ALYESKA RESORT
ALASKA

Ski Area Master Plan

Girdwood, Alaska
December 2008

Submitted by:
Alyeska Resort Management Company

Prepared by:

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SIGNATURE PAGE

State of Alaska – Department of Natural Resources

By: _____ Date: 4/1/09
Natural Resources Manager

By: _____ Date: 4/1/09
Regional Manager,
Division of Land – South Central Region

Alyeska Resort, (Leaseholder)

By: _____ Date: 3/23/09
President,
Alyeska Resort Management Company

By: _____ Date: 3/23/09
General Manager,
Alyeska Ski Area

2008 Ski Area Master Plan

ALYESKA RESORT

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CHAPTER 1: INTRODUCTION

1. INTRODUCTION

Alyeska Resort Management Company ("ARMCO") has assembled this *2008 Alyeska Resort Ski Area Master Plan* (hereafter referred to as the "2008 Master Plan" or "Master Plan") in accordance with terms of its 55-year lease agreement with the State of Alaska, Department of Natural Resources ("DNR"). This 2008 Master Plan updates the *2000 Alyeska Resort Ski Area Master Plan* that is presently on file with DNR. The 2008 Master Plan presents resort management's current strategy for: 1) the upgrading and expansion of ski[1] and year-round facilities at Alyeska, and 2) the integration of skiing and mountain facilities with the future base lands development recently approved by the Planning and Zoning Commission of the Municipality of Anchorage in the *Alyeska Area Master Plan.*

A. LOCATION

Alyeska Resort is located in Glacier Valley at Girdwood, 40 miles south of Anchorage on the Seward Highway (see Figure 1.0). Alyeska's location on one of the state's major highway systems and near Anchorage International Airport makes it very accessible. Alyeska presently serves as a local destination resort to skiers from Anchorage, as well as serving regional skiers from Fairbanks (400 miles north) and the Kenai Peninsula (100 miles south).

B. RESORT SUMMARY

Alyeska Resort ("Alyeska" or "Resort") is owned by Hotel Alyeska L.L.C., Alyeska Ski Resort L.L.C., Alyeska Holdings I, L.L.C., Alyeska Holdings II, L.L.C., and Alyeska Holdings AI, L.L.C. (jointly and severally "Owner"). Cirque Property L.C. is the managing member of these ownership entities. Resort operations are managed by ARMCO. The primary facilities of Alyeska Resort include the 304-room Hotel Alyeska and associated amenities and the Alyeska Ski Area.

Alyeska currently operates an aerial tram, six chairlifts, and three beginners' surface lifts. Skiable terrain includes 67 developed and maintained alpine trails totaling 256 acres, and an additional 530 acres of tree and open-skiing opportunities, which include open terrain located between the formalized trail network in the Alyeska bowl, ski terrain on the south side of the bowl accessed by a high gliding traverse, and terrain on the North Face that is served by the aerial tram (the "Tram"). Skier support facilities include a primary day lodge and associated buildings in the main Alyeska base area, skier services housed in Hotel Alyeska, and two restaurants and other services at the upper Glacier Terminal of the Alyeska Tram. Primary day-skier parking is provided in the Alyeska base area, with overflow parking available near Hotel Alyeska. Night skiing is offered at Alyeska on trails served by all lifts except Chair 6, and snowmaking coverage ensures optimal snow conditions from the top of the Tram and on most of the lower mountain terrain. Additional amenities at Alyeska

[1] In this document, the term "ski" or "skier" denotes all snowsport participants, including, but not limited to, traditional skiers, snowboarders, disabled skiers, and telemark skiers.

include a terrain park, the Challenge Alaska (disabled) Skiing Program, and a network of Nordic ski and snowshoe trails accessible from Hotel Alyeska. Summer activities include scenic rides on the Alyeska Tram, dining at the Glacier Terminal, hiking from the Hotel and on the ski area, and limited mountain biking.

Three ski areas of varying size exist in the Anchorage area. Alyeska is the largest by a considerable margin and is the largest ski area in Alaska. The majority of Alyeska's current skier visitation is generated by residents of the Anchorage Bowl. Since Alyeska is the only regional destination resort in Alaska, the area also attracts skiers from more distant Alaskan cities and towns. In addition, the resort caters to a small percentage of out-of-state and international guests. Alyeska registered 168,839 skier visits in 2007-08, which represents a 15 percent increase over the prior five-year average of 146,715.

C. BACKGROUND

Alyeska/Girdwood is designated as a distinct management and planning area within the Municipality of Anchorage. In 1994, the Turnagain Arm Management Plan was adopted for state lands in the Turnagain Arm area, including uplands near Girdwood and Crow Creek Road. The Girdwood Area Plan, a revision of the 1987 Turnagain Arm Comprehensive Plan, was put into effect in 1995 by the Municipality of Anchorage.

