 Monitor and Protect Nesting and Fledgling Bird Species

Description

MP 96

Heavenly shall not conduct any summer concerts at the Gondola Top Station prior to August 1. Prohibition of concerts prior to this time would allow most local resident birds to complete fledging and minimize the potential for nest failure. Alternatively, Heavenly may choose to conduct a more focused study to determine whether concert-related noises do result in nest failure of local resident nesting birds. This study would be conducted with the approval and in consultation with the Forest Service and TRPA. If no nest failure is documented, constraints on the timing of summer concerts at the Gondola Top Station may be reduced or eliminated.

Impacts Mitigated 96 Final EIR/EIS/EIS: Noise Impacts Associated with Summer Concerts at the Gondola Top Station

Mitigation Level Maintain TRPA sound level recommendations at the Gondola Top Station during nesting and fledgling periods.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing

Start: Project Review.

Complete: Ongoing.

2006 Status None

Milestone/Product No concerts occur yet at the top of the gondola. When they do, compliance with the measure will occur.

7.5-28 Compliance with Design Review Guidelines Section 7 Exterior Lighting Standards and Code of Ordinances

Description

MP 96

All exterior lighting should be designed in keeping with TRPA Design Review Guidelines Section 7 and Code of Ordinances Exterior Lighting Standards Section 30.8, including the following standards:

1. Exterior lights shall not blink, flash or change intensity. String lights, building or roofline tube lighting, reflective or luminescent wall surfaces are prohibited.

2. Exterior lighting shall not be attached to trees except for the Christmas season.

3. Parking lot, walkway, and building lights shall be directed downward.

4. Fixture mounting height shall be appropriate to the purpose. The height shall not exceed the limitations set forth in Chapter 22.

5. Outdoor lighting shall be used for purposes of illumination only, and shall not be designed for, or used as, an advertising display. Illumination for aesthetic or dramatic purposes of any buildings or surrounding landscape projecting above the horizontal is prohibited.

6. The commercial operation of searchlights for advertising or any other purpose is prohibited.

7. Seasonal lighting displays and lighting for special events which could conflict with other provisions of this section may be permitted on a temporary basis pursuant to Chapter 7.

The Guidelines recommend that lighting be designed as an integral part of the architecture and landscape and that consistent overall lighting and overly bright lighting be avoided. The guidelines recommend overall principles for the design of parking lot lighting, the lighting of structures, and height standards. In general, lighting should be directed downward and away from adjacent properties, cut-off shields should be incorporated and lighting should not cause glare or excessive spillage to adjacent sites. To avoid significant impacts, each of the proposed plan's lighted areas should be consistent with this section of the Guidelines.

In addition, exterior lighting for the Gondola Mid Station, Top Station and Monument Peak Lodge shall be concealed from view off-site. Glare or spillage lighting shall not be evident from any lakeward vista point. If, when installed, exterior lighting is evident from below, it shall be redesigned to eliminate glare or spillage or be removed entirely. If exterior lighting is necessary for the illumination of walks or paths, luminaries should be installed in low bollards, with light directed downward and toward buildings and should be concealed from view from the lakeward side. Non-directional

floodlights should not be installed at any location visible from the lakeward side. Spotlights may be installed if their source is concealed and light spillage and glare is not evident from the lakeward side. None of the buildings or ancillary structures or buildings should appear to "glow" as viewed from the lakeward side.

Impacts Mitigated 96 Final EIR/EIS/EIS: The exterior lighting of lodges, restaurants, maintenance buildings, and parking lots proposed in the MP 96 may be inconsistent with TRPA Design Review Guidelines and Code of Ordinances Recommendations.

Mitigation Level Compliance with TRPA Design Review Guidelines Section 7 Exterior Lighting Standards and Code of Ordinances Chapter 30.

Lead Agency TRPA

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing

Start: Upon approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status Ongoing

Milestone/Product Implemented as part of individual projects.

7.5-29 Building and Site Design

Description

MP 96

Each in-basin building proposed in the MP 96 (new, relocated and remodeled) should be designed to be consistent with the Community Design Subelement of the Regional Plan including the design recommendations found within the following policies:

- Site Design;
- Building Height, Bulk, and Scale;
- Landscaping;
- Lighting; and
- Signing.

In addition, the design recommendations found in the Design Review Guidelines and the Code of Ordinances Chapters 22,

	24, 26, 29, and 30 should be closely followed. Design shall be consistent with the applicable section of the Forest Service Built Environment Guide for buildings on National Forest Land.
Impacts Mitigated	96 Final EIR/EIS/EIS: The new and remodeled buildings may be inconsistent with the Community Design Threshold.
Mitigation Level	Compliance with Community Design Subelement of the TRPA Regional Plan, the Design Review Guidelines, and the Code of Ordinances.
Lead Agency	TRPA
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	TRPA
Timing	**Start:** Project Review. **Complete:** Upon completion of project construction.
2006 Status	None
Milestone/Product	Implemented as part of individual projects. Photographs of recent building design projects are included in the Appendix of the MPA 07. The photographs show several examples of both remodeling and new construction that incorporates materials, colors and forms that are appropriate to the natural setting. In addition, the design solutions are consistent with the TRPA design standards and guidelines and the Forest Service Built Environment Image Guide. The design of future lodges will continue to implement the design goals of both agencies while producing remarkable facilities for all guests to use and enjoy.

7.5-30 Maintain Timber Thinning Practices

Description

MP 96

Heavenly Mountain Resort shall be required to continue working with the Forest Service in determining areas that require timber thinning practices as established by the LTBMU Land and Resource Management Plan to reduce the potential for rapid and intensive wildfire spread due to excessive fuel loading. In addition, non-flammable materials shall be used on roofs, and cleared ingress/egress at base areas will be a priority.

Timber thinning practices shall be consistent with the management criteria developed for maintenance and enhancement of wildlife habitat values.

Impacts Mitigated

96 Final EIR/EIS/EIS: Potential exposure of future ski resort visitors to wild/forest fires.

96 Final EIR/EIS/EIS: Indirect effects to wildlife and fisheries.

Mitigation Level Controlled fuel loading.

Lead Agency Forest Service

Implementing Agency Heavenly Mountain Resort

Monitoring Agency Forest Service

Timing

Start: Upon approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status Ongoing

Milestone/Product Heavenly reviews thinning or hazard reduction needs annually with Forest Service vegetation management specialists. Where necessary, the Forest Service marks the trees to be removed and Heavenly removes the trees. No commercial harvesting occurs. Tree removal is conducted consistent with the Sierra Nevada Forest Plan Amendment Standards & Guidelines.

7.5-31 Compliance with Existing Health and Safety Practices

Description

MP 96

Heavenly shall continue to update the Hazardous Materials Business Plan, Hazardous Waste and Substance Potential Spill Emergence Plan, and Hazardous Waste Training Program as

	new chemicals are utilized for Heavenly Mountain Resort operations. Heavenly shall continue to train personnel in the proper management, use, and disposal of hazardous materials. If a spill occurs, Heavenly shall implement the Hazardous Waste and Substance Potential Spill Emergency Plan. Heavenly shall comply with TRPA's Handbook of Best Management Practices, the Water Quality Provisions of the TRPA Code of Ordinances, and the requirements and objectives of the Lahontan Regional Water Quality Control Board (i.e. Upper Truckee River Water Quality Objectives, the narrative water quality objectives in the 1975 North Lahontan Basin Plan, and the narrative and numerical water quality objectives in the 1991 California Inland Surface Waters Plan). Heavenly shall also comply with state and federal regulations associated with chemical use, storage, and disposal.
Impacts Mitigated	96 Final EIR/EIS/EIS: Use, storage, and disposal of hazardous materials on the project site. 96 Final EIR/EIS/EIS: Through spills or leaks hazardous chemicals may pollute creeks or groundwater
Mitigation Level	Proper storage and disposal of hazardous materials at Heavenly maintenance facilities, warehouses and restaurants.
Lead Agency	TRPA, Lahontan, and Forest Service
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	Forest Service as part of their special use permits administration.
Timing	**Start:** Upon approval of the Heavenly Mountain Resort MP 96. **Complete:** Ongoing.
2006 Status	Ongoing
Milestone/Product	Heavenly maintains current hazardous materials handling and emergency spill control plans. A copy of Heavenly's current Spill Prevention Control and Counter Measures Plan is included in the Appendix of the MPA 07. Heavenly staff is trained on an annual basis in these plans. Heavenly complies with all use, storage and disposal requirements consistent with local, state and federal regulations.

7.5-32 Avalanche Safety Practices

Description

MP 96

According to the Heavenly avalanche safety team, the unexploded ordnance does not pose a significant threat to winter recreational use. The threat of human contact would come in late spring/early summer following snowmelt when the unexploded ordinance is uncovered. In order to ensure safety of summer recreational users, the Heavenly Mountain Resort avalanche safety team members shall document the precise location of all unexploded ordnance using a topographic map and written or computer filing system ledger. Each year following snowmelt and prior to use of the site for summer recreational activities, these locations shall be walked by the team to locate the unexploded ordnance. The ordnance shall either be detonated in place (if safety warrants) or removed from the site and destroyed in an approved out-of-region location. Locations of ordnances exploded during no snow conditions shall be documented for potential vegetative restoration if ground cover is destroyed.

Impacts Mitigated 96 Final EIR/EIS/EIS: Potential threat of unexploded avalanche ordnance to winter and summer recreational users.

Mitigation Level Proper storage and disposal of hazardous materials at Heavenly maintenance facilities, warehouses and restaurants.

Lead Agency Heavenly Mountain Resort

Implementing Agency Heavenly Mountain Resort

Monitoring Agency Forest Service

Timing

Start: Upon approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status Ongoing

Milestone/Product Heavenly operates avalanche control and snow safety procedures as outlined in the Forest Service Operations and Avalanche Plan. A copy of the plan is included in the Appendix of the MPA 07. This includes the documenting of unexploded ordnance during the winter and removal of it in the summer. The Operations and Avalanche Control plan is reviewed and updated annually as needed. Snow safety and avalanche control practices are outlined in the Avalanche Handbook which is incorporated into the Operations and Avalanche Plan by

reference.

In addition, proper license credentials are maintained by Heavenly personnel involved in avalanche control operations. Heavenly complies with new federal Homeland Security regulations regarding the storage of explosives and maintenance of records.

7.5-33 Provide Employee Housing

Description

MP 96

- Heavenly Mountain Resort would complete a housing survey of employees on an annual basis. This would document the number of Heavenly employees (on a monthly basis), location of residence, housing characteristics (size, number of occupants and number of workers), housing preferences, and current costs.
- A Base Year would be defined as the year prior to the first phase of mountain expansion allowed under the adopted MP 96. Base employment is defined as the number of Heavenly Mountain Resort employees on the payroll during the peak month of the Base Year. According to Heavenly, peak employment during the 1996/1997 season was 1,607 employees.
- Heavenly Ski Resort would maintain its current housing program and develop, purchase, or otherwise sponsor additional affordable housing for 33 percent of "New" Heavenly employment. New employment is the number of persons employed during the peak month of the year above Base Year peak month employment counts.
- The Heavenly Mountain Resort can provide affordable housing in a number of ways. Certain mechanisms are encouraged:
  - work with and supplement efforts by South Lake Tahoe Housing Authority;
  - renovate existing housing stock to reduce environmental impacts of new development; and
  - expand the existing rental program.
- Heavenly's employee housing program and

compliance with this mitigation measure shall be monitored and directed by an Affordable Housing Task Force made up of the City of South Lake Tahoe, TRPA, and Housing Authority representatives. TRPA shall have final authority as to acceptable compliance by Heavenly, but involvement of a more diversified group might ensure more imaginative solutions that are better integrated with other local housing efforts.

Impacts Mitigated 96 Final EIR/EIS/EIS: Increased pressure on affordable housing supply.

Mitigation Level Suitability, price and availability of housing for year round residents.

Lead Agency TRPA and El Dorado County

Implementing Agency Heavenly Mountain Resort

Monitoring Agency TRPA

Timing

Start: Upon approval of the Heavenly Mountain Resort MP 96.

Complete: Ongoing.

2006 Status Ongoing

Milestone/Product Heavenly owns and operates an employee housing facility that has 87 beds available for employees. In addition, Heavenly's Human Resources department provides an employee housing assistance program that matches workers with available housing. Heavenly participates as a member of the South Lake Tahoe Housing task Force. A housing needs survey of all employees is conducted annually. The tabulated results of the 2002 survey are included in the MPA 07 Appendix.

7.5-34 Ensure Adequate Police/Sheriff/Fire Capacity

Description

MP 96

Although no significant impact on police and sheriff services is anticipated under the MP 96, two forms of mitigation measures are suggested. Presently Heavenly pays police officers for special traffic control duties associated with controlling mountain access and egress. In instances where the operation of Heavenly causes direct impact on police or sheriff protection requirements, these practices should be maintained. Additionally, Heavenly should take aggressive steps to ensure

	that mountain expansion does not create new attractions for out-of-bounds skiing, which can place burdens on the Sheriff's search and rescue operations. At the time of project approval for new on-mountain Heavenly facilities, the City of South Lake Tahoe Fire Department shall determine if they will be required, due to project circumstances, to provide first response. If this determination is made, the City shall propose an agreement for consideration by Heavenly and the Lake Valley Fire Protection District to provide first response to emergencies.
Impacts Mitigated	96 Final EIR/EIS/EIS: Additional demands on police protection services. 96 Final EIR/EIS/EIS: New demands on fire protection service provision.
Mitigation Level	Adequate police and fire protection services.
Lead Agency	City of South Lake Tahoe Police Department, El Dorado County Sheriff, and Douglas County Sheriff
Implementing Agency	Heavenly Mountain Resort
Monitoring Agency	City of South Lake Tahoe Police Department, El Dorado County Sheriff, and Douglas County Sheriff
Timing	**Start:** Upon adoption of the Heavenly Mountain Resort MP 96. **Complete:** Ongoing.
2006 Status	Ongoing
Milestone/Product	No specific mitigation measure is required. Under Vail ownership, Heavenly has significantly improved and increased its in-house security staff. This has reduced the need for additional law enforcement services. Heavenly regularly hires additional police and sheriff's department staff to assist with special events or during peak holiday periods. The extra officers are only provided if required department staffing levels for normal duties are met. Heavenly maintains regular communications with city and county fire departments in order to ensure response time and mutual aid issues are resolved. First response mutual aid agreements are in place between adjoining fire departments. Heavenly complies with all fire district regulations as part of designing and implementing new on-mountain facilities.

7.6 MANAGEMENT RESPONSE TO MONITORING AND EVALUATION

7.6-1 Soil and Water Quality

The previous sections of this chapter describe a variety of mitigation measures necessary to prevent adverse impacts to resources as a result of the implementation of the MPA 07. Appendix 3.1-D of the Draft EIR/EIS/EIS describes a revised environmental monitoring plan to evaluate and determine whether there is an overall trend of improvement in environmental conditions at the resort for soil and water resources. The monitoring program is also designed to determine whether the proposed actions (including mitigation measures) are successful in preventing adverse impacts from MPA 07 implementation.

The purpose of this section is to describe the process that will be followed to disclose monitoring and evaluation results to all interested parties, and how these results will be utilized by Heavenly Resort, USFS, Lahontan, and TRPA to identify and prioritize appropriate management actions in response to monitoring results.

The environmental monitoring plan and the Lahontan Monitoring and Reporting requirements that are contained in the adopted Waste Discharge Requirements specify that an annual monitoring report will be prepared by February 15th each year to disclose the results of the previous year's monitoring, including an evaluation of achievement of environmental standards and targets. The environmental monitoring plan also specifies that a comprehensive analysis will be prepared at 5 year intervals, and will include an evaluation of trends over the past 5 years of data collection. These monitoring reports will be utilized to initiate the adaptive management process.

As monitoring reports are completed by a third-party contractor approved by the appropriate agencies, they will be sent by hard copy to USFS, TRPA, and Lahontan by May 1st of each year. Reports will be available for public review at TRPA, USFS and Lahontan offices as well as posted on appropriate websites including but not limited to, the Heavenly Resort website, the LTBMU website, and the Tahoe Integrated Information Management System (TIIMS) website.

Within 60 days of receiving the completed monitoring reports, Heavenly, USFS, Lahontan and TRPA staff will develop an action plan based on the monitoring results. The following steps will be followed for the action plan process:

- Determine if monitoring results indicate implementation (or lack of implementation) of proposed actions/mitigation measures contributed to exceedance of environmental standards, goals, and targets (herein termed environmental triggers).
- Determine level of significance of exceedance of triggers (using qualitative assessment based on numerical analysis.)
- Identify specific response(s) to address exceedances of environmental triggers.
    - Response can include alternatives to proposed action, and/or additional mitigation measures if impacts of alternatives were adequately analyzed through the NEPA process.

- Specific responses will be presented in an action plan for the upcoming field season(s), which describes what will be done, where work will be done, and when work is to be conducted. Specific actions will be prioritized and scheduled based on a qualitative assessment of significance.

Once an action plan is developed based on the most recent annual or comprehensive monitoring report, the action plan will be made available on the same websites utilized to post monitoring reports. Notice of the availability of this action plan will be sent to interested parties. If requested by interested parties, a meeting will be held to discuss the action plan recommendations. Subsequent monitoring reports will include a specific section(s) describing follow-up monitoring of proposed management actions to identify whether the actions were implemented, and evaluate the success of the actions.

Examples of "triggers" that may initiate a management response, and examples of the toolbox of actions that may be considered to address the triggers are provided below. These lists are not meant to be all-inclusive. However, management responses will not be considered that may have different/greater adverse effects than those considered in the MPA 05 EIR/EIS.

Potential Triggers

- An apparent degradation in water quality that can be linked to management activities. (water quality and macroinvertebrate sampling).

- Documented failures in BMP implementation (BMPEP).

- Documented failures in BMP effectiveness. Visible signs of unacceptable levels of uncontrolled runoff, accelerated erosion and sediment transport from ski trails, roads, and developed facilities. (BMPEP)

- Indicators of channel degradation (based on Stream Condition Inventory (SCI) Sampling).

- Analysis of ski trail restoration techniques indicates more cost/effective low maintenance techniques for restoring soil function on previously summer graded ski trails and other disturbed lands (Soil Restoration monitoring).