Glacier Valley is bordered on the east and north by lands managed by the Alaska Department of Natural Resources, to the east by limited National Forest System lands, and on the west by Chugach State Park. These public lands provide opportunities for hiking, mountain climbing, fishing, camping and cross-country skiing, back country skiing, helicopter skiing, snowcat skiing and dog sledding. In addition to visitors using these recreation resources, many summer tour groups and cruise line operators use Alyeska as a stopover to enjoy scenic rides on the Tram and spend the night at the Hotel Alyeska. These factors have resulted in summer visitation to the area which is reflected by an average of 74,521 foot passengers on the Alyeska Tram during the past four summer seasons.

Alyeska Peak and Max's Mountain, which provide the majority of the ski terrain for the resort, are located in the center of the eastern edge of Glacier Valley. The Chugach Mountain Range is extensive, rising to a maximum height of 13,717 feet (Mt. Marcus Baker) about 25 miles from tidewater. Approximately 200 miles long by 50 miles wide, the range contains an abundance of high, heavily glaciated mountains with deep valley floors, generally near sea level. The watershed divide, about 10 miles east of Alyeska Resort, separates Prince William Sound to the east and Cook Inlet to the west.

Alyeska Resort was conceived by a group of local residents during the mid-1950s. The first chairlift (Chair 1) opened in 1960. A day lodge was added in 1962, with the Nugget Inn Hotel opening in 1969. Chair 2 was installed in 1972 and rebuilt in 1973 after an avalanche destroyed the bottom terminal. Chair 3 was added in 1974 in connection with a major expansion of the Skyride Restaurant at the top of Chair 1. Construction of Chair 4 in 1976 expanded the skiing terrain and mountain access. In 1979, major construction included replacement of Chair 1, the erection of the Tanaka Lift (Chair 5) and the addition of lighting to the upper mountain. Since that time, Alyeska has further enhanced the area by installing a snowmaking system, replacing Chair 2 with a detachable quad (Chair 6), adding Chair 7, replacing/shortening/realigning Chair 4, adding beginner surface lifts, upgrading and expanding ski trails, constructing a new day lodge in 1989, enhancing skier support services, providing new parking lots and other facilities. The most recent and significant improvements occurred in 1993, when the 60-passenger Tram and Hotel Alyeska were built. The installation of the Tram also provided for the utilization of terrain referred to as the North Face.

The Resort is currently operated under a 55-year lease agreement with the State of Alaska, Department of Natural Resources, signed December 8, 1993. This lease agreement authorizes the use of 1,431 acres of DNR land for ski terrain and associated facilities. The lease agreement includes 306 acres located on the North Face of Mt. Alyeska. After completing a feasibility study in February of 2000, the Anchorage assembly approved 150 acres of land located between the North Face boundary and Winner Creek to remain classified as "commercial recreation" for future lift-served terrain development.

Initially, the development of Alyeska was financed by the sale of land. The Alyeska Ski Corporation ("ASC") began the Alyeska Subdivision after acquiring 233 acres at the base of the mountain in 1962. Francoise de Gunzberg operated the resort until 1967 when ASC and Alaska Airlines entered into a three year management contract which gave Alaska Airlines an option to buy the Resort. Alaska Airlines purchased the Resort in 1967. After the Nugget Inn Hotel was built in 1969, Alaska Airlines actively marketed the Resort, but a lack of capital limited its financial contribution. Gradually, with the help of national and world competition ski races, Alyeska became better known. The Resort was put up for sale by the airline in the late 70's and was sold to Seibu Alaska, Inc., a subsidiary of Seibu of Japan, in 1980.

Seibu Alaska prepared a detailed master plan for Alyeska Resort and built the Tram and Hotel Alyeska (formerly known as Alyeska Prince Hotel), as well as other mountain improvements. In 2006, as part of an overall consolidation strategy by Seibu of Japan, the Resort was once again for sale. In December 2006, Alyeska was purchased by the Owner as defined above. The Resort operations are managed by ARMCO, and planning and development activities at the Resort are, and/or will be, managed by the Alyeska Resort Development Company.

D. Development Philosophy (Goals and Objectives)

The principal operational goal for Alyeska is set forth below. It forms the basis for the master plan program.

> *To provide for continued upgrading and expansion of the Alyeska Resort facility in order to increase winter and summer utilization while enhancing the quality of the ski and resort customer experience on a year-round basis.*

A number of objectives have been drafted to guide the future direction of Alyeska in attaining the presented goal. They are:

- Develop Alyeska's status as a regional and international destination resort offering a variety of year-round activities unique to the setting.
- Provide upgraded facilities in order to improve the quality of the alpine experience.
- Enhance skiing opportunities for entry-level and low ability level skiers, including low intermediate and intermediate skiers and an upgraded rental program.
- Through quantitative and qualitative analyses, obtain a better understanding of user perceptions, desires and expectations.
- Increase both the quality and quantity of the bed base to accommodate more overnight visitors on a year-round basis and concurrently enhance the ability of Alyeska to host a greater number of convention and group tourist activities.
- Develop a greater variety of ski terrain tailored to the market in the best way possible.
- Better utilize alpine terrain through increased patrol and avalanche mitigation.
- Develop adjacent backcountry opportunities in Virgin Creek.
- Design a lift and trail network to maximize skiing opportunities.
- Minimize lift lines while maintaining trail densities to industry standards.
- Continue to provide a high quality skiing experience within the natural constraints and hazards present at this area.
- Reduce skier congestion through the improvement of catwalks and other convergence zones on the mountain.