- An apparent reduction in overall effective soil cover at the resort, resulting in evidence of increased rill and gully erosion. Will also include evaluation of soil function, acknowledging that cover may not be the most significant variable in creating stable soils (Effective Soil Cover Monitoring).

- Evidence of poor success in SEZ restoration, based on hydrologic and vegetation indicators.

Potential Management Responses

The following are potential actions that will be considered in the management toolbox in response to monitoring results.

- Discontinue or reduce tree removal activity associated with creation of new conventional or gladed ski trails through removal and thinning of tree overstory.
- Utilize less ground disturbing techniques for tree removal.
- Continue restoration of historic ski trails that exhibit poor soil function resulting in increased runoff and erosion, or to improve overall watershed condition where monitoring indicators indicate a degrading trend. Consider techniques evaluated through the soil restoration monitoring program.
- Correct mitigation measures that were either not implemented, were not implemented correctly, or are not effective.
- If BMPs were implemented as designed, but were not effective, prescribe more aggressive BMPs and/or retrofit existing BMPs.

7.6-2 Traffic and Parking

The previous sections of this chapter describe a variety of mitigation measures necessary to prevent adverse impacts to resources as a result of the implementation of the MPA 07. The monitoring program is designed to determine whether the proposed actions (including mitigation measures) are successful in preventing adverse impacts from MPA 07 implementation.

The purpose of this section is to describe the process that will be followed to disclose monitoring and evaluation results to all interested parties, and how these results will be utilized by Heavenly Resort, Douglas County, El Dorado County, the City of South Lake Tahoe and TRPA to identify and prioritize appropriate management actions in response to monitoring results.

Heavenly shall prepare a parking monitoring report at the end of each ski season. This report shall include:

- A list of the days during which overflow parking was used on Ski Run Boulevard, South Benjamin Drive, and Galaxy Bowl and any days when overflow parking was full at these locations.
- The number of parking spaces used at Galaxy Bowl each day this area was used for overflow parking.
- A statement regarding whether any days during which these overflow parking areas were filled.

The monitoring reports will be utilized to initiate the adaptive management process.

As monitoring reports are completed, they will be sent by hard copy to TRPA, Douglas County, El Dorado County, and the City of South Lake Tahoe. Notification will include emailing individuals when the reports are available and listing the places and websites where reports can be viewed. Reports will be

available for public review at TRPA as well as posted on appropriate websites including but not limited to, the Heavenly Resort website.

In addition, historical annual average daily traffic, monthly, and hourly traffic counts can be obtained from NDOT's Annual Traffic Report, the NDOT Traffic Information Access (TRINA) website (http://www.nevadadot.com/trina/), and Caltrans Traffic and Vehicle Data Systems website (http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm) or by contacting these agencies directly. These traffic counts can be accessed by interested parties to evaluate traffic trends on US 50 near South Lake Tahoe.

Within 60 days of receiving the completed monitoring reports, Heavenly, TRPA, Douglas County, El Dorado County, and the City of South Lake Tahoe staff, depending on the areas affected, will develop an action plan based on the monitoring results. The following steps will be followed for the action plan process:

- Determine if monitoring results indicate implementation (or lack of implementation) of proposed actions/mitigation measures contributed to exceedance of environmental standards, goals, and targets (herein termed environmental triggers).
- Determine level of significance of exceedance of triggers (using qualitative assessment based on numerical analysis.)
- Identify specific response(s) to address exceedances of environmental triggers.
    - Response can include alternatives to proposed action, and/or additional mitigation measures if impacts of alternatives were adequately analyzed through the environmental review (e.g., TRPA, CEQA, NEPA) process.
- Specific responses will be presented in an action plan for the upcoming operating season, which describes what will be done, where, and when measures will be implemented. Specific actions will be prioritized and scheduled based on a qualitative assessment of significance.

Once an action plan is developed based on the most recent annual monitoring report, the action plan will be made available on the same websites utilized to post monitoring reports. Notice of the availability of this action plan will be sent to interested parties. If requested by interested parties, a meeting will be held to discuss the action plan recommendations. Subsequent monitoring reports will include a specific section(s) describing follow-up monitoring of proposed management actions to identify whether the actions were implemented, and evaluate the success of the actions.

Examples of "triggers" that may initiate a management response, and examples of the toolbox of actions that may be considered to address the triggers are provided below. These lists are not meant to be all inclusive. However, management responses will not be considered that may have different/greater adverse affects than those considered in the MPA 05 EIR/EIS.

Potential Triggers

- An increase in the percentage of visitors who drive to Heavenly Resort as reported by Heavenly's yearly visitor survey.

- An increase in Sunday PM peak hour traffic volumes based on available Caltrans count data on US 50 near Echo Summit.
- An increase in number of days and spaces used for overflow parking at monitored locations.
- An increase in illegally parked cars near Heavenly base areas during winter skiing operations.

Potential Management Responses

The following are an example of the potential actions that will be considered in the management toolbox in response to monitoring results:

- Increase marketing for using alternative modes to access Heavenly Mountain Resort.
- Provide a park and ride lot and shuttle service from a location west of Ski Run Boulevard
- Provide bus/shuttle service from the "Wye" to Heavenly.
- Provide shuttle service from the Sacramento International Airport, similar to the South Tahoe Express service from Reno International Airport.
- Expand shuttle service from the San Francisco Bay area.

7.6-3 Late Seral / Old Growth Enhancement

Mitigation measure/design feature VEG-3 Late Seral/Old Growth Forest Enhancement as described earlier in this chapter was identified as necessary to prevent adverse impacts to late seral/old growth forest as a result of the implementation of the MPA 07. The enhanced stand treated under VEG-3 shall be monitored every 5 years to determine whether the proposed enhancement prescription is progressing successfully.

The purpose of this section is to describe the process that will be followed to disclose monitoring and evaluation results to all interested parties, and how these results will be utilized by Heavenly Resort, Forest Service and TRPA to identify and prioritize appropriate management actions in response to monitoring results if deemed necessary.

The USFS or a third-party shall prepare a forest enhancement monitoring report every 5 years to track the progress of the enhanced stand using the stand structure element criteria as provided in Table 3.8-16 of the MPA 05 Final EIR/EIS/EIS. This report shall include a summary and status of each of the stand structure criteria and a discussion as to how the stand is progressing toward late seral/old growth characteristics.

Examples of "triggers" that may initiate a management response, and examples of the toolbox of actions that may be considered to address the triggers are provided below. These lists are not meant to be all inclusive. However, management responses will not be considered that may have different/greater adverse affects than those considered in the MPA 05 EIR/EIS.

Potential Triggers

- Failure of the management prescription to meet the desired criteria outlined in the prescription.

Potential Management Responses

The following are potential actions that will be considered in the management toolbox in response to monitoring results.

- A new stand of equal or greater acreage shall be identified and approved by TRPA and Forest Service as suitable for restoration/enhancement.
- A prescription shall be formulated for the new stand as a site specific tool for restoration/enhancement using the stand structure criteria as outlined in MPA 05 Final EIR/EIS/EIS Table 3.8-16.
- The new stand enhancement prescription shall be implemented.

Technical Appendices 1-7

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1 1993/94 - 2003/04 PAOT CALCULATIONS

PAOT Calculations

(Taken From The TRPA Ski Area Master Plan Guidelines, November 29, 1990, as amended)

The method used to calculate ski area capacity in terms of Persons at One Time (PAOT), describes a relationship between the actual number of skiers at a ski area on an average peak day (shown as the annual 90th percentile day in terms of use) and the area's one hour uphill lift capacity in terms of skiers. The use to capacity ratio provides a method to analyze a ski area's existing conditions as well as proposed changes.

The ratio also represents the relative efficiency of a ski area's operation compared to other areas. Larger ratios generally indicate a more efficient operation than areas with small ratios. Prior to allocating additional recreation capacity to an area with a relatively low use to capacity ratio (i.e., low efficiency) other methods to improve the area's efficiency should be considered. Likewise, a declining trend in efficiency should be analyzed as to its cause prior to allocating additional capacity. Using the assumptions listed below, existing and additional PAOT allocations shall be measured using the following methods.

PAOT Calculations Methods:

Existing and proposed ski area capacity in terms of PAOT is calculated as follows:

1. For each season of operation from 1993/94 through 2003/04, identify the 90th percentile day in terms of use by summing ticket sales, complimentary tickets, and an estimate of season pass holders at the ski area on that day.

2. For each season of operation from 1993/94 through 2003/04, identify the total 1-hour uphill capacity of all ski lifts at the entire ski area (includes both within and outside of the Tahoe Region).

3. For each season of operation from 1993/94 through 2003/04, determine the use to capacity ratio for the entire ski area by dividing step No. 1 above by step No. 2 above. This represents the annual use to capacity ratio.

4. Determine the mean annual use to capacity ratio by summing the annual use to capacity ratios and dividing it by the number of seasons of operations from 1993/94 through 2003/04.

   Note: The mean annual use to capacity ratio shall be recalculated during each update of individual master plans.

5. To calculate the existing PAOT capacity (that which exists at the beginning of the master plan process) multiply the mean annual use to capacity ratio by the one-hour uphill capacity of all existing ski lifts within the Region. In the case where a ski area is located both inside and outside the Region (e.g., Alpine Meadows, Heavenly), TRPA will require existing and proposed PAOT capacities to be calculated only for the portion of the ski area (i.e., existing ski lifts) which are within the Region.

6. To calculate the proposed PAOT capacity of the ski area following master plan implementation, multiply the mean annual use to capacity ratio by the 1-hour uphill capacity of all existing and proposed ski lifts

within the Region. The difference between existing and proposed PAOT shall not exceed the PAOT allocation listed in the applicable Plan Area Statement.

Note: When existing lifts are removed or replaced as part of the master plan, the net change in uphill capacity shall be used in order to calculate proposed PAOT capacity.

7. In the case where a master plan proposes to construct additional ski runs or additional ski run capacity (e.g., widening an existing run), within adding uphill capacity, the additional capacity in terms of PAOT shall be allocated using skier slope density as follows:

   Additional PAOT = acres of additional ski runs X skier slope density/acre using the following densities:

Beginner/Easiest Runs	=	35 skiers/acre
Intermediate/More Advanced Runs	=	20 skiers/acre
Advanced/Most Difficult Runs	=	10 skiers/acre

   Individual master plans may elect to propose substitute ski run densities in skiers/acre for use in allocating additional PAOT where additional ski run capacity is proposed within additional uphill lift capacity. TRPA shall approve the use of substitute densities based on a recommendation by the appropriate steering committee. Proposed substitute densities shall be documented using actual data from the ski area.

Following are the Heavenly Ski Resort Calculations[1] for existing PAOT and use to capacity ratio for the years from 1993/94 through 2003/04. The calculations begin with 1993/94 season which was not included in the 1996 Master Plan.

[1] The PAOT calculations were prepared by Andrew Strain, Vice President of Planning & Governmental Affairs, and Paul Pfotenhauer, Controller, of Heavenly Ski Resort. These calculations were based on slope transport feet (STF) calculations that were prepared for the USDA Forest Service on an annual basis. These STF calculations are provided to the USDA Forest Service as documentation for the calculation of usage fees for National Forest lands.

Heavenly PAOT Summary (1993/94 - 2003/04)

Existing Use and Capacity

Year	Location	1-Hour Capacity	No. of Skiers on 90th % day	Annual Use / Capacity
1993/94	In and Out	29,050	8,338	29%
1994/95	In and Out	30,250	9,288	31%
1995/96	In and Out	30,250	9,010	30%
1996/97	In and Out	30,250	9,039	30%
1997/98	In and Out	32,630	9,562	29%
1998/99	In and Out	34,620	9,089	26%
1999/2000	In and Out	36,870	9,005	24%
2000/2001	In and Out	41,095	9,619	23%
2001/2002	In and Out	40,295	9,873	25%
2002/2003	In and Out	40,295	11,554	29%
2003/2004	In and Out	42,200	12,517	30%
		IN and OUT	11 Year Mean	28%

Heavenly PAOT Calculation Table (1993/94)

Opening Date	11/24/1993		
Closing Date	4/17/1994		
	Days Open		90th%
Days of Operation	145		14.5
One Hour Uphill Capacity		29,050	
Number of Skiers on 90th % Day		8,338	
Annual Use / Capacity		28.70%	

	Date	Day of Week	Holiday	Total Visits
1	2/19/1994	Saturday		12,740
2	2/20/1994	Sunday		12,542
3	12/28/1993	Tuesday		12,498
4	12/29/1993	Wednesday		12,020
5	12/27/1993	Monday		11,817
6	12/30/1993	Thursday		11,557
7	12/31/1993	Friday		11,365
8	2/12/1994	Saturday		11,096
9	2/26/1994	Saturday		10,514
10	1/29/1994	Saturday		9,930
11	2/5/1994	Saturday		9,478
12	1/15/1994	Saturday		9,084
13	3/5/1994	Saturday		8,799
14	2/27/1994	Sunday		8,662
15	3/26/1994	Saturday		8,338
16	1/16/1994	Sunday		8,138
17	3/19/1994	Saturday		8,008
18	3/13/1994	Sunday		8,001
19	12/25/1993	Saturday		7,813
20	3/6/1994	Sunday		7,677
21	1/22/1994	Saturday		7,641
22	2/13/1994	Sunday		7,600
23	2/21/1994	Monday		7,428
24	12/26/1993	Sunday		7,372
25	1/1/1994	Saturday		7,259
26	2/18/1994	Friday		7,223
27	2/11/1994	Friday		7,194
28	2/25/1994	Friday		7,105
29	34364	38018		7,102
30	34327	37981		7,075

Notes:

Heavenly PAOT Calculation Table (1994/95)

Opening Date	11/18/1994	
Closing Date	4/30/1995	

	Days Open	90th%
Days of Operation	163	16

One Hour Uphill Capacity	30,250
Number of Skiers on 90th % Day	9,288
Annual Use / Capacity	30.70%

	Date	Day of Week	Holiday	Total Visits
1	12/29/1994	Thursday		15,655
2	12/30/1994	Friday		14,427
3	2/19/1995	Sunday		13,776
4	2/18/1995	Saturday		13,562
5	12/28/1994	Wednesday		13,406
6	12/27/1994	Tuesday		12,941
7	12/31/1994	Saturday		12,468
8	3/4/1995	Saturday		11,743
9	2/4/1995	Saturday		11,691
10	2/25/1995	Saturday		11,175
11	2/11/1995	Saturday		10,981
12	3/25/1995	Saturday		10,972
13	1/21/1995	Saturday		10,452
14	1/28/1995	Saturday		9,991
15	12/26/1994	Monday		9,769
16	12/25/1994	Sunday		9,288
17	1/15/1995	Sunday		9,055
18	1/1/1995	Sunday		8,923
19	2/20/1995	Monday		8,912
20	3/11/1995	Saturday		8,879
21	3/12/1995	Sunday		8,581
22	3/19/1995	Sunday		8,544
23	11/26/1994	Saturday		8,486
24	2/26/1995	Sunday		8,209
25	1/2/1995	Monday		7,982
26	2/24/1995	Friday		7,891
27	3/26/1995	Sunday		7,809
28	2/17/1995	Friday		7,726
29	2/5/1995	Sunday		7,642
30	2/12/1995	Sunday		7,593

Notes:

Heavenly PAOT Calculation Table (1995/96)

Opening Date	11/23/1995		
Closing Date	5/5/1996		
	Days Open		90th%
Days of Operation	145		15
One Hour Uphill Capacity		30,250	
Number of Skiers on 90th % Day		9,010	
Annual Use / Capacity		29.79%	

	Date	Day of Week	Holiday	Total Visits
1	2/18/1996	Sunday		13,453
2	3/2/1996	Saturday		12,268
3	12/28/1995	Thursday		11,546
4	3/9/1996	Saturday		11,182
5	2/10/1996	Saturday		10,926
6	2/24/1996	Saturday		10,373
7	3/16/1996	Saturday		10,294
8	1/28/1996	Sunday		10,229
9	2/3/1996	Saturday		9,864
10	3/23/1996	Saturday		9,759
11	12/27/1995	Wednesday		9,545
12	2/17/1996	Saturday		9,407
13	12/29/1995	Friday		9,335
14	2/11/1996	Sunday		9,052
15	2/22/1996	Thursday		9,010
16	1/20/1996	Saturday		8,736
17	2/23/1996	Friday		8,726
18	12/30/1995	Saturday		8,674
19	3/10/1996	Sunday		8,547
20	12/31/1995	Sunday		8,543
21	2/25/1996	Sunday		8,540
22	3/17/1996	Sunday		8,385
23	3/3/1996	Sunday		8,060
24	3/15/1996	Friday		8,005
25	3/30/1996	Saturday		7,829
26	12/24/1995	Sunday		7,787
27	3/1/1996	Friday		7,708
28	2/26/1996	Monday		7,615
29	3/24/1996	Sunday		7,465
30	12/25/1995	Monday		7,382

Notes:

Heavenly PAOT Calculation Table (1996/97)

Opening Date	11/27/1996		
Closing Date	4/20/1997		
	Days Open		90th%
Days of Operation	139		14
One Hour Uphill Capacity		30,250	
Number of Skiers on 90th % Day		9,039	
Annual Use / Capacity		29.88%	

	Date	Day of Week	Holiday	Total Visits
1	2/16/1997	Sunday		13,141
2	12/28/1996	Saturday		12,848
3	2/15/1997	Saturday		11,411
4	12/30/1996	Monday		10,821
5	1/3/1997	Friday		10,596
6	1/18/1997	Saturday		10,316
7	2/22/1997	Saturday		9,936
8	3/1/1997	Saturday		9,865
9	12/31/1996	Tuesday		9,702
10	3/8/1997	Saturday		9,684
11	12/25/1996	Wednesday		9,597
12	12/27/1996	Friday		9,586
13	1/19/1997	Sunday		9,324
14	2/8/1997	Saturday		9,039
15	3/15/1997	Saturday		8,553
16	3/22/1997	Saturday		8,529
17	2/1/1997	Saturday		8,386
18	3/9/1997	Sunday		8,100
19	2/28/1997	Friday		8,022
20	2/17/1997	Monday		7,874
21	12/24/1996	Tuesday		7,782
22	2/9/1997	Sunday		7,636
23	2/23/1997	Sunday		7,537
24	3/23/1997	Sunday		7,349
25	2/2/1997	Sunday		7,051
26	2/21/1997	Friday		7,038
27	3/10/1997	Monday		6,714
28	1/11/1997	Saturday		6,691
29	2/20/1997	Thursday		6,640
30	3/3/1997	Monday		6,630

Note:

Heavenly PAOT Calculation Table (1997/98)

Opening Date	10/31/1997		
Closing Date	5/10/1998		
	Days Open		90th%
Days of Operation	192		19
One Hour Uphill Capacity		32,630	
Number of Skiers on 90th % Day		9,562	
Annual Use / Capacity		29.30%	

	Date	Day of Week	Holiday	Total Visits
1	2/15/1998	Sunday		14,950
2	1/17/1998	Saturday		14,084
3	2/28/1998	Saturday		13,259
4	12/27/1997	Saturday		12,482
5	12/29/1997	Monday		12,232
6	3/7/1998	Saturday		11,985
7	12/28/1997	Sunday		11,684
8	3/14/1998	Saturday		11,245
9	1/2/1998	Friday		11,087
10	12/30/1997	Tuesday		11,024
11	2/22/1998	Sunday		11,003
12	12/26/1997	Friday		10,612
13	3/21/1998	Saturday		10,551
14	12/31/1997	Wednesday		10,489
15	1/24/1998	Saturday		10,473
16	1/3/1998	Saturday		10,173
17	3/1/1998	Sunday		9,854
18	3/15/1998	Sunday		9,642
19	2/14/1998	Saturday		9,562
20	1/31/1998	Saturday		9,320
21	2/16/1998	Monday		9,161
22	3/8/1998	Sunday		9,160
23	2/20/1998	Friday		9,141
24	2/7/1998	Saturday		8,846
25	3/6/1998	Friday		8,763
26	2/27/1998	Friday		8,693
27	2/8/1998	Sunday		8,611
28	12/23/1997	Tuesday		8,214
29	1/18/1998	Sunday		8,205
30	3/28/1998	Saturday		8,172

Notes:

Heavenly PAOT Calculation Table (1998/99)

Opening Date	10/18/1998		
Closing Date	5/31/1999		
	Days Open		90th%
Days of Operation	225		23
One Hour Uphill Capacity		34,620	
Number of Skiers on 90th % Day		9,089	
Annual Use / Capacity		26.25%	

	Date	Day of Week	Holiday	Total Visits
1	12/29/1998	Tuesday		13,849
2	2/14/1999	Sunday		13,713
3	2/13/1999	Saturday		13,584
4	12/28/1998	Monday		13,503
5	12/31/1998	Thursday		12,698
6	12/30/1998	Wednesday		12,353
7	2/27/1999	Saturday		12,024
8	1/16/1999	Saturday		11,983
9	1/1/1999	Friday		11,902
10	2/20/1999	Saturday		11,509
11	12/27/1998	Sunday		11,006
12	3/6/1999	Saturday		10,514
13	3/13/1999	Saturday		10,254
14	12/26/1998	Saturday		10,125
15	1/30/1999	Saturday		10,104
16	1/2/1999	Saturday		9,914
17	1/17/1999	Sunday		9,903
18	2/15/1999	Monday		9,774
19	12/21/1998	Monday		9,514
20	2/21/1999	Sunday		9,206
21	2/19/1999	Friday		9,201
22	3/27/1999	Saturday		9,158
23	12/25/1998	Friday		9,089
24	12/22/1998	Tuesday		8,937
25	1/24/1999	Sunday		8,908
26	3/14/1999	Sunday		8,859
27	3/20/1999	Saturday		8,776
28	3/7/1999	Sunday		8,565
29	2/26/1999	Friday		8,492
30	2/12/1999	Friday		8,267

Notes:

Heavenly PAOT Calculation Table (1999/00)

Opening Date	10/16/1999		
Closing Date	5/1/2000		
	Days Open		90th%
Days of Operation	199		20
One Hour Uphill Capacity		36,870	
Number of Skiers on 90th % Day		9,005	
Annual Use / Capacity		24.42%	

	Date	Day of Week	Holiday	Total Visits
1	2/19/2000	Saturday		16,409
2	2/20/2000	Sunday		14,950
3	3/4/2000	Saturday		12,672
4	1/29/2000	Saturday		12,343
5	1/16/2000	Sunday		12,239
6	3/11/2000	Saturday		11,882
7	2/21/2000	Monday		11,775
8	1/22/2000	Saturday		11,567
9	2/12/2000	Saturday		11,505
10	3/18/2000	Saturday		11,444
11	2/26/2000	Saturday		11,161
12	2/5/2000	Saturday		10,503
13	1/15/2000	Saturday		10,223
14	3/12/2000	Sunday		10,181
15	3/25/2000	Saturday		10,180
16	2/25/2000	Friday		9,758
17	2/23/2000	Wednesday		9,737
18	3/5/2000	Sunday		9,362
19	2/24/2000	Thursday		9,261
20	3/13/2000	Monday		9,005
21	12/28/1999	Tuesday		8,829
22	2/18/2000	Friday		8,803
23	2/22/2000	Tuesday		8,760
24	2/27/2000	Sunday		8,657
25	2/6/2000	Sunday		8,543
26	2/28/2000	Monday		8,534
27	12/29/1999	Wednesday		8,480
28	3/17/2000	Friday		8,378
29	3/6/2000	Monday		8,317
30	12/30/1999	Thursday		8,262

Notes:

Heavenly PAOT Calculation Table (2000/01)

Opening Date	10/30/2000		
Closing Date	5/5/2001		
	Days Open		90th%
Days of Operation	186		19
One Hour Uphill Capacity		41,095	
Number of Skiers on 90th % Day		9,619	
Annual Use / Capacity		23.41%	

	Date	Day of Week	Holiday	Total Visits
1	2/18/2001	Sunday	0	14,243
2	2/17/2001	Saturday	0	13,733
3	1/13/2001	Saturday	0	13,393
4	12/28/2000	Thursday	y	13,111
5	12/30/2000	Saturday	y	12,641
6	12/29/2000	Friday	y	12,524
7	12/27/2000	Wednesday	y	11,944
8	1/14/2001	Sunday	0	11,455
9	12/31/2000	Sunday	y	11,339
10	3/3/2001	Saturday	0	11,309
11	2/24/2001	Saturday	0	10,849
12	3/10/2001	Saturday	0	10,501
13	2/23/2001	Friday	0	10,460
14	1/20/2001	Saturday	0	10,355
15	3/17/2001	Saturday	0	10,041
16	2/3/2001	Saturday	0	9,955
17	1/27/2001	Saturday	0	9,888
18	2/10/2001	Saturday	0	9,781
19	12/24/2000	Sunday	y	9,619
20	2/25/2001	Sunday	0	9,445
21	3/11/2001	Sunday	0	9,002
22	3/24/2001	Saturday	0	8,699
23	2/19/2001	Monday	0	8,653
24	1/28/2001	Sunday	0	8,604
25	12/25/2000	Monday	y	8,559
26	12/26/2000	Tuesday	y	8,396
27	3/18/2001	Sunday	0	8,160
28	2/20/2001	Tuesday	0	7,981
29	1/12/2001	Friday	0	7,963
30	2/21/2001	Wednesday	0	7,841

Notes:

Heavenly PAOT Calculation Table (2001/02)

Opening Date	11/3/2001		
Closing Date	5/5/2002		
	Days Open		90th%
Days of Operation	176		18
One Hour Uphill Capacity		40,295	
Number of Skiers on 90th % Day		9,873	
Annual Use / Capacity		24.50%	

	Date	Day of Week	Holiday	Total Visits
1	12/30/2001	Sunday	y	15,252
2	1/3/2002	Thursday	y	15,188
3	12/31/2001	Monday	y	15,000
4	2/17/2002	Sunday	0	14,024
5	2/16/2002	Saturday	0	13,745
6	12/29/2001	Saturday	y	13,547
7	12/27/2001	Thursday	y	13,384
8	1/19/2002	Saturday	0	12,540
9	1/20/2002	Sunday	0	11,829
10	12/24/2001	Monday	y	11,520
11	2/9/2002	Saturday	0	11,482
12	3/9/2002	Saturday	0	11,358
13	2/23/2002	Saturday	0	11,199
14	12/28/2001	Friday	y	11,175
15	1/4/2002	Friday	y	11,106
16	3/2/2002	Saturday	0	10,136
17	12/23/2001	Sunday	y	9,958
18	2/2/2002	Saturday	0	9,873
19	2/10/2002	Sunday	0	9,655
20	1/5/2002	Saturday	y	9,471
21	1/12/2002	Saturday	0	9,251
22	2/22/2002	Friday	0	9,169
23	2/18/2002	Monday	0	9,024
24	2/21/2002	Thursday	0	8,533
25	12/25/2001	Tuesday	y	8,508
26	3/8/2002	Friday	0	8,397
27	2/24/2002	Sunday	0	8,309
28	1/27/2002	Sunday	0	8,232
29	3/23/2002	Saturday	0	8,149
30	3/30/2002	Saturday	0	8,126

Notes:

Heavenly PAOT Calculation Table (2002/03)

Opening Date	11/15/2002		
Closing Date	4/27/2003		
	Days Open		90th%
Days of Operation	158		16
One Hour Uphill Capacity		40,295	
Number of Skiers on 90th % Day		11,554	
Annual Use / Capacity		28.67%	

	Date	Day of Week	Holiday	Total Visits
1	1/18/2003	Saturday		15,773
2	12/29/2002	Sunday	Y	15,458
3	1/1/2003	Wednesday	Y	15,137
4	2/16/2003	Sunday		14,771
5	1/2/2003	Thursday	Y	14,743
6	3/31/2003	Monday	N	14,608
7	12/30/2002	Monday	Y	14,574
8	1/3/2003	Friday	Y	13,756
9	2/22/2003	Saturday		13,662
10	1/19/2003	Sunday		13,658
11	1/25/2003	Saturday		13,040
12	1/4/2003	Saturday	Y	13,005
13	2/15/2003	Saturday		12,424
14	1/11/2003	Saturday	N	12,154
15	4/27/2003	Sunday	N	11,566
16	2/8/2003	Saturday	N	11,554
17	3/1/2003	Saturday	N	11,434
18	12/23/2002	Monday	Y	11,200
19	3/8/2003	Saturday	N	10,910
20	12/22/2002	Sunday		10,706
21	2/17/2003	Monday		10,521
22	2/2/2003	Sunday	N	10,164
23	12/26/2002	Thursday	Y	10,023
24	12/25/2002	Wednesday	Y	9,860
25	2/23/2003	Sunday		9,804
26	3/2/2003	Sunday	N	9,742
27	2/21/2003	Friday		9,607
28	3/16/2003	Sunday	N	9,494
29	12/24/2002	Tuesday	Y	9,393
30	2/9/2003	Sunday	N	9,287

Notes:

Heavenly PAOT Calculation Table (2003/04)

Opening Date	1/11/2003		
Closing Date	5/2/2004		
	Days Open		90th%
Days of Operation	152		15
One Hour Uphill Capacity		42,200	
Number of Skiers on 90th % Day		12,517	
Annual Use / Capacity		29.66%	

	Date	Day of Week	Holiday	Total Visits
1	12/30/2003	Tuesday	Y	16,320
2	1/17/2004	Saturday	Y	16,294
3	1/2/2004	Friday	Y	16,102
4	1/3/2004	Saturday	Y	15,012
5	2/28/2004	Saturday	Y	14,899
6	12/27/2003	Saturday	Y	14,751
7	12/26/2003	Friday	Y	14,514
8	1/18/2004	Sunday	Y	13,918
9	12/31/2003	Wednesday	Y	13,858
10	2/15/2004	Sunday	Y	13,393
11	1/31/2004	Saturday	N	13,221
12	2/7/2004	Saturday	N	13,195
13	2/21/2004	Saturday	N	13,073
14	12/28/2003	Sunday	Y	12,980
15	3/6/2004	Saturday	N	12,517
16	2/14/2004	Saturday	Y	12,137
17	1/10/2004	Saturday	N	11,889
18	1/24/2004	Saturday	N	11,592
19	3/13/2004	Saturday	N	11,540
20	2/19/2004	Thursday	N	11,503
21	12/22/2003	Monday	N	10,914
22	2/29/2004	Sunday	Y	10,697
23	2/8/2004	Sunday	N	10,462
24	12/21/2003	Sunday	N	10,416
25	3/7/2004	Sunday	N	10,383
26	1/25/2004	Sunday	N	10,329
27	2/20/2004	Friday	N	9,876
28	2/27/2004	Friday	N	9,844
29	12/25/2003	Thursday	Y	9,782
30	12/23/2003	Tuesday	N	9,464

Notes:

2 Land Coverage Summary Table Projects Approved 1997 - 2004

2 LAND COVERAGE SUMMARY TABLE PROJECTS APPROVED 1997 - 2004

1996

Maximum Allowable Land Coverage Available Established in 1996 Master Plan	2,053,854	
Existing Land Coverage at Time of Master Plan Adoption	2,013,854	
Remaining Allowable Potential Land Coverage at Time of Master Plan Adoption		40,000

PROJECT	Land Coverage Approved (sq. ft.)	Land Coverage Banked (sq. ft.)	Remaining Balance (sq. ft.)
1997			
TRPA Permit #970293 Construction of Tamarack Express Lift (Lift GG)	3,000		
Remaining Potential Coverage			37,000
1998			
TRPA Permit #980311 Perfect Ride Lift (Lift K)	977		
TRPA Permit #980312 Gunbarrel Express/West Bowl Lift Modifications (Lifts B & C)	114		
TRPA Permit #980228 Sky Meadows Lodge	15,852		
Remaining Potential Coverage			20,057
1999			
TRPA File #950514 California Trail Land Coverage Banking		62,290	
TRPA Permit #980644/200165 Gondola Project/Major Plan Revision Lift II	78,483		
Remaining Potential Coverage			3,864
2000			
TRPA Permit #(200677)	40		

Enchanted Forest Handle Tow (Lift M)			
Remaining Potential Coverage			3,824
2001			
TRPA Permit #20010448 Mitey-Mite Handle Tow Relocation (Top of Gondola Tubing Lift)	100		
TRPA Permit #20010803 Pioneer Handle Tow Replacement (Lift N)	41		
Remaining Potential Coverage			3,683
2002			
TRPA Permit #20021469 California Base Monument Sign	8		
Remaining Potential Coverage			3,675
2003			
TRPA Permit #20030390 Canyon Express Lift Replacement (Lift H)/Ridge Lift Removal (Lift H-1)	1,503		
TRPA Permit #20030420 Gondola Project Plan Revision Coverage for original project reduced		126	
TRPA Permit # 20030783 World Cup/East Bowl Snowmaking Replacement	540		
Remaining Potential Coverage			1,758
2004			
Withdrawal of TRPA Permit #980228/20030391 Sky Meadows Lodge/Phase I Plan Revision		15,852	
TRPA Permit #20040299 Powderbowl Express Lift Replacement (Lift G-1)/Waterfall Lift Removal (Lift G)	2,548		
TRPA Permit #20040392 Boulder Magic Carpet Modifications (Lifts X & X-1)	519		
TRPA Permit #20040552 World Cup/East Bowl Snowmaking Replacement Plan Revision	2,538		
TRPA Permit #20041129 Canyon Express Lift Parking Rail	48		
Totals	**106,311**	**78,268**	**11,957**

Projects with Potential to Bank Removed Land Coverage Pending Final Inspection:

TRPA Permit #20030285
Boulder Lodge & Parking Lot Water Quality BMPs 4,464 sq. ft.

Pending Projects with Additional Land Coverage:

TRPA Permit Application #20040694
California Dam Well 48 sq. ft.

3 Easy Street Run Hazard Reduction & Demonstration Project

3 EASY STREET RUN HAZARD REDUCTION AND DEMONSTRATION PROJECT

I. Background

"Easy Street," ski run located near the top of the Gondola, was approved in 1999 as a component of the Gondola Project. At that time, it was identified as Ski Run 81. The entire project, including the ski runs, was analyzed in the 1998 *Gondola Project Environmental Assessment*. The lower section of the run was implemented in 2000 with the remainder of the project completed in 2003. The entire run was implemented in a manner consistent with ski run prescriptions outlined in the *Tamarack Express Environmental Assessment* (1996) for ski runs 29, 29a, and 81 (Cascade, Sam's Dream, and Tamarack Return), which were implemented in 1997.

In 2003, the Big Easy chairlift was implemented. It provides access to Easy Street and other ski runs near Von Schmidt's Flats. In 2004, a below ground snowmaking system is being installed as approved in the Gondola Project. At the same time, skier safety and hazard reductions which were included and approved as a part of the Permanent BMPs included in the Project Description (Gondola Project Draft EA Section 2.5) will also be implemented. This paper outlines the implementation and monitoring methods to be used for the skier safety and hazard reductions.