- Preserve and enhance the environment which comprises the ski area, including private land, the DNR lease agreement area, and land leased from the Municipality of Anchorage by implementation of the principles as set forth in the NSAA environmental charter.

- Trail Based Recreation (TBR) programs and products will enhance the spectrum of four season recreation experiences available to site users, summer hiking & MTB trails w/ interpretive facilities and winter Nordic Skiing & Snowshoe trails are a key provision of the development plan.

- Provide support facilities and services for the ever increasing numbers of winter and summer visitors.

E. PURPOSE

The purpose of the 2008 Master Plan is to establish the direction and priorities for the physical improvement of mountain facilities at Alyeska. It is intended that the Master Plan will identify the type, size, capacity, and location of improvements that are appropriate to achieve the stated goals of the Resort. The 2008 Master Plan will serve as a "road map" for future improvements at Alyeska, and additional site-specific design will be completed at the time of project implementation.

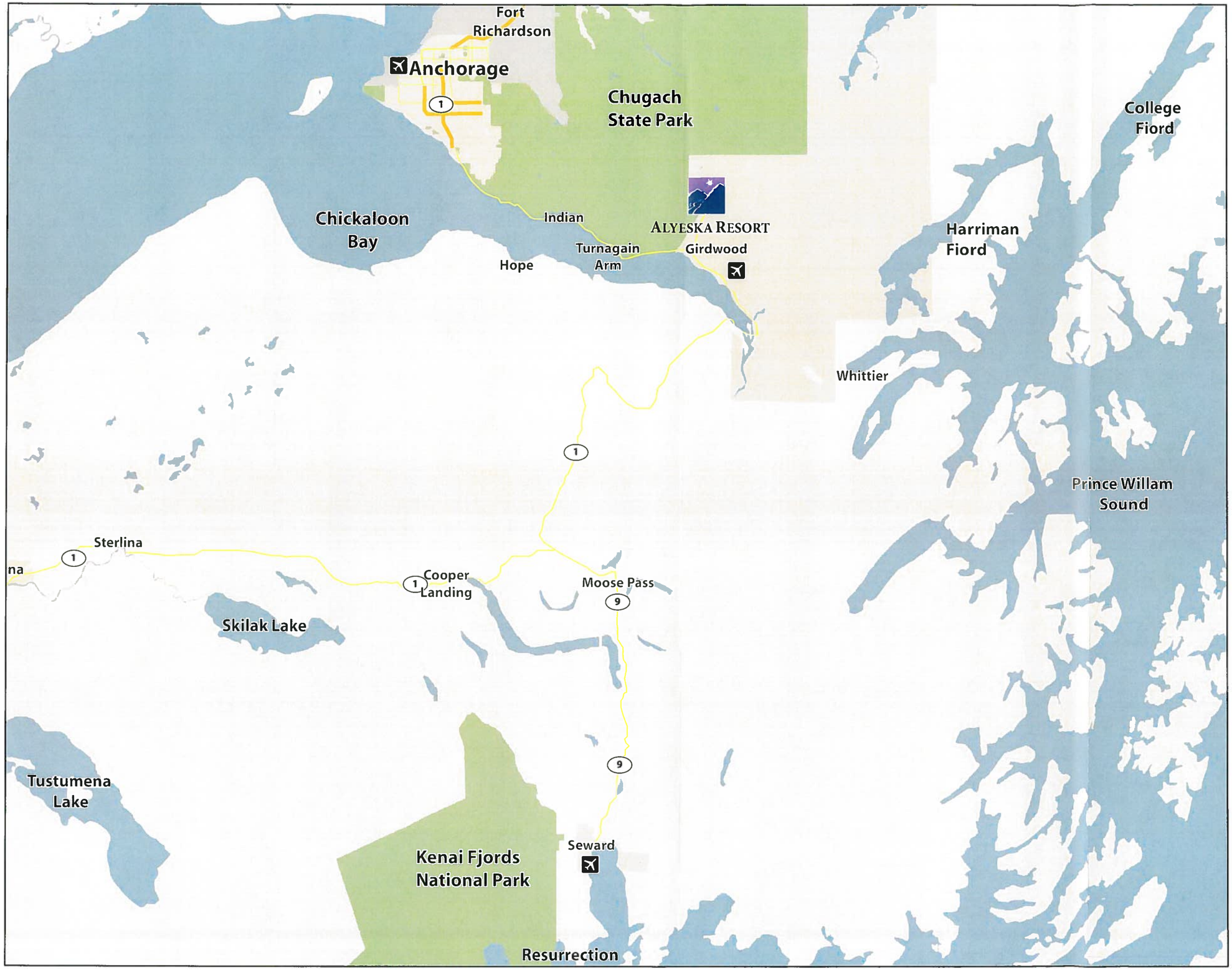
F. ABSTRACT OF PROPOSED SKI AREA MASTER PLAN