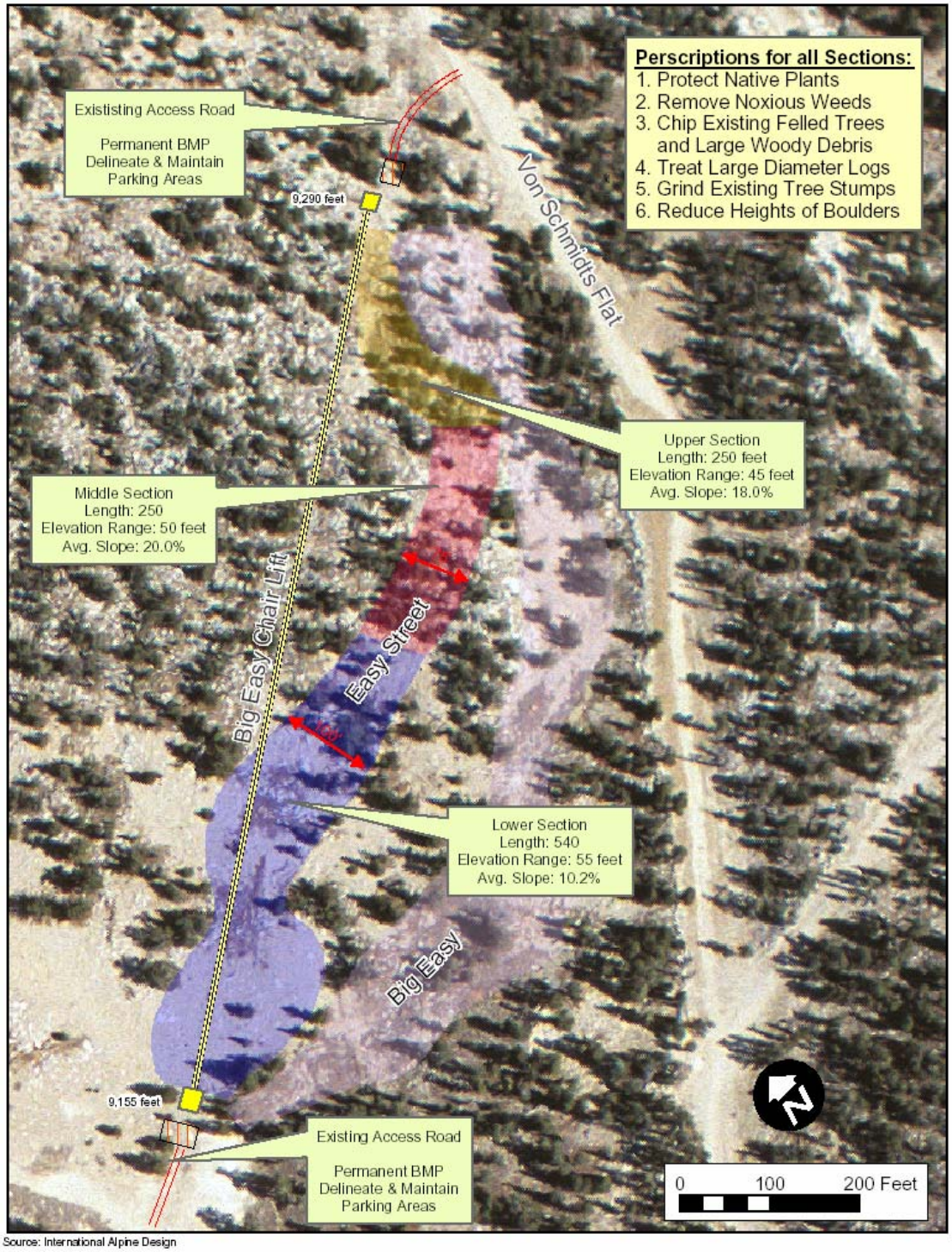
II. Site Description

Easy Street is located in a portion of upper Heavenly Valley Creek, watershed CA-1. General ski run characteristics for Easy Street are provided in Table 1. The existing effective soil cover and gradients are variable across the project area. In response to these variable conditions, the run can be characterized into three separate segments: "Upper Section," "Middle Section," and "Lower Section." Figure 1 illustrates the three sections and provides general descriptions.

TABLE 1: Ski Run Characteristics for Easy Street
Source: Heavenly Ski Resort, 2004.

Run Length:	1,040 ft
Run Width:	50-200 ft variable width
Elevation:	9,280 ft to 9,150 ft
Average Gradient:	16.06%
Existing Effective Soil cover:	Boulders Felled trees and associated large woody debris Stumps Native shrubs
Existing Erosion:	To be determined during pre-project monitoring

Existing conditions along the Upper Section are illustrated in Photo 1. The Upper Section includes a 250 foot run segment with numerous large boulders, felled trees, and large woody debris. Photo 2 depicts the area of the Middle Section commonly referred to as the "Rocky Knoll." An additional portion of the 250 foot Middle Section is presented in Photo 3. Photo 4 presents existing conditions along Lower Section (540 ft) of the project area. This section has coverage in the form of boulders, felled trees, large woody debris, and transitions into bare ground with sparse shrub and rock cover towards the lower portion of the run. The Upper, Middle, and Lower sections are addressed separately due to differences in slope and total effective soil cover.



Source: International Alpine Design

Heavenly
Ski Resort

Easy Street Run Hazard Reduction and Demonstration Project

PARSONS

FIGURE 1: Easy Street Run Hazard Reduction and Demonstration Project sections.

PHOTO 1: The Upper Section has areas of bare ground and a few felled trees and corresponding stumps. However, large boulders are the primary coverage. The average slope is 18%. While overall height of effective soil cover will be reduced to between 12 and 18 inches, total effective soil cover may increase due to better placement of large woody debris and native mulch application. The upper section is delineated as the first 250 feet of the ski run, beginning at the top station of Big Easy moving down slope.

PHOTO 2: The Middle or "Rocky Knoll" Section has an average slope of 20% with effective soil cover mainly in the form of large boulders, medium-sized felled trees, and corresponding stumps. Existing conditions demand a snow base of close to 72 inches for adequate and safe coverage of large boulders and felled trees.

PHOTO 3: The Middle Section of Easy Street, with an average slope of 20% is also covered by large boulders, felled trees, and stumps, but amounts and average heights of effective soil cover are less extreme than the "Rocky Knoll" area.

PHOTO 4: The Lower Section of the project area is partially illustrated in the photo above. The remainder of the lower portion has less large woody debris and more areas without coverage. The average slope of the Lower Section is 10.2%.

III. Purpose and Need

For several ski runs within the resort, including Easy Street, a need exists to reduce dependency on man-made snow and associated resource use (i.e., water, electrical), while continuing to provide for skier safety and a consistent, high quality recreational opportunity. With existing effective surface cover heights along Easy Street, a snow depth of no less than 36 inches is necessary to provide coverage of obstacles (mainly poorly placed logs, tree stumps cut at two to three feet and large boulders) along the run prism (Photo 1). An additional 24 inches of snow is needed to provide for skier safety and grooming operations. In the Middle Section, the area referred to as the "Rocky Knoll" typically requires a minimum of 72 inches of snow depth to provide for skier safety and operation of the lift (Photo 2).

During the 2003-2004 ski season, natural snow was collected on site with wind fences and harvested from adjacent areas during grooming operations in order to supply and maintain adequate snow cover on this high use, beginner-level ski run. Harvesting additional snow is time consuming and potentially damaging to snow grooming equipment. A below ground snowmaking system will be installed in 2004 as approved in the Gondola Project EA. With existing run cover conditions, potential snowmaking operation and energy costs are estimated at $30,000 to $35,000 to provide for and maintain a safe snow depth of 36 inches. Additional costs may accrue as a result of equipment damage sustained during grooming operations. By decreasing the effective surface cover heights, operation and energy costs will be reduced by approximately two-thirds.

Implementation of the Easy Street Run Hazard Reduction and Demonstration Project is coordinated with the installation of the snowmaking system and the associated best management practices (BMPs). The demonstration project is proposed on Easy Street because it is of low environmental risk due to gentle slopes, notable absence of an active stream channel, and adequate distance to receiving waters with sufficient forested vegetation buffers.

IV. Project Objectives

- Reduce height of existing effective surface cover (felled trees, large woody debris, stumps, and boulders) to between 12 to18 inches;
- Reduce consumption of electrical energy and water resources;
- Attain and Maintain the 70% total effective surface cover as required by the Cumulative Watershed Effects (CWE) Analysis;
- Provide a variety of surface cover for wildlife microhabitat.

V. Project Prescriptions

The following prescriptions which are included in the permanent BMP section of the Gondola Project Description (Draft EA, page 2-46), will be implemented in all project areas (Upper Section, Middle Section, and Lower Section). A combination of prescriptions, outlined below, will be field-verified by Heavenly representatives and those of other agencies in order to achieve the stated objectives.

A. Prescription 1: Protect Native Plants and Revegetate

- Existing Native shrubs in the treatment areas will be field identified and avoided to the greatest extent possible;
- Within the snowmaking construction corridor, revegetation activities will be completed as planned.

B. Prescription 2: Remove Noxious Weeds

- Noxious weeds shall be flagged by a qualified Heavenly representative or consultant, isolated from project activity, and reported to the Lake Tahoe Basin Management Unit's (LTBMU) Ecosystem Conservation Department for formal taxonomic identification and removal activity scheduling.

C. Prescription 3: Chip Existing Felled Trees and Large Woody Debris (less than 10 inches)

- Existing felled trees and logs less than 10 inches will be treated in the same manner. The following options will be implemented in combination:
- All existing limbs shall be either chipped and spread evenly or scattered where the maximum height does not exceed 12 to 18 inches;
- Existing felled trees shall be chipped and the resulting mulch evenly distributed to an average depth of three inches.

D. Prescription 4: Treat Existing Large Diameter Logs (greater than 10 inches)

Large diameter logs cannot be mechanically chipped and will be treated separately as described below.

- Existing large diameter logs shall be remove from run with excavator on site for snowmaking construction;
- Logs shall be placed in adjacent forested areas off of the designated ski run to mimic natural surroundings;
- Logs at the bottom of the steeper Middle Section will be mechanically placed perpendicular to the slope where needed to reduce soil erosion hazards.

E. Prescription 5: Grind Existing Tree Stumps

The following options will be implemented in combination:

- Stumps shall not be removed and soil disturbance will not occur;
- Stumps shall be cut or ground to less than 6 inches in height from the soil surface whenever safely possible;
- Existing rounds shall be removed in order to provide a more natural appearing condition.

F. Prescription 6: Reduce Height of Boulders

- Boulders shall be capped (blasted with explosives) to a height between 12 and 18 inches;
- Boulders will be moved by hand whenever possible, but the excavator onsite for the snowmaking installation may also be utilized;
- Fragments shall be placed as to maximize contact with the soil surface with efforts to mimic the natural surroundings.

VI. Best Management Practices

A. Temporary Best Management Practices

Temporary BMPs approved in the Gondola EA for the snowmaking system installation will be installed and maintained.

B. Permanent Best Management Practices

Permanent BMPs for both the skier safety and run hazard reduction are prescribed in Section 2.5 of the Gondola EA. In addition to the BMPs listed, following measures will be added:

- Delineate and maintain designated vehicle parking areas at Big Easy Lift top and base stations;
- Install proper signage identifying closure of the area to summer use;
- Install summer interpretive signage describing the objectives of Easy Street Run Hazard Reduction and Demonstration Project.

VI. Monitoring Plan

The following Monitoring Plan will be implemented to determine if the stated objectives are achieved. The monitoring activities will utilize the Effective Soil Cover Protocols for the existing *Heavenly Ski Resort Monitoring Program* lead by the LTBMU. Additionally, digital photograph documentation will also be taken.

A. Monitoring Objectives

- Determine and compare pre- and post-project conditions;
- Evaluate effectiveness of stated prescriptions in prevention of erosion;
- Determine the appropriateness of prescriptions for utilization on existing and future ski
- runs within the resort.

B. Monitoring Activities

1. Pre-project Effective Surface Cover Evaluation, Photopoint Establishment, and Reporting (June 2004)

    - Describe existing conditions;

- Determine existing effective soil cover percentage and make up;
- Identify potential erosional features.

2. Post-Project Effective Surface Cover Evaluation/Photo Documentation (September/October 2004)

   - Describe post-project surface conditions;
   - Determine the post-project effective surface cover percentage and composition;
   - Determine if prescriptions were implemented correctly and completely.

3. Post-Treatment Storm Evaluation, Photo Documentation, and Reporting (Weather Dependent)

   - Determine the effectiveness of prescriptions during and/or following significant storm events (as soon as access permits);
   - Determine erosion impacts and where applicable, the distance of soil mobilization;
   - Include results as part of the *Heavenly Ski Resort Annual Monitoring Report.*

4. Seasonal Runoff Evaluation, Photo Documentation, and Reporting (June/July 2005)

   - Determine if prescriptions are effective during spring runoff period;
   - Determine erosion impacts and when applicable, the distance of soil mobilization;
   - Monitor long term effectiveness for erosion control;
   - Include results as part of the *Heavenly Ski Resort Annual Monitoring Report*.

5. Noxious Weed Monitoring

   - Visual monitoring for noxious weeds will continue during long term maintenance activities;
   - If encountered, noxious weeds will be flagged and reported to LTBMU's Ecosystem Conservation Department for formal taxonomic identification and removal scheduling.

C. Long Term Maintenance Activities

Long term maintenance activities will be determined by monitoring, as the demonstration project is considered an iterative and adaptive process to be continually improved upon as monitoring objectives are realized, including the need and ability to maintain 70% effective surface cover and the success of delineating parking areas over time.

VIII. Adaptive Management Considerations

Following the completion of the Easy Street project and field review by TRPA, Forest Service, Lahontan and Heavenly personnel in 2005, the following adaptive management practices were recommended and will be incorporated into subsequent run hazard reduction projects. The adaptive management practices can be grouped into the areas of improving soil resources, improving wildlife habitat, improving visual quality, incorporating underground utilities into the project, and construction techniques. They are as follows:

A. Improving Soil Resources

- Test soil permeability prior to design in order to assist in designing effective prescriptions. Retest following two-three years after project completion to better understand the effects of snow grooming equipment;
- Rather than simply spreading the wood chips or other organic material on top of the soil, use the aged organic material from the Heavenly stockpile to blend into the on-site soil when possible based on site constraints; and
- When using the aged material is not possible, till wood chips into the on-site soil rather than spreading them over the top of the soil.

B. Improving Wildlife Habitat

- Leave all shrubs and groundcover that are 18" in height or less on the run;
- Plant native shrub or groundcover seedlings in certain areas where they are most likely to survive that mimic the surrounding shrub and groundcover populations where possible in order to encourage plant establishment and provide shelter for rodents (this technique will also provide water quality benefits);
- Leave some areas of bare soil in order to serve as seed caches for rodents and birds;
- When placing rock on the slope, create pockets within groups of rock and create rock ledges with overhangs in order to provide refuge for rodents and small mammals;
- Rocks that rare capped should have any removed pieces that are intact left on the run and arranged in such a manor that leaves overhangs and other spaces for wildlife shelter;
- Provide variety of higher heights of rock, not simply the minimum height of 12 inches (this technique will also provide visual quality benefits).
- Logs equal to or less than 18" diameter will be trimmed of branches so that all branches that are lower in height than the diameter of the log remain in order to provide micro-scale habitat for rodents and small mammals;
- Logs between 12" and 18" diameter should be present in densities at or greater than the surrounding forest or no les than 10 logs per acre, whichever is greater;
- Logs should be aligned across the slope on the ground surface; and
- Logs greater than 18" diameter shall be moved to the edge of the run and aligned across the slope so that the portion of the log that is 18" or less in diameter is left within the run.

In some cases, it may be desirable to leave larger diameter logs in place in the run (up to 24" diameter). In those cases, the prescriptions may be modified to account for larger diameter logs left and different amounts of logs per acre that will be left in the run.

C. Improving Visual Quality

- Randomly feather logs placed across the slope from the cleared run into the edges of the adjacent forested areas in order to add visual variety and avoid uniform log placement.

D. Incorporating Underground Utilities

- Do not create longitudinal depressions or troughs that can serve as conduits for surface water runoff when installing underground utilities and/or removing large volumes of soil or rock which results in a significant alteration of the slope shape.

E. Construction Techniques

- Select the optimum pieces of equipment given the site conditions to achieve the hazard reduction objectives while minimizing unwanted environmental effects. This will influence the type of prescription that is chosen;
- Consider the timing of the work relative to soil moisture, soil compaction potential, the ability to deliver equipment or materials to an unroaded slope while snow pack still exists; and
- Combine slope hazard reduction work with other tasks such as snowmaking installation in order to complete the work with one entry.

4 Snowmaking Master Plan

SNOWMAKING MASTER PLAN

October 27, 2004

Sno.matic Controls and Engineering, Inc.
4 Britton Lane
Lyme, NH 037668

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5 SNOWMAKING MASTER PLAN

BACKGROUND

Heavenly Ski Resort presently covers 309 acres of terrain with machine made snow using a predominantly internal mix air/water system. The system is in good condition, but in the past has been very labor intensive to operate with 4 separate pump stations, 2 reservoirs and 3 compressor locations. The most recent analysis calls for expanding the snowmaking to cover a total of 522.7 acres.[1] The following analysis was completed by Sno.matic Controls and Engineering to provide guidance in expanding and upgrading the snowmaking system in view of recent technological changes in snowmaking. This includes developing strategies to:

1. Improve the safety and efficiency of the existing system
2. Reduce the operating complexities of the existing system
3. Develop a long range strategy to provide coverage for the expansion acreage as outlined under the master plan

EXISTING EQUIPMENT

The existing snowmaking capacity is summarized below:

Compressor Capacity	California	16,800 cfm of permanent air[2]
	Nevada	38,200 cfm of permanent air
	Total	55,000 cfm
Water Capacity	California	5 million gallon reservoir 800 gpm withdrawal from STUPD[3] (pumping up) 2,000 gpm gravity out of CA Dam (flowing down) 1,500 gpm above CA Dam (pumping up)
	Calif. Subtotal	4,300 gpm (2800 lower/1500 upper)
	Nevada	50 million gallon reservoir 600 gpm pumping up from KGID (Stagecoach)[4] 2,800 gpm snowmaking capacity[5]
	Nevada Subtotal	3,600 gpm
	Total Existing Pump Capacity	**7,900 gpm**

[1] International Alpine Design analysis, 01/01/05
[2] In previous years, 9,100 cfm of portable diesel compressor capacity has been rented. As of the 2003 operating season, these machines were eliminated and new fan guns installed with an equivalent production capacity
[3] Pump capacity. Estimated availability 800 gpm/24 hours per day under normal conditions
[4] Pump Capacity. Availability restricted to 600 gpm for 16 hours a day
[5] This does not account for 600 gpm capacity when Stagecoach pumps operated at higher capacity. Operating pumps at this low of a capacity is inefficient and needs to be reviewed.

Low Energy Fan Guns 25 fixed, 12 mobile (as of November 2004)

EXISTING AND PROPOSED ACREAGE

The existing and proposed snowmaking acreage is summarized below:

Table 5-1

2004 Master Plan Amended Facilities - Existing & Proposed Snowmaking Sumary

	Existing (2004)			MPA (04) proposed		
	Acres	***Acre feet***		***Acres***	***Acre feet***	
		(snow)	*(water)*		*(snow)*	*(water)*
California	188	659	366	231	809	449
Nevada	121	424	235	292	1,022	568
Total	**309**	**1,083**	**602**	**523**	**1,831**	**1,017**

The snow volume requirements are based on an assumed snow coverage depth of 2' for beginner terrain, 2.5' on intermediate terrain, and 5' on expert terrain. This translates to an average of approximately 3.5' of snow coverage over all the terrain.

WATER RIGHTS

Water acquisition is complicated for Heavenly since the snowmaking terrain falls in both Nevada and California, as well as inside and outside the Tahoe Basin. Heavenly has water rights for approximately 100 ac-ft (groundwater) in CA and a significantly greater amount of water in Nevada (see attachment 1). However, much of the existing water right is not exercised since presently most snowmaking water is purchased from NV and CA utilities. While the existing rights need to be renewed on an annual basis, there is not any present concern that Heavenly will not have enough water for snowmaking expansion.

Accounting for the water usage is a major issue, however. The present snowmaking system allows water to be transferred between Nevada and California; however any water from one state used in the other must be replenished by year end. Likewise all water pumped out of the Tahoe Basin must be replenished by year end as well In order to be compliant with Master Plan regulations, Heavenly has metered all water that enters or exits each State and the Tahoe basin. These meter readings are automatically recorded in a computer monitoring system installed in 2003.

TEMPERATURE ANALYSIS

A previous analysis of temperatures by Alford Associates (2002) was based on 15 years of NOAA data from the South Lake Tahoe Airport (elev. 6252'). This data was adjusted to statistically match on-site data from the California Dam SNO-TEL site (elev. 8850'). Alford determined that compared to S. Lake Tahoe, the daily temperatures at the CA dam were on average:

In October	minimums 3 degrees higher, maximums 10.4 degrees colder
In November	minimums 1.4 degrees higher, maximums 8 degrees colder
In December	minimums .4 degrees higher, maximums 5.9 degrees colder
In January	minimums 2.5 degrees colder, maximums 5.6 degrees colder
In February	minimums 4 degrees colder, maximums 5.6 degrees colder.

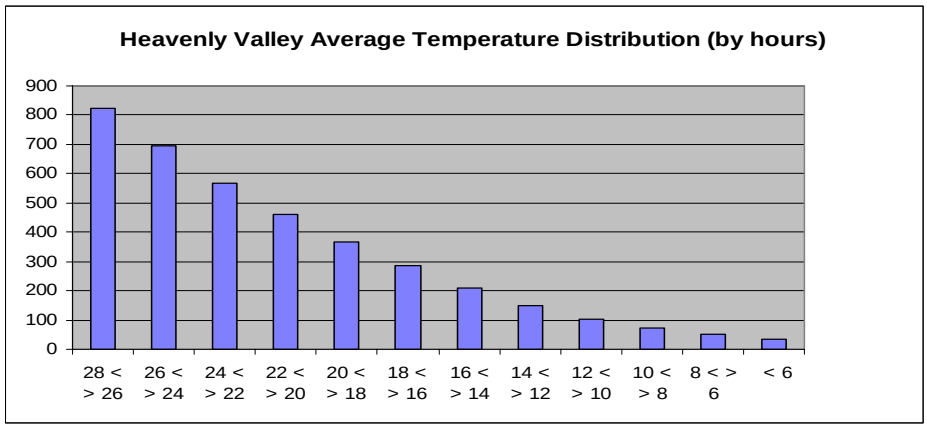
The analysis further predicted the following projected snowmaking hours available:

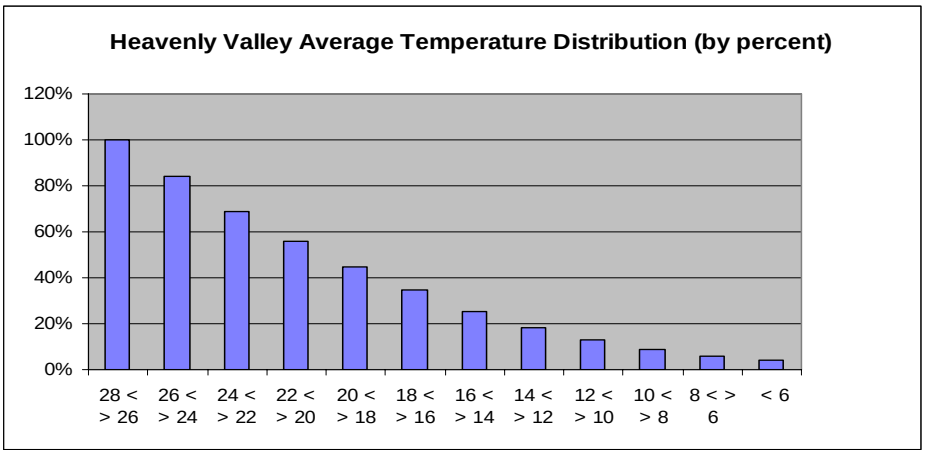
	Hours Below 28			Hours below 26		
Elevation	12 in 20 yrs	15 in 20 yrs	18 in 20 yrs	12 in 20 yrs	15 in 20 yrs	18 in 20 yrs
7500	907.3	755.7	595.2	749.9	319.3	449.1
9150	1036	851.5	661	843.4	672.1	496.7

Source: Alford Report

To further assess snow production potentials at Heavenly, another analysis was completed to predict the expected distribution of temperatures during snowmaking operations. This is necessary since the amount of snow that can be produced typically grows exponentially larger as the temperature decreases.

In this analysis, daily max/min temperatures from the CA Dam Sno-tel site (elevation 8,550) between 1991 and 2002 were analyzed. These 12 years offer enough of a time period to make statistically meaningful projections of future production rates without having to rely on adjusted data from South Lake Tahoe. Analysis of this period of data shows the following average temperature distribution for the period October 1 to December 31:





The results generally agree with the projections of the Alford analysis, and indicate that more than 450 hours (or 50%) of the snowmaking hours occur below 22 degrees, with roughly 200 hours (or 25%) of snowmaking hours below 16 degrees F. Note that these temperatures are dry bulb based so that the benefit of relative humidity have not been factored in. Wet-bulb temperatures can be expected to be at least 2-3 degrees colder than these values, assuming average relative humidity values in the 70-80% range.

This distribution of temperatures is important, because fan guns and internal mix air/water towers have increasing flow potentials as the temperature drops. In addition, external mix air/water towers generally become productive in the 22 to 24 deg WB range, so reliance on this type of technology is dependent on a reasonable percentage of colder operating periods.

Roughly 50% of the ski terrain on the CA side is above the CA dam Snow-tel site elevation, while roughly 2/3 of the the terrain on the NV side is above this elevation. To simplify production projections, this analysis assumes that the CA dam data can be used to develop a slightly conservative estimate of snowmaking production rates without breaking the multiple elevation zones. The higher production rates that will generally occur above the CA dam elevation (due to colder temperatures) are balanced by the lower production rates that will general occur below this elevation (due to warmer temperatures).

An hourly bin analysis of temperatures for each year of the CA dam database is included in Attachment ?. This analysis determines the number of hours during each day for each year that the hourly temperature falls within 2 degree temperature bins.

SNOWMAKING TECHNOLOGY ALTERNATIVES

The following technological alternatives have been evaluated for snowmaking expansion at Heavenly:

1. Internal mix air/water (portable or tower based)
2. External mix air/water (low air towers)
3. Fan guns
4. Automation (can be utilized by any of the previous categories)

Internal Mix Air/Water

The original snowmaking device patented in 1949 used compressed air to shatter a water stream into a spray, and propel this spray into the air to provide enough time airborne to freeze the droplets before they hit the ground. Many modifications have been made to the nozzle configurations of this equipment, but the basic approach is identical to the original design.

A major advantage of this technique is that it very flexible in terms of the type of snow that can be created, or the temperatures at which this snow is made. The nozzles are small and portable, and by varying the water pressure at the gun (by adjusting the water hydrant) the snow quality can be infinitely varied.

Besides this flexibility, internal mix snowguns are relatively inexpensive to purchase and are very portable. This makes it possible to invest in a large numbers of guns that will distribute production over a wide area, making it possible to either concentrate production on one trail to provide early opening or distribute production to provide extensive resurfacing.

The primary disadvantage of this process is the energy consumed by the compressed air. This translates directly to operating costs, which can be very high for internal mix snowguns. A secondary disadvantage is the noise created when large quantities of compressed air expand out of the nozzle. This can make internal mix technology unacceptable in environmentally sensitive areas. A third disadvantage is that the operators typically must manually adjust the water hydrant to obtain the desired snow quality; this can be a time consuming and error-prone process.

External Mix Compressed Air/Water Equipment

External mix snowguns were originally developed in the mid 1970's, but have only been marketed in the last 10 years. These guns utilize high pressure water passing through nozzles located on a 20-35 foot tower to generate a spray. A secondary stream of compressed air is directed into the primary spray at a location approximately 2-6" from the nozzle. This secondary stream provides nucleating particles to the primary stream. A variety of external mix configurations have been developed by nozzle manufacturers with varying amounts of water and compressed air volumes. Typically the towers are fixed on the sides of the trail due to their height, which can restrict operations when unfavorable winds are experienced. Some resorts install the towers in the middle of wider trails to combat this effect.

The primary advantage of external mix guns is their ability to create large volumes of snow with minimal energy, especially at lower temperatures. In addition, water flows through the guns are typically constant through a wide range of pressures, so that these guns do not typically require any adjustment by the snowmaking crews. Because the guns use little compressed air, they are both inexpensive to operate and create minimal noise disturbances. The disadvantage of these guns is susceptibility to inclement winds (due to both location and height of the towers), the fact that they are normally fixed at one location, the inability to adjust the type of snow being produced without changing out nozzle assemblies, and difficulties in generating a uniform snow cover over wide trail.

Recent developments in towers have focused on improving marginal temperature performance, enhancing portability, and enhancing projection through the use of additional compressed air.

Fan Snowmaking

Fan snowmaking guns were developed in the late 1960's to provide better efficiencies and lower operating costs. These guns use a multitude of small pressure nozzles to project a spray into the airflow of a ducted axial fan. The equipment is mounted on a tower or a small, wheeled carriage, with snow quality adjusted by turning on or off banks of nozzles.

To assist in the nucleation of the spray, a small air/water gun is used to generate fine ice particles. This nucleating gun is typically fed by a small on-board vane compressor.
The primary advantage of fan snowmaking guns is their low energy requirements. In addition, fan guns are relatively quiet given the lack of large volumes of expanding compressed air. However, fan guns are much larger than air/water guns, and are more difficult to move, typically requiring a grooming machine. In addition, fan guns are less adaptable to operations that must resurface wide areas of terrain with limited depths due to the high capital cost of each fan gun.

A matrix of advantages/disadvantages for each type of equipment is included below:

INTERNAL MIX AIR/WATER

Advantages	Disadvantages
--Adjustable snow quality at all temps	--High energy requirements
--Portable	--Loud
--Low cost per nozzle	--Variable adjustment
--Good projection	--Operating Costs

EXTERNAL MIX AIR/WATER

Advantages	Disadvantages
--Low operating cost	--limited temp range per setup
--Easy on/off	--Limited projection
--Limits compressor investment	--Fixed snow characteristics
--High productivity	--Often fixed, not portable

FAN

Advantages	Disadvantages
--Low operating cost	--More difficult to move
--Low noise	--High Labor requirement
--Good projection	--High cost per nozzle
--Variable snow quality adjustment	--Requires electrical distribution

There are variations in energy consumption between specific gun set-ups within these categories—especially in external mix towers where performance depends on the type of gun and the nozzles selected for operation.

A summary of typical performance characteristics in terms of water consumption is included in Figure 5. A summary of typical energy consumption for each gun type is indicated in Figure 6.

Automation

Automation provides a mechanism to eliminate many of the traditional inefficiencies that accompany manual snowmaking operations. These inefficiencies result from a variety of factors including:

1. Long periods of start-up/shut-down when flow is not up to the optimal amount because all the snowguns are not on line.
2. Periods when snowguns are shut down while being moved
3. Inaccuracies in the adjustment of each snowgun by different members of the snowgun crew.
4. General inexperience of crews during the early season
5. Slow response to temperature changes when snowguns are operating. This can be due to lack of crew numbers, transport equipment (snowmobiles), supervision, incentive (ie pay), a wide variety of different gun styles, moisture-laden air (requiring frequent hose swaps), and other factors specific to the operation.
6. Poor plant controls with varying pressure or other limitations that prevent the system from operating at full potential

When investigating automation, it is important to consider a number of alternative levels of automation, extending from increasing gun inventory to full fledged "push the button" automation.

In North America, most of the investment in "automation" during the last 5 years has been in purchasing fixed mounted, external mix towers. This generates a double benefit to the resort; first in significantly increasing the snow produced by the same system
capacity (due to the improved efficiency of the guns), and second by reducing the time to start/stop guns (no adjustment; permanently mounted guns). This benefit is somewhat discounted by the fact that the towers are not typically used in marginal temperatures, and are not particularly beneficial when winds are high or shifty. However, lower operating costs and higher production levels during the times when conditions are ideal continue to make this a popular approach.

A secondary level using 'semi-automation' or guided settings for the operators adjusting the guns have not been utilized to any great extent. This concept was initially developed at Killington/Mt. Snow using an air/water gun that has discrete adjustment points depending on temperature (K3000). The concept works well, but has had limited success at other resorts due to widely varying air pressures (which change the necessary setting of the gun). Hydra-link and Sno-link, tools successfully deployed at Sunday River, have had the same problem when adapted to other resorts. Sno.matic has implemented a 3rd type of system using position disks on the hydrants, where a computer is used to determine optimal settings. This has enjoyed limited success, but has not gained acceptance due to difficulties in relaying settings to the gun crews.

The final level of automation involves motorized actuators with automatic adjustment of hydrants. This type of system is prevalent in Europe, and has been introduced to a number of resorts in North America. Each type of system (fan, external mix tower, internal mix air/water) has unique automation requirements:

Fans — All fan gun vendors offer varying levels of automation with different complexities. Since a fan gun has on-board electricity, it is not too difficult to implement automatic operation of the fan, heaters, valves, and carriage. There is generally one level of automation where the gun operates based on a local temperature sensor, but the operator must be present to connect hoses and start the gun. A second level of automation eliminates the operator by intalling an automatic actuator on the hydrant and communicating start/stop commands to the gun via radio or communication wires. This type of automatic gun is becoming common on tower mounted fan guns which are located in strategic or steep areas.

External Mix Towers

External mix towers can be automated easily since no throttling at the hydrant is required. There are two mechanisms in use; one turns on/off individual guns via electric or pneumatic valve actuators, the other turns on a string of guns on a spur via central valving. This style of automation is fairly low cost and can have significant benefits for locations that use large numbers of tower guns

Internal Mix Air/Water guns

Internal mix air/water guns require an adjustment of water flows, and is therefore requires the most expensive type of automation. This technology is offered by York and Ratnik, as well as recent introductions by Techno-Alpin. While there are definitely performance merits to this style of automation on critical runs, capital and maintenance costs remain relatively high.

Several factors to consider with hydrant and gun automation include:

1. The benefit of automation increases with the number of hours that a typical hydrant or gun operates. A typical hydrant covers ½ an acre; which at Heavenly's average water usage of 500,000 gallons per acre results in a hydrant operating approximately 100 hours per season[6]. This makes non-portable automation expensive, since each individual unit sees so few hours. In high traffic areas which need resurfacing, a hydrant may operate 2-3 times longer than this, improving the operating economy of each unit.

2. The benefit of automation also increases in steeper areas, since typically more snow is required and the time it takes to manually set-up guns is longer.

3. The return on the first 10% of the hydrants that are automated is greater than that of the last 10%. The automatic system should work to "buffer" the manual system so that automatic guns can be turned on and off whenever there is excess water and air capacity in the system. The initial hydrants that are automated can provide this buffering at any time to provide, in effect, "free coverage" on the automated zones.

CAPACITY CONFIGURATIONS

A number of alternative combinations of internal mix air/water, fan, and internal mix tower gun capacities were analyzed to determine the snowmaking capacity requirements to achieve the total snowmaking coverage by Christmas. To assess this capacity, the following assumptions were made:

1. 80% of the snowmaking terrain needs to be covered by Christmas in 8 out of 10 years.

2. Snowmaking production rates varying with temperature based on the assumed number of guns and the typical water consumption rates for snowmaking equipment These theoretical production rates were derated by 40% to account for manual operations where flows can not be continuously adjusted with

[6] Assumes 40 gpm out of each gun

variations in temperature. In the build-out system, this derating factor was decreased to 25% to reflect increasing levels of automation

3. Snowmaking operations starting up October 15th, but no allowance for snowmaking operations when the temperature does not dip below 28 deg for more than 8 hours a day.

4. Water balance using the existing storage capacity of CA dam and East Peak Lake, supplemented by recharge as follows (for existing system only):

CA-STUPD Purchased Water	700	gpm (available 24 hrs a day)
NV-KGID Purchased Water	267	gpm (800 gpm available 8 hours per day
CA--surface water assumption	300	gpm
NV--surface water assumption	200	gpm
Total Recharge	1467	gpm
Net--NV recharge rate	467	gpm
Net--CA recharge rate	1000	gpm

5. Storage volume of 50 million gallons on NV side and 5 million gallons on CA side. This is deemed to represent a net of 55 million gallons of storage available to either side of the mountain. There is presently a snowmaking/transfer line that allows water to be pumped between the reservoir; typically this involves transferring approximately 650 gpm from the larger E. Lake reservoir to the smaller CA dam reservoir.

The recommended configuration of equipment for expansion involves incorporating additional low energy technology guns (fans or external mix towers) rather than expanding high energy technology (internal mix air/water). The additional compressed air capacity required for high energy technology is not at this point deemed as practical for economic (high operating costs), operational (high labor requirement) and environmental (high noise impact) reasons.

The results of the analysis are detailed in Attachments 1-3 for the recommended expansion alternatives. The results can be summarized as follows:

1. The existing system can theoretically produce 752 ac-ft of snow by 12/25 with an 80% design frequency (8 in 10 years). This is roughly 14% below the objective of 874 ac-ft for 80% coverage of all terrain.

2. Expanding the existing capacity without increasing recharge to the reservoirs provides only marginal improvements to the production capability of the system because recharge is not enough to keep the reservoirs full; thus during the critical 2 weeks before Christmas there is not enough water in storage to satisfy demand. To fully satisfy existing acreage, the recharge rate must be raised to 2,000 gpm and 8 more fan guns added.