This Master Plan is divided into four sections. The first section (Chapter 2) describes the site inventory of the Resort, including physical resources, opportunities and limitations, and environmental determinants. The second section (Chapter 3) describes the design criteria used for mountain planning purposes specific to Alyeska. The third component (Chapter 4) addresses existing conditions at Alyeska and evaluates the balance of resort operations, facilities, and infrastructure including components such as lifts, guest services, snowmaking, and parking capacities. This section provides the baseline conditions from which the planning strategies for future upgrades are based. The fourth section (Chapter 5) details proposed upgrades/improvements to the Resort. The focus of the improvements is to provide a more diverse resort experience which will create a more varied and interesting atmosphere and will encourage longer periods of visitation and more frequent guest visits. In summary, potential projects include:

- The addition of day-skier parking lots on DNR and private lands adjacent and to the northeast of Hotel Alyeska and the lower Tram terminal;

- Grading projects throughout the ski area to improve skier circulation, mitigate bottleneck areas, eliminate terrain undulations that are difficult to groom, and create terrain features for a skier/snowboard terrain park;

- Installation of the "Glacier Tram" to provide lift service to the Headwall area, as well as terrain in the Virgin Creek drainage and hiking access to Max's Mountain and Tea Cup Bowl;
- Creation of a skier return route from the Virgin Creek terrain to the base area;
- Modification and diversification of the network of avalanche control devices and facilities, both passive and active, to allow more effective avalanche control within the permitted area;
- Upgrading to chairs 1, 3, 4 and 6 in order to improve the operating capacity and rider comfort of those lifts;
- Development of a snowmaking reservoir at the base of the North Face;
- The addition of snowmaking coverage on low-elevation terrain of the North Face (e.g., Jim's Branch and Far Side (the Autobahn);
- Expansion of night skiing terrain to Corkscrew/Waterfall/Klondike;
- Reconfiguration and development of additional skier services facilities/space in the Alyeska base area and at Hotel Alyeska;
- Relocation of the ski area maintenance building to a location, likely on DNR land, within the Resort boundary;
- Development of a comprehensive network of mountain bike and hiking trails throughout the ski area, providing a program for continual enhancements of trail based recreation;
- Construction of a mountain coaster and zip line; and
- Development of multiple use trails throughout Glacier Valley.



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SKI AREA MASTER PLAN

FIG. 1.0
AREA LOCATION MAP

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North

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CHAPTER 2: SITE INVENTORY

2. SITE INVENTORY

A. PHYSICAL RESOURCES

1. Topography

The topography of the Alyeska Resort site is typical of the Chugach Range where glacial action has been the predominant force in shaping the landscape. This is largely evidenced by the steep mountain peaks interspersed with glacial bowls and valleys. Topographic features throughout the site consist of open meadows, cliff bands, prominent knolls, gullies, ridges, and glacial bowls.

The Alyeska base area sits at the toe of Max's Mountain, at an elevation of 250 feet above sea level. From this point the terrain rises, most abruptly to the southeast, terminating at the top of Max's Mountain after a vertical rise of over 3,000 feet. The average slope gradient from the base area to the summit of Max's Mountain is about 55 percent (30 degrees).

The ski lifts and trails are situated to the east of the Alyeska base area where the topography is more undulating and gentle. However, steeper head-walls are interspersed throughout the area which often interrupt otherwise moderate terrain and which pose certain limits on intermediate skiing potential. The ski trails at Alyeska are located along a broad ridge extending from the base area to the Glacier Terminal, within the glacial bowl and along the lower flanks of Max's Mountain. Total vertical rise from the base facilities to the top of Lift 6 is approximately 2,500 feet. Slope gradients range from 10 percent (6 degrees) to over 100 percent (45 degrees), with typical slopes in the 25 to 50 percent range (14 to 27 degrees).

The Hotel Alyeska is situated in Glacier Valley at the base of the North Face of Mt. Alyeska, about 5,000 feet to the northwest of the present Alyeska base area, at an elevation of approximately 250 feet above sea level. The topography in this area rises sharply from the hotel site to the ridge leading from the Glacier Terminal to the top of Chair 6, a vertical rise of 2,500 feet. The North Face typifies steep terrain found in the Chugach Range, with an average slope gradient of 52 percent (28 degrees).

2. Slope Gradients

The Slope Gradients Analysis for Alyeska is shown in Figure 2.1. The full range of slope gradients has been color-coded in order to depict the primary skill classifications for skiers. The color designations are described below.