3. To achieve build-out production, the recharge rate to the reservoirs must be increased to 4,000 gpm. In addition, a total of 100 fan guns and 50 tower guns is recommended to achieve to production goal of 1412 acre-ft of snow in 80% of the years.

Over the last 2 seasons, Heavenly has installed a number of low energy fan guns with excellent success. Additional guns will serve both to increase production rates and decrease operating costs. The role of alternative low energy guns (external mix towers) has not been proven at Heavenly given a lack of operating experience. These guns require a different operating philosophy and do not provide many of the distribution benefits of a typical fan gun or internal mix gun. However, they offer an excellent, low cost, efficient alternative for quality snow production at colder operating temperatures, and are easily automated to cover an entire trail. It is recommended that Heavenly assess this technology in the next few years and evaluate if this technology can be successfully integrated in specific areas.

INFRASTRUCTURE DESIGN RECOMMENDATIONS

The implications of these capacity expansion recommendations are provided in the following sections:

1. Water Supply
2. Pumping System
3. Compressed Air System
4. Piping
5. Process Control
6. Water Cooling
7. Automation

These sections include recommendations based on observations of existing system design/operation issues that presently serve to reduce snowmaking production rates.

1. Water Supply

Two factors make the development of additional water supply critical. The first is the high cost of water, which presently amounts to $300,000 to $400,000 of operational cost per year. The second is the need to increase present recharge levels to satisfy increased pumping demands, especially during colder periods in late December. The only alternative to increasing recharge rates is to increase storage volume, an option that has been discounted as non-viable for environmental and permitting reasons.

Since snow production requirements are roughly split between CA and NV sides in the expanded system (714 acre ft in CA vs 759 ac-ft in NV), the ideal supply arrangement would provide equal flows on each side. If anything, a slightly greater supply would be developed on the CA side since storage of the CA dam is substantially lower. However, groundwater resources should be developed as they become available, regardless of location since having the water is more important than having it in a certain location.

The build-out system will require an additional 2,500 gpm of recharge. This will likely be supplied by a combination of ground water supplied by new wells and purchased utility water. An obvious alternative resource is the immense capacity of Lake Tahoe. However, water withdrawal from Lake Tahoe has significant permitting issues that need to be weighed against cost of developing groundwater and/or the ongoing cost of purchasing water from the utilities.

2. Pumping System

Both the capacity and pressure of the existing pumping system will need to be increased to provide expanded coverage and accommodate fan/external mix air/water technology. The existing pumping system provides the following operating pressures:

- **L CA** Pumps generate 1100 psi discharge pressure at design (including 60 psi of suction pressure from water utility). This generates 250 psi pressure at the CA dam pumphouse, allowing for 50 psi of friction loss. No change in operating pressures are required.

- **CA Dam** Pumps generate 805 discharge pressure at design. This generates 239 psi at the top of the Sky Express lift, allowing for 25 psi of friction loss. Higher friction rates are likely given existing pipe sizing, but this can be resolved with pipe replacement. This pressure is a little low at the summit, but modifications are not recommended since only a small portion of the terrain is impacted by restrictions.

- **Stagecoach** Pumps generate 606 psi discharge pressure at design. This generates roughly 200 psi at the East Peak Reservoir assuming 50 psi of friction loss. However, the pipeline runs over a saddle at 9,000 foot elevation which drops pressure at the high point to 15 psi if a 50 psi friction allowance is assumed. This is a high friction allowance, but it illustrates why these pumps are used primarily for transferring water as opposed to snowmaking capacity.

  Stagecoach pumps are also run at higher pressures/lower flows to match downhill pressures generated by the E. Peak PH. This is not an operating mode that is recommended for future expansion

- **E. Peak** Pumps operate at 814 psi which generates 244 psi at the summit of the Dipper Express, assuming 50 psi of friction loss. This pressure is acceptable and can be increased by lowering friction rates with piping upgrades.

Recommendations for each pump station are as follows:

- **L CA** Capacity of L. CA will depend on utility supply rates and any potential groundwater development. This pumphouse is marginal condition, has poor maintenance characteristics (low head room, poor access) and is not in an ideal location from a real-estate/guest standpoint. Therefore a new pumphouse is recommended (location to be determined) with capability to add 2 more vertical pumps, bringing total capacity to 2,000 gpm. .

- **CA Dam** Existing pumps provide only 1500 gpm of capacity for a large expanse of acreage. This capacity needs to be upgraded to roughly 2,500 to 3,000 gpm to promote efficient operation and the ability to cover upper terrain quickly when cold temperatures permit. There are two options to investigate:

1. Install 4 new vertical turbines at 400 HP/650 gpm each (or 500 HP/800 gpm each. These units will fit in the existing pit area, though accommodation of the existing low pressure pump for lower mountain operation must be made.

2. Retain the existing 3 x 250 HP units and add two or three 400 HP/650 gpm pumps in an expanded wet well.

This pumphouse pressure control has recently been converted to utilize energy efficient VFD's. This addition has improved both the pressure control and effectiveness of the existing pumps.

- **Stagecoach** The Stagecoach PH has been recently converted to VFD control and remote operation. If increased water recharge volumes can be expected from either KGID or a new groundwater resource in this region, there are 2 options to consider:

  1. Install a transfer pipeline on Way Home to allow water to be pumped from Stagecoach to E. Peak reservoir without flowing over the saddle (during non-recharge periods this line could be supplied with increased pressure for snowmaking coverage on Way Home). This would also supply snowmaking operations on the lower mountain (Upper Edgewood Bowl summit and below). The result would be the ability to pump 1300 gpm per pump using 400 HP motors.

  2. Increase the flow capacity at Stagecoach at the existing pressure regime. This would require new 400 HP units to match the existing 800 HP pumps.

  Valving should be installed on hill piping as required to allow the Stagecoach pumps to provide snowmaking pressures directly on the lower areas of the NV terrain and eliminate the present practice of running these pumps at low flow/high pressure. This provides the dual benefit of more efficient pump operation and enhanced safety for operators (using E. Peak pumps generates approximately 1350 psi at the base of the Boulder lift—this is not recommended based on coupling and hose pressure considerations).

- **E. Peak** East Peak pumphouse is the newest facility and has a capacity of 2,800 gpm. No modification is necessary for these pumps except for the recommended integration of a VFD for pressure control. However, low pressure pumps are recommended for lower mountain operations to decrease operating pressures and increase efficiencies. These pumps should develop 300 psi at the top of the North Bowl lift, resulting in a discharge pressure requirement of 500 psi. This will require two 300 HP pumps, each with 800 gpm capacity (alternative 1 x 400 HP to provide 1,000 gpm).

  Dropping the pressure for the lower mountain will require a different strategy for covering the top of the Olympic Chair (9,500 feet). This can be achieved by running a separate feed line to the top of North Bowl or installing piping on Ponderosa or Bonanza to feed the top of Olympic.

3. Compressed Air System

No modifications are recommended on the compressed air system at this time. However, temperature measurements should be collected to determine the effectiveness of:

- Spray cooling of existing compressor cooling water. If the compressor cooling water is warming up the reservoir temperatures, cooling towers should be integrated prior to dumping the water into the reservoir.

- Effectiveness of the tube coolers are installed at the CA Dam compressor location. If these coolers do not achieve adequate cooling/moisture separation, they should be replaced with either radiator style coolers or a cooling tower/shell and tube combination.

4. Piping

The existing piping at Heavenly Valley is undersized and will need a significant amount of upgrading to achieve the desired capacities. Piping modification recommendations are included in Figure x (not completed)

5. Process Control

The large expanse of terrain covered with snowmaking, coupled with a relatively complicated water supply configuration (2 reservoirs, 4 pumphouses) makes snowmaking operations at Heavenly complex. This situation is exacerbated by the lack of remote operating capability at each pump and compressor location. It is critical that the present process control system at Heavenly be upgraded to provide the following functionality:

- Remote operating capacity for each location. This is most critical for pumphouses that do not need to be manned on a permanent basis (specifically Stagecoach, CA Dam, and L. CA). One plant operations supervisor should be able to control all equipment from a central location (or locations)

- Monitoring and logging of system flows, including the multiple flow monitoring sites required for environmental compliance (showing flows entering and leaving CA/NV and In-Basin/Out of Basin).

- Effective reporting and logging of temperatures and performance values that will provide for effective crew management as well as evaluation of the true impact of technology improvements.

A new process control system was installed in 2003 to accomplish these tasks. This process control system will improve the operating efficiency of the system and decrease the complexity of operations.

6. Water Cooling

Water cooling provides an efficiency benefit for all types of snowguns due to improved nucleation efficiency (sources indicate 15-30% benefit). There is an existing water cooler at the STPD intake,

however capacity of this cooler is limited. As water flows increase, additional cooling capacity will be required at this location. In addition, water from KGID (which is not presently cooled) should be provided with cooling equipments, as will any newly developed well sites. Specific equipment recommendations on water cooling will depend on the location of new well sources.

7. Automation

Automation will play a critical role in providing the system at Heavenly with the ability to efficiently react to temperature conditions over a wide area. However, the prevalence of surface piping reduces the potential benefits of automation since lines must be charged and drained after usage. While automation alternatives in snowmaking change each year, the following are recommendations for implementation within the next 1-3 years:

- All pump stations and compressor plants should be automated to the extent that one supervisor can efficiently operate each plant. This was described in the process control section, but can easily include the automatic sequencing of pumps to maintain pressures; thereby simplifying the task of the control supervisor.

- Fan guns should be supplied with automatic performance capability for locations that are frequently used and areas where access is difficult, dangerous, or time consuming.

- Tower guns should be installed on spur lines where appropriate so that operating a single set of valves will turn an entire string of guns on, similar to typical operations on a golf course irrigation system. This technique is limited to areas where wind conditions permit the operation of multiple guns consistently[7], but offers a very cost-effective manner of automating large areas.

Automation of individual internal mix air/water guns is possible, but the capital cost to implement this type of automation is high, as are the typical maintenance requirements. For this reason this type of automation is not recommended at the present time.

SUMMARY AND CONCLUSIONS

Heavenly Valley has made a number of significant improvements to snowmaking operations in the last 2-3 years including the addition of a number of low energy fan guns, elimination of rented diesel compressors, and installation of a process control system. The existing system is presently constrained by water recharge rates to the existing reservoirs, and to adequately cover the existing snowmaking acreage on an 80/80 basis (80% of the snowmaking acreage in 80% of the years), roughly 500 gpm of additional supply is required. To accommodate the expansion of snowmaking terrain to 522 acres (from the existing 300 acres), the water supply system will need to be revamped to provide 4,000 gpm of recharge to the present reservoirs, along with the addition of 50 more fan guns.

To accomplish these goals, modifications to the piping and pumping systems will be required, especially on the California side. In addition, expanded water cooling systems are recommended as well as increased level of gun automation, especially with fan guns and tower guns.

[7] Any individual gun can be turned off manually, but this requires a manual operation which somewhat decreases the utility of the system.

ATTACHMENT 1...HEAVENLY VALLEY

Nevada Water Rights

	Water Right Permit Number					
	57651	**60743**	**60744**	**60745**	**60746**	**60747**
Holder of Rights	U.S.D.A Forest Service, Lake Tahoe Basin Mangement Unit	United States of America, United States Department of Agriculture, Forest Service	United States of America, United States Department of Agriculture, Forest Service	United States of America, United States Department of Agriculture, Forest Service	Heavenly Valley, A Nevada Limited Partnership	United States of America, United States Department of Agriculture, Forest Service
Priority Date of Right	1978 (under Permit 35556)	1982 (under Permit 45348)	1982 (under Permit 45348)	1987 (under Permit 50525)	1990 (under Permit 54368)	1994
Point of Diversion	Underground SE¼SW¼ Sec. 31, T.13 N., R.19 E.	Underground SE¼SW¼ Sec. 31, T.13 N., R.19 E.	Underground SE¼SW¼ Sec. 31, T.13 N., R.19 E.	Daggett Creek SE¼SW¼ Sec. 31, T.13 N., R.19 E.	Underground NE¼SW¼ Sec. 30, T.13 N., R.19 E.	Underground SE¼SW¼ Sec. 31, T.13 N., R.19 E.
Permitted Diversion Period	January 1 to December 31	January 1 to December 31	June 15 to April 15	November 2 to March 14	January 1 to December 31	June 15 to April 15
Permitted Diversion Rate	0.003 c.f.s, not to exceed 0.066 mga[1]	0.003 c.f.s., not to exceed 1.0 acre-feet annually[1]	0.467 c.f.s, not to exceed 142.67 acre-feet per season[2,3]	0.5 c.f.s, not to exceed 122.75 acre-feet per season[3,4]	0.55 c.f.s., not to exceed 100 acre-feet annually non-consumptive use[2,3]	1.868 c.f.s., not to exceed 470.68 acre-feet per season for the non-consumptive use of snow making[2,3]
Diversion Facility	drilled well and pump	drilled well and pump	drilled well and pump	surface pump	drilled well and pump	drilled well and pump
Storage Facility	East Peak Lake	N/A	East Peak Lake	East Peak Lake	N/A	East Peak Lake
Use	Recreation	Recreation	Snowpack Augmentation (snowmaking)	Snowpack Augmentation (snowmaking)	Snowpack Augmentation (snowmaking)	Snowpack Augmentation (snowmaking)
Place of Use	S½ Sec. 30, portion of W½ Sec. 31, T.13 N., R.19 E.; portion of SE¼ Sec. 36, T.13 N., R.18 E.; portions of NE¼ Sec. 1, T.12 N., R.18 E.; and NW¼ Sec. 6, T.12 N., R.19 E.	S½SW¼ Sec. 31, T.13 N., R.19 E.	within por. W½ Sec. 20, por. E½, SE¼NW¼ and E½SW¼ Sec. 30, E½ and por.W½ Sec. 31, NW¼ Sec SE¼ Sec. 36, T.13 N., R.18 E.; por. E½ Sec. 1, T.12 N., R.18 E.; W½E½, and por. E½E½ and W½ S MDB&M			

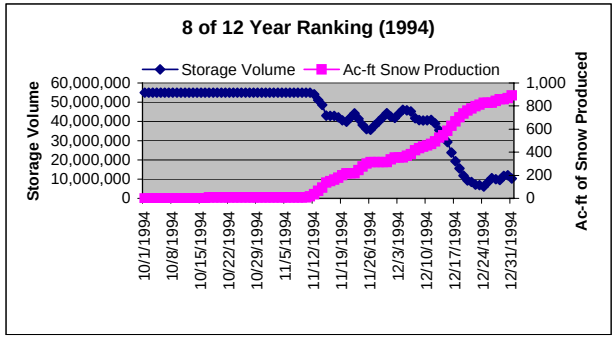
HEAVENLY VALLEY SNOWMAKING SYSTEM PROJECTIONs
EXISTING SYSTEM

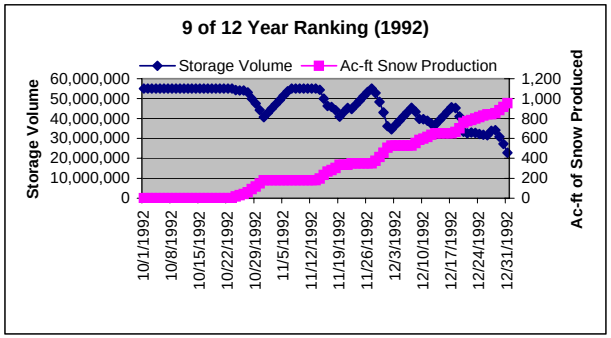
MODEL ASSUMPTIONS			
Snowmaking Water Capacity (gpm)	7,900	Starting Month	15-Oct
Recharge capacity (gpm)	1,500	Fan Guns	37
Compressed Air Capacity (cfm)	55,000	Tower Guns	0
Storage Capacity (million gallons)	55	Start-up Temp	28

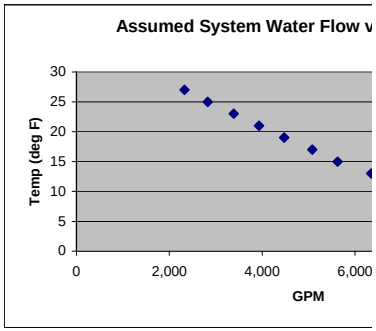
MODEL RESULTS (PRODUCTION BY 12/25)	
Snow Production Goal	840
8 of 10 Year Production	752
7 of 10 year Production	829
Average Production by 12/25	874

(note: Snow Production goal is 80% snowmaking covera

		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
October 15-31	Acre-ft Snow Produced	12	180	25	10	85	16	262	21	76	8
	Cumulative Acre-ft by 10/31	12	180	25	10	85	16	262	21	76	8
	Storage Volume on 10/31	55,000,000	40,704,956	52,809,576	55,000,000	54,193,670	55,000,000	36,707,848	55,000,000	53,158,404	55,000,000
Nov 1-15	Acre-ft Snow Produced	143	53	75	127	350	0	126	145	265	21
	Cumulative Acre-ft by 11/15	155	234	100	137	435	16	388	166	341	29
	Storage Volume on 11/15	55,000,000	49,962,202	55,000,000	42,987,621	23,925,660	55,000,000	47,037,891	46,888,549	38,926,154	55,000,000
Nov 16-30	Acre-ft Snow Produced	202	222	295	178	277	41	221	176	178	162
	Cumulative Acre-ft by 11/30	357	456	395	315	712	56	609	342	519	191
	Storage Volume on 11/30	44,772,122	43,029,539	31,342,474	44,286,045	0	55,000,000	40,749,195	48,502,729	40,180,732	54,529,676
Dec.1-15	Acre-ft of Snow Produced	199	195	360	271	164	89	297	327	400	353
	Cumulative Acre-ft by 12/15	556	651	755	586	876	145	906	669	918	544
	Storage Volume on 12/15	40,156,269	41,274,436	0	29,308,552	0	47,559,612	21,140,825	23,723,060	2,630,115	25,205,566
Dec 16-25	Acre-ft of Snow Produced	318	178	119	243	102	290	185	250	119	10
	Cumulative Acre-ft by 12/25	874	829	874	829	978	435	1,091	919	1,037	554
	Storage Volume on 12/25	0	31,772,128	321,882	8,323,019	3,719,215	18,469,213	10,360,175	0	0	45,059,342
Dec 26-31	Acre-ft of Snow Produced	72	125	72	63	92	59	45	36	49	62
	Cumulative Acre-ft by 12/31	946	954	946	892	1,070	494	1,136	955	1,086	616
	Storage Volume on 12/31	0	22,816,905	0	10,328,993	0	21,092,246	15,435,373	6,480,000	4,226,733	47,220,964
Season Production Ranking by 12/25		7	9	6	8	3	12	1	4	2	11