- **White** - Slope gradients between 0 and 8 percent (0 to 5 degrees) are too flat for skiing, but ideal for base area accommodations, and other support facility development.
- **Green** - Slope gradients between 8 and 25 percent (5 to 15 degrees) are ideal for beginner to novice skiers, and typically can support some types of development.

- **Blue** - Slope gradients between 25 and 45 percent (15 to 25 degrees) are ideal for intermediate skiers, and typically are too steep for development.

- **Black** - Slope gradients between 45 and 70 percent (25 to 35 degrees) are ideal for expert skiers, and pose intermittent avalanche hazards.

- **Red** - Slope gradients greater than 70 percent (35 degrees and over) are gradients too steep for all but the highest level of skiing. Areas of this high slope are typically allocated as expert only and are closely managed by the ski area operator for avalanche control.

3. Aspect

Alyeska is located on two distinct peaks, Alyeska Peak and Max's Mountain, with exposures in many different directions. Individual portions of the skiable terrain have exposures to every aspect, but the majority of ski runs face north or northwest. Slope aspect plays an important role in snow quality and retention. The variety of exposures present opportunities to provide a range of slope aspects that can respond to the changes in sun angle, temperature, wind direction, and shadows. Typical constraints in relation to the various angles of exposure are discussed below.

- **North-facing** - ideal for snow retention, minimal wind scour, minimal sun exposure

- **Northeast-facing** - ideal for snow retention, minimal wind scour, minimal sun exposure

- **East-facing** - good for snow retention, some wind scour, morning sun exposure

- **Southeast-facing** - fair for snow retention, moderate wind scour, morning and early afternoon sun exposure

- **South-facing** - at lower elevations, poor for snow retention, moderate wind scour, full sun exposure

- **Southwest-facing** - poor for snow retention, high wind scour, full sun exposure

- **West-facing** - fair for snow retention, high wind scour, late morning and afternoon sun exposure

- **Northwest-facing** - good for snow retention, some wind scour, afternoon sun exposure

B. Permit Boundary and Land Ownership

Alyeska operates on about 1,431 acres of DNR land under a 55-year term authorization from the DNR (see Figure 2.3). As illustrated on Figure 2.3, chairs 3, 7 and Tanaka and the ski terrain

associated with those lifts, as well as the lower half of the terrain served by chairs 1 and 4 are on private lands held by Alyeska Resort, or in the case of Chair 7, on lands leased from the Municipality of Anchorage. The resort presently owns and operates on approximately 389 acres of private land at the base area. All base area skier services, including the lower tram terminal and services in Hotel Alyeska are on private lands, while the Glacier Terminal skier service facilities sit on DNR land. The Resort has a lease agreement with the Municipality of Anchorage for a 31.5-acre tract of land adjacent to the DNR permit. This land (Tract E) includes portions of Chair 7 as well as the Blueberry Hill and Blueberry Hill Bypass trails.

C. ENVIRONMENTAL DETERMINANTS

1. Climate

Winter weather at Alyeska is typified by periods of cold, stable weather followed by long periods of warm, inclement weather. These patterns are produced by the interaction of the extremely cold, dense, high pressure systems that develop over the interior of Alaska in the winter and the relatively warm, moisture-laden, low pressure systems produced in the Gulf of Alaska. One of these systems typically dominates the weather pattern at Alyeska, although there are periods when the Resort lies in a transitional zone of cool, cloudy weather with very little precipitation. Storms generally create airflow from the southeast quadrant (Prince William Sound). With the topographic divide of the mountain range to the east, this airflow pattern produces heavy precipitation on the east side of the mountain range and lighter precipitation on the west.

Average annual precipitation ranges from 171 inches at Whittier to 27 inches at Anchorage, with Girdwood averaging approximately 67 inches. Stormy periods produce either rain or snow at sea level, but consistently generate snow above the 1,000 foot level in the winter. This high freezing level occasionally results in a shortage of snow at lower elevations. Average November to April snowfall on the mountain reflects this difference: 197 inches at the base area with an elevation of 250 feet, 507 inches at the midway elevation of 1,700 feet, and 635 inches at the top of the lift-serviced area at 2,750 feet. By comparison, the average November to April snowfall for Anchorage is 52 inches. Elevation and temperature, more so then aspect, play a dominant role at the resort for both snowfall and snow retention.

Clear weather periods can endure for as long as a month. Low sunlight angles in the winter cause a daily net radiation loss resulting in gradually colder temperatures during any extended clear weather period. Under these circumstances, temperatures in the valley can reach -20°F and occasionally go lower. Generally, a very large low pressure system moves these dense, cold air masses from the region.

The highest wind velocities experienced at Alyeska typically occur from the northeast and sweep across the upper mountain chairlifts. Wind-related closures on the two chairs serving the upper mountain and the Tram occur about seven days per year. Lift 1 is affected between Picnic Rock and the Glacier Terminal, while Lift 6 receives the greatest wind in the vicinity of the "tower 5 area" and near the upper terminals. The Tram is affected the most at mid-span above the Kettle Pond Cliffs. During periods of high winds, chairs 3, 4, 7 and Tanaka are not normally shut down. As noted in the Alyeska Operations Plan, extreme weather conditions, including high winds, lightning, very low temperatures, poor visibility, icing, or other conditions considered dangerous to the public or adverse to lift operations, will require cessation of lift operations until conditions moderate.

The radically variable weather patterns which effect Alyeska during the winter are replaced by a more stable climate regime during the spring and summer months. The strong high pressure systems that dominate the interior of the state in the winter are replaced by "thermal" low pressure, created by long daylight hours and warm temperatures. Stagnate low pressure dominates in the Bering Sea, inhibiting the movement of storm systems that typify the winter pattern. General airflow is from the southwest, which brings cool moist maritime air to the Girdwood valley. This pattern, characterized by clouds and light precipitation, is occasionally broken by weak high pressure systems, normally lasting little more than a few days. Beginning in mid-August, the airflow pattern begins to shift more northwesterly, bringing stronger storms with lower temperatures and greater amounts of precipitation.

Historically, precipitation at Alyeska has occurred on average 15 days each month, for May, June and July. However, total accumulations per month through this period are relatively modest, averaging 2 to 4 inches. The average number of precipitation days and total monthly accumulations gradually increase beginning in August, reaching an average of 21 precipitation days and total water accumulation of 8 inches for the month of October.

Average monthly temperatures rise significantly from late winter, in part due to rapidly increasing daylight hours. (Daylight hours increase at a rate of 6 minutes per day from late March through early May.) The rate of daylight gain slackens as summer solstice is approached and when daylight exceeds 20 hours. This extensive daylight inhibits diurnal temperature fluctuations and leads to relatively constant temperature patterns. Late May normally marks the end of below freezing temperatures at Alyeska's base area. The average base area temperature for the month of May is 44°F. Due to the elevation gain of 2,000 feet, temperatures at the Glacier Terminal average 8 to 10 degrees cooler than at the base area. Accordingly, the potential for snowfall endures on the upper mountain into early June, resulting in a much shorter summer at high elevations than is experienced on the valley floor. The mid-summer months of June, July and August have average temperatures in the low to mid-50's with average maximum's reaching the high 60's in late July and early August. Occasional

highs in the mid-70's are reached during this period, with the thermometer topping 80°F once or twice during the summer.

Shorter days in late August and shifting weather patterns usher in fall storms, which normally bring snowfall to the upper mountain around the first week of September. The average date for the first snowfall at the base area is October 12th. Leading to winter, the average temperature drops significantly through September and October, precipitation increases and cold, inclement weather becomes more prevalent.

2. Avalanche Conditions

Alyeska is classified as a "Class A" avalanche area, the most serious classification given. This classification is set by the US Forest Service on a rating system of A, B or C. Accordingly, an Avalanche Hazard Reduction Plan for Alyeska has been developed as a means to identify and mitigate hazards. As part of the Alyeska Operations Plan, the Avalanche Hazard Reduction Plan is revised annually to address new hazard reduction techniques. No deaths or serious injuries have occurred on the mountain as a result of avalanches.

Four artillery gun mounts are located on the mountain, as shown on the Existing Conditions Plan (Figure 4.0). Of these four mounts, currently only three have 105mm guns installed. These placements are located near the vehicle maintenance shop, below the Glacier Terminal, at the base of the North Face, and just above the top terminal of Chair 6 where presently only a mount exists. Due to the lack of availability of 105mm recoilless shells, Alyeska has added 105mm Howitzer guns to replace the recoilless. Alyeska also employs the use of two avalauncher guns which are located at the Tram tower and the patrol shack near the top of Lift 6. The avalaunchers use compressed nitrogen gas to propel the explosive. Note that avalaunchers are not an option to replace artillery.

As previously mentioned, Alyeska's ski area boundary has been expanded to include a portion of the North Face of Mt. Alyeska. The North Face is characterized as an extremely large and steep slope with a vertical drop of 2,000 feet (approximately 1 mile in length and width). While this area has been open to skiing in the past, the North Face had never been utilized as a formal ski slope until the 1995-1996 season. However, with the development of the Tram and the ability to use various methods for avalanche hazard reduction, Alyeska has formalized its plan to include the North Face as an outer area. Outer area is defined as terrain open for skiing but utilized on a less frequent basis due to weather, avalanche closures, general snow conditions, etc. Design-magnitude (100-year) avalanches on the North Face will likely consist of high-velocity, dry-snow avalanches with an associated powder blast. During design conditions, avalanches will stop approximately 500 feet above the lower tram terminal and the Hotel. By actively controlling the North Face, potential for design-magnitude avalanches is reduced.

Periodically, the upper tram tower (immediately below the ridge crest) experiences moderate pressures from snow creep and from impact with the initial stages of the design avalanche. The tower is protected by a concrete barrier above the tower to deflect these pressures to either side of the tower.