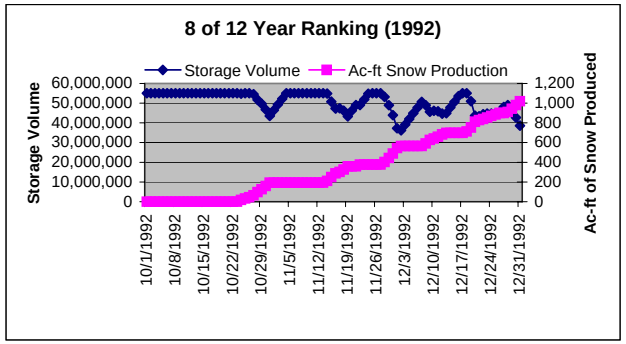
HEAVENLY VALLEY SNOWMAKING SYSTEM PROJECTIONs
EXPANDED SYSTEM

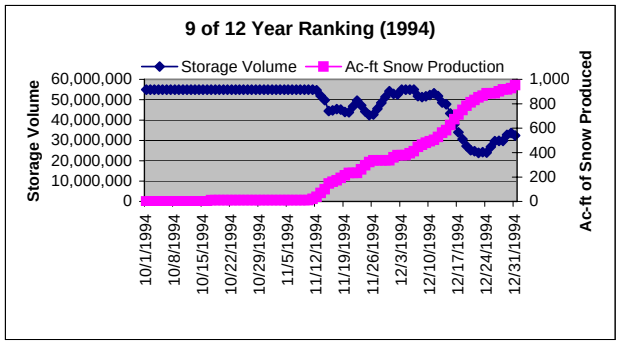
MODEL ASSUMPTIONS			
Snowmaking Water Capacity (gpm)	7,900	Starting Month	15-Oct
Recharge capacity (gpm)	2,000	Fan Guns	45
Compressed Air Capacity (cfm)	55,000	Tower Guns	0
Storage Capacity (million gallons)	55	Start-up Temp	28

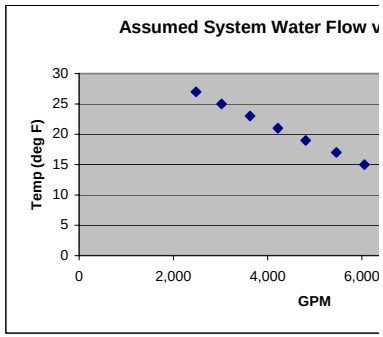
MODEL RESULTS (PRODUCTION BY 12/25)	
Snow Production Goal	840
8 of 10 Year Production	866
7 of 10 year Production	885
Average Production by 12/25	957

(note: Snow Production goal is 80% snowmaking covera

		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
October 15-31	Acre-ft Snow Produced	13	193	26	11	92	17	281	23	81	9
	Cumulative Acre-ft by 10/31	13	193	26	11	92	17	281	23	81	9
	Storage Volume on 10/31	55,000,000	43,516,154	53,261,391	55,000,000	54,697,510	55,000,000	42,157,583	55,000,000	53,595,099	55,000,000
Nov 1-15	Acre-ft Snow Produced	153	57	81	137	372	0	135	156	284	23
	Cumulative Acre-ft by 11/15	166	251	107	147	464	17	416	178	365	32
	Storage Volume on 11/15	55,000,000	50,706,682	55,000,000	44,369,281	29,503,069	55,000,000	54,424,338	48,800,125	44,296,501	55,000,000
Nov 16-30	Acre-ft Snow Produced	214	238	317	191	395	44	237	189	191	172
	Cumulative Acre-ft by 11/30	380	489	424	338	859	60	653	367	556	204
	Storage Volume on 11/30	49,583,103	43,866,534	36,318,954	54,222,324	552,855	55,000,000	47,484,318	55,000,000	51,823,190	55,000,000
Dec.1-15	Acre-ft of Snow Produced	211	208	447	289	234	96	317	349	420	377
	Cumulative Acre-ft by 12/15	591	697	871	627	1,093	156	970	717	976	581
	Storage Volume on 12/15	41,912,092	50,669,245	1,294,579	43,275,120	0	48,695,372	35,231,608	37,040,685	21,476,077	32,160,233
Dec 16-25	Acre-ft of Snow Produced	390	189	152	259	112	311	199	364	277	11
	Cumulative Acre-ft by 12/25	981	886	1,023	885	1,205	467	1,169	1,081	1,254	592
	Storage Volume on 12/25	0	44,782,854	1,607,220	26,830,026	9,066,335	23,124,532	29,256,398	2,083,711	0	55,000,000
Dec 26-31	Acre-ft of Snow Produced	96	134	100	67	143	63	48	45	60	66
	Cumulative Acre-ft by 12/31	1,077	1,020	1,123	952	1,348	530	1,217	1,126	1,314	658
	Storage Volume on 12/31	0	38,623,585	0	32,373,176	0	29,308,206	38,104,476	9,192,767	6,633,457	54,208,081
Season Production Ranking by 12/25		6	8	5	9	2	12	3	4	1	11







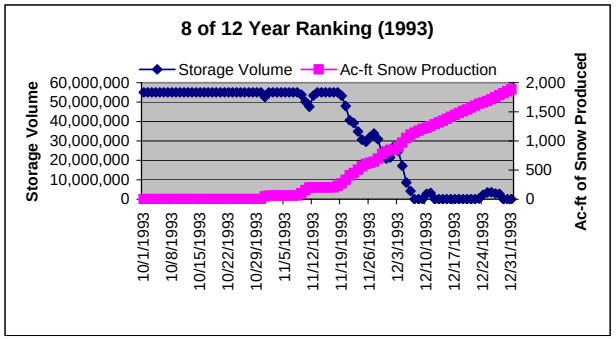
HEAVENLY VALLEY SNOWMAKING SYSTEM PROJECTIONs
BUILD OUT SYSTEM

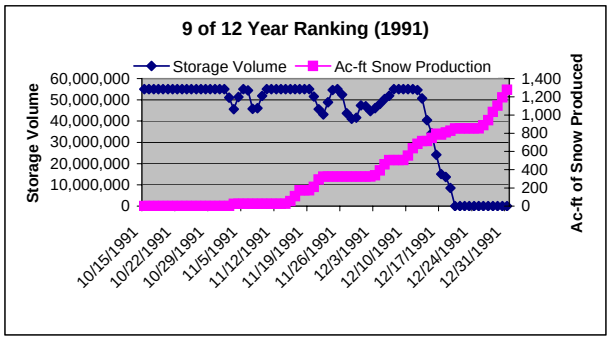
MODEL ASSUMPTIONS			
Snowmaking Water Capacity (gpm)	12,000	Starting Month	15-Oct
Recharge capacity (gpm)	4,000	Fan Guns	100
Compressed Air Capacity (cfm)	55,000	Tower Guns	50
Storage Capacity (million gallons)	55	Start-up Temp	28

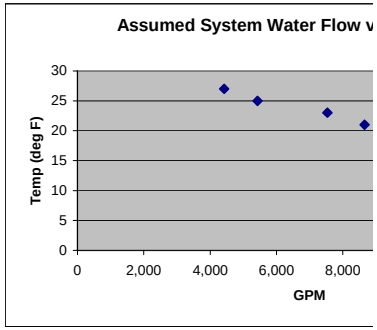
MODEL RESULTS (PRODUCTION BY 12/25)	
Snow Production Goal	1414
8 of 10 Year Production	1,426
7 of 10 year Production	1,601
Average Production by 12/25	1,677

(note: Snow Production goal is 80% snowmaking covera

		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
October 15-31	Acre-ft Snow Produced	25	363	47	21	181	33	549	45	156	17
	Cumulative Acre-ft by 10/31	25	363	47	21	181	33	549	45	156	17
	Storage Volume on 10/31	55,000,000	35,610,488	52,621,255	55,000,000	54,615,464	55,000,000	31,275,846	55,000,000	52,656,568	55,000,000
Nov 1-15	Acre-ft Snow Produced	298	115	156	256	685	0	259	309	554	45
	Cumulative Acre-ft by 11/15	324	478	203	277	866	33	808	354	710	62
	Storage Volume on 11/15	55,000,000	46,329,293	55,000,000	36,506,631	14,072,969	55,000,000	53,859,850	42,815,717	35,650,242	55,000,000
Nov 16-30	Acre-ft Snow Produced	390	453	615	367	506	86	460	370	367	319
	Cumulative Acre-ft by 11/30	713	931	817	644	1,372	119	1,269	724	1,077	381
	Storage Volume on 11/30	47,407,705	35,621,529	20,886,424	55,000,000	1,076,002	55,000,000	41,141,411	55,000,000	48,880,820	55,000,000
Dec.1-15	Acre-ft of Snow Produced	389	394	564	552	454	187	592	672	705	693
	Cumulative Acre-ft by 12/15	1,102	1,325	1,381	1,196	1,827	306	1,861	1,396	1,782	1,074
	Storage Volume on 12/15	34,259,778	53,093,619	0	35,950,911	0	43,047,037	23,952,551	23,772,492	8,234,465	20,061,060
Dec 16-25	Acre-ft of Snow Produced	470	342	303	474	222	571	385	432	369	21
	Cumulative Acre-ft by 12/25	1,573	1,667	1,684	1,670	2,048	878	2,246	1,828	2,150	1,096
	Storage Volume on 12/25	0	40,554,591	3,468,425	10,598,596	18,622,403	0	14,111,237	0	0	55,000,000
Dec 26-31	Acre-ft of Snow Produced	192	252	199	131	302	111	94	91	118	129
	Cumulative Acre-ft by 12/31	1,765	1,919	1,883	1,801	2,350	988	2,340	1,918	2,268	1,224
	Storage Volume on 12/31	0	30,980,280	0	22,280,057	342,046	14,996,972	32,284,885	18,345,944	13,638,508	53,528,991
Season Production Ranking by 12/25		9	8	6	7	3	12	1	4	2	11







5 2006 Project Descriptions

5 2006 Project Descriptions

1. Project Name: North Bowl Express Chairlift Replacement and Ski Runs S8, S9 and S10

Lift Replacement Project Description: Remove the existing fixed grip North Bowl and Olympic chairlifts and replace them with one new detachable 4-person lift. The base station (return terminal) of the replacement lift will be located on the same footprint as the existing North Bowl lift which will be removed. A short section of parking rail for chair maintenance will be added at the base station.
The top station (drive terminal) of the lift will be located at the site of the existing Olympic lift top station, which will also be removed. The entire project is located within the Tahoe Basin. The lift line is located in part, to avoid exposure to west winds along the Western Perimeter ridgeline.

The following existing developed sites will be removed and restored:

- Olympic lift base station;
- Olympic lift base station maintenance road;
- North Bowl lift top station; and
- North Bowl lift mid station.

The new uphill capacity will be 2,600 persons/hour. The combined uphill capacity of the two existing lifts is 2,690 persons/hour. The additional capacity would be allocated from the Nevada-side Plan Area Statement PAOTs which are in the Master Plan. A net difference of (2,600 – 2,690)* 0.31 = 28 PAOTs will be banked as a result of the project.

The line gauge of the new lift will be approximately 4.8 meters which is slightly smaller than the Canyon Express lift that was installed in 2003. A new lift line will be cleared from the base station to the top station. The cleared line will be approximately 10.0 meters wide (33 feet) by approximately 6,860 feet long. It includes a five-foot clearance zone from the edge of the carriers required for safety reasons by the ANSI code. The vertical change is approximately 1,810 feet. The lift line will traverse sections of the lower North Bowl and upper Olympic runs which are already cleared. Approximately 25 line towers are needed

At the same time, a filled and disturbed portion of the existing Edgewood SEZ will be restored. The restored SEZ is incorporated into the project design. It will be approximately 2 acres in size. Land coverage will be relocated from the existing access road, existing lift terminals and line tower footings. Additional land coverage is needed to implement the project beyond that which will be relocated. The additional coverage is available from other restored sites within the project area. Additional grading surrounding the south and east areas of the base station terminal is proposed in order to facilitate safe skier circulation and access to the lift. A groundwater exception request for areas of cut which will exceed five feet has been separately submitted.

Land coverage for the new lift improvements is estimated as follows:

- Base terminal (27' x 70') 1,890 sf
- Operator's booth (10' x 20') 200 sf
- Parking rail footings (4 @ 9 sq. ft. ea.) 36 sf
- Top terminal (27' x 70') 1,890 sf
- Operator's booth (10' x 20') 200 sf
- Line tower footings (25 @ 16 sq. ft. ea.) 625 sf

Total 4,841 sf

Land coverage to be removed and restored for the two existing lifts and related improvements is estimated as follows:

Olympic Lift

- Base terminal 958 sf
- Base terminal operator's booth 33 sf
- Top terminal 375 sf
- Top terminal operator's booth 33 sf
- Line tower footings (15 @16 sq. ft. ea.) 240 sf
- Summer maintenance road to base (12' x 420') 5,040 sf

Sub-total 6,679 sf

North Bowl Lift

- Base terminal 958 sf
- Base terminal operator's booth 33 sf
- Top terminal 375 sf
- Top terminal operator's booth 33 sf
- Line tower footings (28 @ 16 sq. ft. ea.) 448 sf

Sub-total 1,847 sf

Total 8,526 sf

The overall net change in land coverage is a decrease of 3,685 square feet. The coverage will be relocated as part of a separate project.

Tree removal for the lift line has been field surveyed. The exact number of trees to be removed is disclosed in the Draft EIR/EIS.

Temporary and permanent water quality BMPs will be installed and maintained on all components of the project, including the restored sites.

Ski Runs Project Description: Three new ski runs will be added to the North Bowl Express trail pod in order to balance the uphill lift capacity with the trail or run capacity. In the Master Plan Amendment, they are designated in Table 3-3 and on Figure 3-1 as runs S8, S9 and S10. They will have the following characteristics:

Run Name	Length	Width	Acreage
S-8	1,516 ft.	125 ft.	4.4 ac.
S-9	2,311 ft.	125 ft.	6.6 ac.
S-10	2,461 ft.	125 ft.	7.1 ac.
Totals			18.1 ac.

Tree removal for the runs has been field surveyed. The exact number of trees to be removed is disclosed in the Draft EIR/EIS.

The runs will be constructed by removing all trees greater than 18" diameter by helicopter. A log deck will be established in the Boulder Lodge parking lot. Logs that are less than 18" diameter or are otherwise not removed by helicopter (e.g., not structurally sound) will be limbed and directionally felled perpendicular to the slope to act as water bar or slope breaks. No other surface vegetation will be removed. All existing shrubs and groundcover will remain in place. The following prescription will be used for downed logs left in or near the trail:

- Logs equal to or less than 18" diameter or otherwise left will be trimmed of branches so that all branches that are lower in height than the diameter of the log remain in order to provide micro-scale habitat for rodents and small mammals;
- Logs between 12" and 18" diameter should be present in densities at or greater than the surrounding forest or no less than 10 logs per acre, whichever is greater;
- Logs will be aligned across the slope on the ground surface; and
- Logs greater than 18" diameter will be moved to the edge of the run and aligned across the slope so that the portion of the log that is 18" or less in diameter is left within the run.

2. Project Name: Sand Dunes Lodge

Project Description: Construct a new mid mountain lodge and restaurant adjacent to the upper section of Sand Dunes Trail below the Tamarack Express lift at an elevation of approximately 9,600 feet. The lodge will be located outside of the Tahoe Basin. The lodge will utilize portions of the seating capacity that had previously been approved for the top of the gondola lodge. The lodge would be approximately 18,000 square feet in footprint area, and will step down the slope in a two-story configuration with a maximum building height of 35-40 feet. The seating capacity of the lodge is proposed to include 600 indoor seats and 400 outdoor seats on a series of decks that step down the slope. As a part of the Master Plan Update, the approved lodge floor area and seating capacities at the gondola top station and East Peak Lodge will be reduced in size and the difference transferred to the Sand Dunes Lodge.

The lodge will offer unmatched views of both Lake Tahoe to the north and west, and the Great Basin and the Carson Valley to the east. It is located outside of the Tahoe Basin within Alpine County, California. The building will be sited so as not to be substantially visible from Lake Tahoe and other key viewpoints using the existing forest backdrop and topography to help it recede into the background view shed. It will be stepped down the slope and not extend above any ridgelines. It will incorporate LEED-design and operations principles and will utilize natural exterior building materials.

Program elements of the lodge will include:

- Food and beverage
- Seating
- Guest services desk
- Accessory retail counter
- Ski School desk
- Restrooms
- Employee area
- Storage

Access Road: A new construction access and maintenance road will be constructed in order to connect the gondola area with the lodge site. It will begin near the basin boundary near the intersection of Steve's Road and Crossover Trail. The roadway will be located entirely outside of the Tahoe Basin.

The new segment of maintenance road will be aligned along the contour in order to minimize grade and cut and fill prisms. It will be consistent with Forest Service roadway design standards and guidelines. It will be twelve feet wide by approximately 2,660 feet long. Temporary and permanent water quality BMPs will be incorporated into the road. The road will cross the existing Comet, Little Dipper and Aries runs and then connect into the existing maintenance road at a point just below the existing "T" intersection. The road will then join the existing maintenance road for a distance of approximately 300 feet. Following that, a new 400-foot road segment will run directly to the lodge.

The existing maintenance road that travels up Orion's Run will be decommissioned and restored. This road segment is twelve feet wide by approximately 3,000 feet long. It runs from the intersection with the Mott Canyon lift top station maintenance road to the intersection with the new road described above.

All utilities serving the lodge site will be extended underground from existing services. Electrical power will be extended from the existing line located near the top of the Dipper Express lift. Telephone, fiber optic cable and sewer lines will be extended from the existing systems at East Peak Lodge. They will travel up Comet Run in a common trench where they will intersect the existing maintenance road that dead ends at the top of the Comet Express lift. Water service will

be extended from the existing water tank along Von Schmidt's Trail and travel down Von Schmidt's Trail and then travel up Steve's Road to the intersection with Crossover Trail. Natural gas will be extended from the same Steve's Road/Crossover trail intersection up Steve's Road in a common trench with the water line extension. From that point, they will run up Comet run to the top of the Comet Express lift where the will use the existing maintenance road alignment to reach the lodger site. All trenches will be constructed using temporary and permanent water quality BMPs.