3. Geology and Soils

According to the U.S. Geological Survey, Alyeska sits mostly on a thick Mesozoic marine deposit that extends through the Chugach-Kenai Mountain System (Clark, 1972). This layer was heavily glaciated during the Pleistocene period, particularly along the weakness that eventually became the Glacier Valley. At one time, ice was nearly 3,500 feet thick in the valley (Capps, 1916). As the ice melted, it deposited unconsolidated materials on the valley floor. These materials are commonly called "till" or, more properly, diamicton (Flint 1971). After the glacier retreated, streams continued to bring alluvial deposits to the valley floor. The only high volume water bearing deposits are the alluvial ones at the mouths of major streams. Colluvium deposits occurred on hillsides, a result of the rock movement caused by gravity from steeper slopes above. Rarely, Turnagain Arm encroached on the Glacier Valley floor, leaving deposits of fine grained material. These deposits of unconsolidated material lie over bedrock composed of argillite, slate and grawwacke (Capps, 1916). Deposits range in thickness from 98 feet near Glacier Creek to 2 feet or less up the slope from the base area. Local deposits may be 160 feet deep or more.

A major geological fault lies along the Turnagain Arm, which is a portion of the Pacific Rim fault system. Earthquakes occur several times a year with the epicenter sometimes near Girdwood. The earthquake on March 27, 1964 produced several major snow avalanches from the face of Max's Mountain, damaging Lift 1 in several locations. In the future, strong earthquakes can be expected to damage numerous buildings in the valley, which rest on deep beds of unconsolidated alluvium and clay. Modest damage to the resort facilities during the 1964 earthquake indicates the Resort could withstand future earthquake activity. An earthquake that produces major avalanche activity during operating hours could impact skiers in the area. If seismic activity is large enough to trigger a slide off the face of Max's Mountain, several lifts, the Daylodge, the Aidroom, and proximate dwelling units could be damaged or destroyed. Disaster plans formulated for the area should take this into account.

Other than occasional, small rockfalls from steeper cliffs, no major subsidence of land has been noted in the area being reviewed by this plan. Major rock slides or slumps should not occur in the future if proper site drainage is provided as part of the trail improvement program. The terrain for ski development has been limited to those areas that would permit trail construction and improvements without geological disturbance. Soil development within the ski area environs varies greatly according to the differing influences of weather, geography, and vegetation.

4. Hydrology

Alyeska Resort lies in the Glacier Valley, which runs north-south from a rim of 6,000+ foot peaks to the north to Turnagain Arm at the south. Four major tributary streams feed Glacier Creek and divide the peaks of the region into groups. Alyeska Creek flows from the Glacier on Alyeska Peak directly through the resort area into Glacier Creek. Moose Meadow Creek, which converges with Alyeska Creek at an elevation of 1,075 feet, is sustained year-round by runoff from the north slope of Max's Mountain. Surface water in the region is generally of good quality with very little pollution.

Prior to the installation of the community sewer system in 1978, numerous holding and septic tanks were used. Overflows and leakage caused extensive contamination of surface water, but this problem has been largely corrected. Siltation occurs in surface waters during unusually heavy rainfalls or spring runoff. Efforts to revegetate key areas of the mountain will reduce the amount of siltation, but will not eliminate it. Alyeska is committed to ongoing control of erosion, as described in the Alyeska Revegetation and Erosion Control Plan.

5. Vegetation and Wildlife

Dominant vegetation types consist of hemlock and spruce forests intermingled with slide alder in open areas and avalanche paths. This thick cover gives way to meadows of heath and native grasses above 2,000 feet. There are no known threatened or endangered species within the project site. Construction of ski trails from 1960 to 1976 resulted in numerous areas on the mountain, including most notably the Steilhang, Waterfall and Tanaka lift hill, and Lower Race Trail areas. Erosion has created small gullies in some of these locations. In recent years, management has made a consistent effort to re-establish vegetation in these areas through the adoption of a specific mitigation and erosion control plan. This plan will be continuously updated to address new approaches and techniques for erosion control and revegetation.