Fire Suppression Water Tank: A 150,000-gallon water tank for fire suppression purposes will be located at a proper elevation above the lodge. It will be located out if the Basin in an area above the Dipper Express top station. It will be sited so as not to be visible from key off-site viewpoints. Design elements such as lowered tank height (proposed as 24 feet tall), compatible colors, and a matte finish will be used in order to ensure that is not visually evident within the resort.

3. Skiways Glades Trail

Project Description: Develop two new gladed trails featuring an "off-piste" skiing experience from the Skyline Trail down to the California Trail in the area within the resort known as the Skiways. The trails will be developed using very selective removal of smaller diameter trees to create openings that average 40-60 feet in width in order to safely groom with a snow cat. No surface vegetation will be removed. All existing shrubs and groundcover will remain in place.

Large diameter trees which provide visual screening from key off-site viewpoints and wildlife habitat will be left. The layout of the glades will meander in the upper portions to take advantage of natural forest openings and the fall line. In the lower half of the glades minimal tree removal is needed because of the existing forest openings. In certain areas, there will be sections where the forest opening (combining natural and cleared openings together), will be as large as 75-80 feet wide. The overall length of glades is approximately 3,000 feet.

However, due to the long distances to key off-site viewpoints, the selective removal of small materials, the retention of large diameter screening trees, and the existing forest patterns there will be minimal visual differences noticeable to the average viewer.

The following prescription will apply to the trees that are removed in order to create the gladed trail:

- All trees that are cut will be left on site;
- Trees that are cut will be limbed and directionally felled perpendicular to the slope to act as water bar or slope breaks;
- All logs will be trimmed of branches so that all branches that are lower in height than the diameter of the log remain in order to provide micro-scale habitat for rodents and small mammals;
- Logs will be aligned across the slope on the ground surface; and

- Logs greater than 24" diameter will be moved to the edge of the run and aligned across the slope so that the portion of the log that is 24" or less in diameter is left within the run.

4. Powderbowl Glade Trail

Project Description**:** Develop one new gladed trail featuring an "off-piste" skiing experience from the top of the existing Powderbowl Express lift to Lower Mombo Trail in an area within the resort known as the Powderbowl trees. The trail will be developed similar to the Skiways glades using very selective removal of smaller diameter trees to create openings that average 40-60 feet in order to safely groom with a snow cat. No surface vegetation will be removed. All existing shrubs and groundcover will remain in place.

Large diameter trees which provide visual screening from key off-site viewpoints and wildlife habitat will be left. In certain areas, there will be sections where the forest opening (combining natural and cleared openings together), will be as large as 75-80 feet wide. The length of the glade is approximately 1,600 feet.

Due to the long distances to key off-site viewpoints, the selective removal of small materials, the retention of large diameter screening trees, and the existing forest patterns there will be minimal visual differences noticeable to the average viewer.

The following prescription will apply to the trees that are removed in order to create the gladed trail:

- All trees that are cut will be left on site;
- Trees that are removed will be limbed and directionally felled perpendicular to the slope to act as water bar or slope breaks;
- All logs will be trimmed of branches so that all branches that are lower in height than the diameter of the log remain in order to provide micro-scale habitat for rodents and small mammals;
- Logs will be aligned across the slope on the ground surface; and
- Logs greater than 24" diameter will be moved to the edge of the run and aligned across the slope so that the portion of the log that is 24" or less in diameter is left within the run.

5. Project Name: Gondola Hiking and Cross-Country Ski/Snowshoe Trails

Project Description: Construct the new system of summer hiking trails between the gondola mid station and top station as proposed in 2002. The trails will provide access to national forest lands in a manner which minimizes impacts to resources and provides a high-quality recreation opportunity. They will replace hiking which currently takes place on the summer maintenance roads, and is not a high-quality outdoor recreation experience.

The trails will be three feet wide and offer multiple loops based on length and skill. All trails will include permanent water quality BMPs. They will be constructed consistent with Forest Service trail design standards, including width, surface and gradient. The trail to East Peak will avoid existing Tahoe draba plant populations that have been field surveyed and are located near the top of the peak.

A total of 3.1 miles of summer hiking trails are planned. A 1,200-foot segment of the summer trail will use the existing J Lift access road and connect to the landing platform of the Zipline Adventure Ride (described below).

The estimated total land coverage for the additional hiking trails (not including the existing J Lift access road segment) will be:

• West Side Trail (2' x 4,694')	9,388 sf
• Middle Trail (3' x 3,663')	10,989 sf
• East Side Connector Trail (2' x 2,285')	4,571 sf
• East Peak Summit Trail (2' x 5,693')	11,386 sf
Total	36,334 sf

In winter, 2.7 miles will be available for cross-country skiing and snowshoeing. The winter trails would be groomed with a snow cat for use as cross-country ski and snowshoe trails. The winter trail alignment will not go to East Peak.

Interpretive signage will be installed at key locations along the trails explaining the area's natural features, watershed issues and wildlife resources.

6. Project Name: Skyline Trail/Summer Road Relocation & Regrading

Project Description: Regrade Skyline Trail/Summer Road from a point approximately 1,200 linear feet past the top of Sky Express lift toward Nevada to the intersection with Milky Way Bowl and then along the entire length of Dipper Knob Trail to the intersection with Big Dipper Trail. Relocate a section of the existing trail near Picture Rock to the intersection with Milky Way Bowl. The entire trail will be regraded to achieve a relatively consistent downhill grade of between 8-10% for ease of use by snowboarders and lower-level skiers who now struggle with numerous sections of it. This project is located both inside and outside the Lake Tahoe Region. Skyline Trail and Dipper Knob Trail form an important connection between the California and Nevada sides of the resort in both winter and summer. In winter, it is the primary link for skiers traveling from California via the Sky Express lift to Nevada via the Dipper Knob Trail and Big Dipper Trail. In summer, the same route serves as the primary maintenance access road on the upper mountain.

In-Basin Portion

Beginning at a point approximately 1,200 feet below the top of the Sky Express lift, regrade the trail in its existing alignment for a distance of 1,100 feet. The point of beginning is past where Tahoe Draba has been found. The regraded trail will transition to a realignment near the Picture Rock landmark where photographs are often taken. From that point, relocate the trail to the north approximately 50 feet for a distance of approximately 700 feet to a point near the intersection with Milky Way Bowl where it crosses the basin boundary. The width of the relocated trail will be the same as the existing trail. The section of existing trail to be relocated will be decommissioned, restored and no longer used as a trail in winter or as a summer maintenance road. Land coverage associated with the in-basin portion of the project will remain the same as existing.

Out-of-Basin

At the basin boundary, the trail intersects the entrance to Milky Way Bowl. From that point, the trail becomes Dipper Knob Trail and traverses the Dipper Knob Area, ending at Big Dipper Trail. The trail will be regraded in its existing alignment for a distance of approximately 2,200 linear feet in order to achieve a consistent 8% grade.

Snowmaking

The entire portion of the regraded and relocated trail will include air, water and electrical power lines buried underground within the roadway for snowmaking. The point of connection to the existing systems is a point near the top of Dipper Express lift which is outside the Basin. From there, the pipelines will be extended down the existing maintenance road to the intersection with Milky Way Bowl. From there, they will extend up the realigned road, and cross back into the existing road up to the point of beginning below the Sky Express lift. Hydrants will be spaced approximately 150 feet on center beginning at the intersection of Milky Way Bowl and proceeding up the run toward Sky Express lift. Portable fan guns will be attached to the hydrants, and moved as needed. No snowmaking will be added to the Dipper Knob Trail portion of the project. No other roads improvements will be done to the Dipper Express road segment, except for the snowmaking water, air and electrical extensions.

Tahoe Draba

Tahoe Draba populations were field-surveyed along the entire project length in 2003 and 2004. Based on the surveys, the in-basin portion of the project will begin at a point past where existing plants have been identified. Outside of the Tahoe Basin, between 45-50 individual Draba plants have been identified along the lower section of the Dipper Knob Trail which may be affected by the regrading. These will be avoided to the greatest extent feasible. Cut and fill for the construction of the project will be balanced in order to minimize the need for soil import or export. Temporary and permanent water quality BMPs will be incorporated into the project.

7. Project Name: Zipline Adventure Ride

Project Description: Install a two-line Zipline from near the top of Tamarack Express lift to near the base of the gondola. Zipline is a gravity-based cable sliding system where individual riders slide down a tensioned wire cable in a seated position using a carriage or trolley and harness that incorporates braking capabilities. It will include two parallel routes (lines) that are approximately 3,100 feet with an elevation drop of approximately 525 feet (17% average slope).

The Zipline will operate in summer and in winter. Heavenly staff will assist riders into and out of the harnesses at each station. From the gondola, all riders will access the starting point (takeoff platform) by riding the Tamarack Express lift. The landing platform will be a short distance from the gondola near the top of the existing tubing lift and J Lift access road. All platforms will be constructed from wood. The ride will be ADA compliant.

Minimal tree clearing is needed for the takeoff and landing platforms. Approximately ten White bark pines will be cleared from the top station. Below the top station, approximately 20 White bark trees that are directly in the alignment will be pruned by 5-10 feet in height to provide safe vertical clearance. The trees will not be removed. The pruning will not be necessary once the riders cross over the existing California Trail road. From that point on, riders will be over the existing forest canopy for the remainder of the ride. Near the landing platform, one pine tree will be removed for the alignment.

Prior to use each summer, a 6-foot wide barrier free walkway will connect the top of the Tamarack Express lift to the takeoff platform. It will be sited in order to avoid existing known Tahoe Draba populations. Interpretive signage along the walkway explaining the Tahoe Draba will be provided in summer. At the landing platform, riders will use the existing J-lift access road to return to the gondola. Permanent water quality BMPs will be incorporated into the platforms and trails.

The estimated total land coverage for the project will be:

• Top Station Takeoff Platform (11' x 30')	330 sf
• Top Station ADA Boardwalk (6' x 175')	1,050 sf
• Top Station Cable Mount/Overturning Mass	31 sf
• Base Station Landing Platform (35' x 60')	2,100 sf
• Base Station Return Trail to J Lift Road (6'x 90')	540 sf
• Base Station Cable Mount/Overturning Mass	31 sf
Total	4,082 sf

8. Emergency and Limited Use of Gondola Mid-Station Maintenance Road

Project Description: Utilize the previously decommissioned mid-station construction road as a maintenance and emergency access trail for specific and limited use by lift maintenance and

emergency personnel. As proposed, the roadway will be twelve feet wide. Because of the limited use by light-duty vehicles, Heavenly will reduce the width to 10 or eleven feet in width if consistent with the Forest Service roadway design standards and guidelines. Permanent water quality BMPs including a defined parking and turnaround area at the mid-station will be included. Road use will be monitored and reported annually by Heavenly. The situations for which it will be used are only:

- Daily start-up and shutdown of the gondola as required by the lift manufacturer, the State of California and the ANSI Code. A maximum of one trip in and one trip out each day of summer operations using one quad runner or light-duty pick-up truck;
- Emergency summer repairs to the lift and the mid-station facilities such as the restrooms or Cafe Blue that cannot be completed by using the gondola lift;
- Emergency evacuation of gondola passengers between the mid-station and top station; and
- Safe evacuation of guests on the mid-station deck or hiking trails due to the threat of lightning or similar weather-related conditions.

Land coverage for the road will be as follows:

- Gondola mid-station road (12' x 3,276') 39,312 sf

9. Top of Gondola Special Events Area

Project Description: Utilize an existed cleared area adjacent to the Gondola Top Station for summer group events. The area is approximately 100' x 200' in area. It has previously been cleared of vegetation for the gondola construction and is used in winter as a walking route between the gondola and the Tamarack Express lift and the tubing lift. The area is and will continue to be covered early each summer with a 4" layer of wood chips to reduce dust and minimize erosion. Heavenly proposes to erect an open-sided tent on the area to serve lunch and dinner to groups between 50 –250 people. Existing restrooms and kitchen facilities are adequate to serve the groups. No other services are needed for the site. The groups will typically arrive at the base of the gondola by tour bus, thus minimizing vehicle trips.

6 Stream Environment Zone Restoration Project Descriptions

6 Stream Environment Zone Restoration Project Descriptions

Mitigation Measure 7.4-3 of the adopted 1996 Ski Area Master Plan required Heavenly to restore 29.1 acres of disturbed Stream Environment Zone (SEZ), within the resort and an additional 5.2 acres of developed SEZ within the Lake Tahoe Basin. Restoration of the additional 5.2 acres may also be completed within the resort. The restoration was planned to occur based on a ten-year schedule that is included in the 1996 Master Plan.

The following information describes the SEZ restoration projects that have been completed since 1996. All work was planned and implemented under the direct supervision of the Forest Service watershed staff. Following completion, Forest Service staff field-verified the projects.

Restoration of developed SEZ sites is shown first, followed by the disturbed site restoration projects.

DEVELOPED SEZ RESTORATION PROJECTS

1. **Project Name: Sky Meadows**
   Area of Developed SEZ Restored: 1.9 acres
   Date of Completion: 1997

   Description: The project included the removal and subsoiling of an existing summer maintenance road from the California Dam to the base of Canyon lift. Existing channels that drained the surrounding slopes and connected the adjacent meadows to Heavenly Valley Creek were stabilized. The stream was rerouted to its historical channel and the stream banks were seeded and stabilized with erosion control blankets. The meadow area was seeded with wet meadow plant species.

2. **Project Name: Base of North Bowl Lift**
   Area of Developed SEZ Restored: 0.5 acres
   Date of Completion: 1998

   Description: Revegetation with wet meadow species, and stream bank stabilization using willow wattles of the Edgewood Creek riparian corridor.

3. **Project Name: Lower California Trail/Ellie's Run**
   Area of Developed SEZ Restored: 1.2 acres
   Date of Completion: 1998

   Description: The existing summer maintenance road was removed and the roadbed was subsoiled, seeded and mulched. The road prism side slopes were hydroseeded and mulched. Drainage control structures were added along the creek. See below for disturbed SEZ restoration component.

4. **Project Name: Maggie's Run**
   Area of Developed SEZ Restored: 1.1 acres

Date of Completion: 1998

Description: Regrade the existing summer maintenance road to outslope at a uniform slope. Install drainage structures, culverts, low water flow road crossings and develop a new roadside drainage channel using Pyramat erosion control material. Hydroseed and mulch road prism side slopes. See below for disturbed SEZ restoration component.

5. **Project Name: Heavenly Valley Creek Water Quality Monitoring Site Road**
   Area of Developed SEZ Restored: 0.25 acres
   Date of Completion: 1999

   Description: Rip and obliterate the existing summer maintenance road to the water quality monitoring site HV-C2 below the Creek Station. The roadbed was seeded, mulched and fertilized.

6. **Project Name: Blackwood Creek**
   Area of Developed SEZ Restored: 1.0 acres
   Date of Completion: 1996

   Description: The project involved removing an existing house, driveway and compacted fire wood lot storage and cutting area. The site was seeded and planted with wet meadow species. Seasonal overflow channel segments were constructed in order to spread out high flows into the meadow. The project was completed in conjunction with the California Main Lodge storm water BMP system.

7. **Project Name: Boulder Lodger Base Area**
   Area of Developed SEZ Restored: 0.2 acres
   Date of Completion: 2004

   Description: The project involved removing an existing surface lift from the SEZ and regrading and revegetating the previously disturbed area. In addition, the Boulder parking lot BMP retrofit project removed land coverage from a portion of the exiting parking area and reseeded and mulched the area.

DISTURBED SEZ RESTORATION PROJECTS

8. **Project Name: Patsy's Run**
   Area of Disturbed SEZ Restored: 2.1 acres
   Date of Completion: 1997 & 1998

   Description: Install rock lined channels and revegetate area with wet meadow species.

9. **Project Name: Maggie's Run**
   Area of Disturbed SEZ Restored: 1.1 acres

Date of Completion: 1998

Description: Regrade and revegetate ski run adjacent to stream channel in conjunction with developed SEZ restoration project described above.

10. **Project Name: Woods Trail**
Area of Disturbed SEZ Restored: 0.3 acres
Date of Completion: 1998

Description: Regrade and revegetate existing ski run segment.

11. **Project Name: Ridge Bowl Return Trail**
Area of Disturbed SEZ Restored: 0.3 acres
Date of Completion: 1999

Description: Regrade and revegetate existing ski run segment.

12. **Project Name: Lower Betty's Trail**
Area of Disturbed SEZ Restored: 0.1 acres
Date of Completion: 1997

Description: Repair exiting area of gullying and revegetate existing ski run segment.

13. **Project Name: Canyon Trail**
Area of Disturbed SEZ Restored: 0.3 acres
Date of Completion: 1997

Description: Regrade and revegetate existing ski run segment.

14. **Project Name: Rusutsu Trail**
Area of Disturbed SEZ Restored: 0.6 acres
Date of Completion: 1997

Description: Regrade and revegetate existing ski run segment.

15. **Project Name: Liz's Run**
Area of Disturbed SEZ Restored: 1.7 acres
Date of Completion: 1997

Description: Regrade and revegetate existing ski run segment.

16. **Project Name: Ellie's Run**
Area of Disturbed SEZ Restored: 0.4 acres
Date of Completion: 1997

Description: Regrade and revegetate existing ski run segment.

17. **Project Name: Lower California Trail/Ellie's Run**
Area of Disturbed SEZ Restored: 1.3 acres
Date of Completion: 1998

Description: Regrade and revegetate existing ski run segment in conjunction with the developed SEZ restoration project described above.

18. **Project Name: Creek Station**
Area of Disturbed SEZ Restored: 2.3 acres
Date of Completion: 1998

Description: Add rock-lined channel and other drainage improvements, and revegetate existing ski run segment.

19. **Project Name: Crossover Run**
Area of Disturbed SEZ Restored: 0.3 acres
Date of Completion: 1997

Description: Regrade and revegetate existing ski run segment below the existing summer maintenance road.