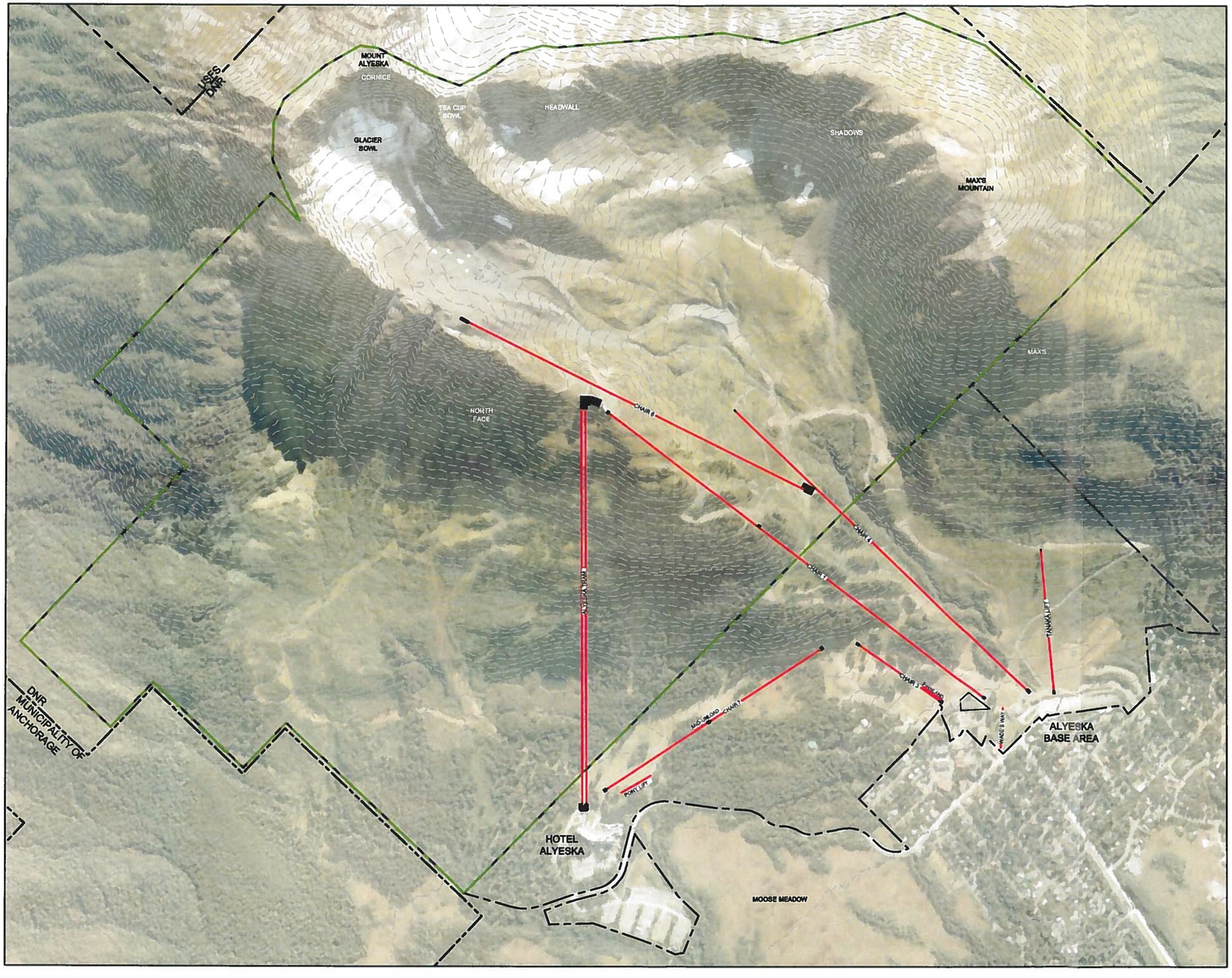
The Alyeska Resort site is comprised of two successional zones which support a variety of wildlife, including Moose and occasional Brown and Black Bear, voles, mice, marmots and pika squirrel on the valley floor and in the higher elevations. While there are no threatened or endangered animal species known to inhabit the site, the U.S. Forest Service has identified various management indicator species (MIS), which may be found within the site. MIS in the Late Forest Successional Zone include Black Bear, Red Squirrel, Spruce Grouse, and Townsend's Warbler. MIS in the Alpine Successional Zone include Mountain Goat, Dall Sheep and Willow.

6. Visual Resources

Alyeska Resort is situated in an area of outstanding scenic quality. Spectacular views are seen from the valley floor up Glacier Valley, Max's Mountain, and other peaks in the Chugach Range. Alternately, the upper portions of the trail network, and especially from the vicinity of the Glacier

Terminal, provide panoramic views of Turnagain Arm, Glacier Valley and Max's Mountain. The Resort is also highly visible from both the town of Girdwood as well as the Seward Highway while traveling southeast. Wildlife such as moose, bear and beaver are seen on a routine basis, which suggests that development has not had adverse impacts.

Over 1,000,000 visitors per year pass by Alyeska as they proceed down the Seward Highway en route to the Portage Glacier and the Kenai Peninsula. During the summer months, when the majority of visitors pass through the area, Alyeska offers Tram rides to the Glacier Terminal and Seven Glaciers Restaurant. As this is one of a few instances where many travelers can reach a high mountain peak, the Tram is becoming increasingly popular for tourists and diners, with a total visitation of 74,695 foot passengers during the summer of 2007. With the expansion of Resort facilities for summer and winter use, Alyeska hopes to attract a greater percentage of passers-by.



ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 2.0
PROJECT STUDY AREA

LEGEND

- PRIVATE PROPERTY BOUNDARY
- ALYESKA RESORT DNR LEASE BOUNDARY
- LIFTS

DECEMBER 2008

0 500' 1000'

Graphic Scale: 1" = 1000'

Contour Interval = 25'

North

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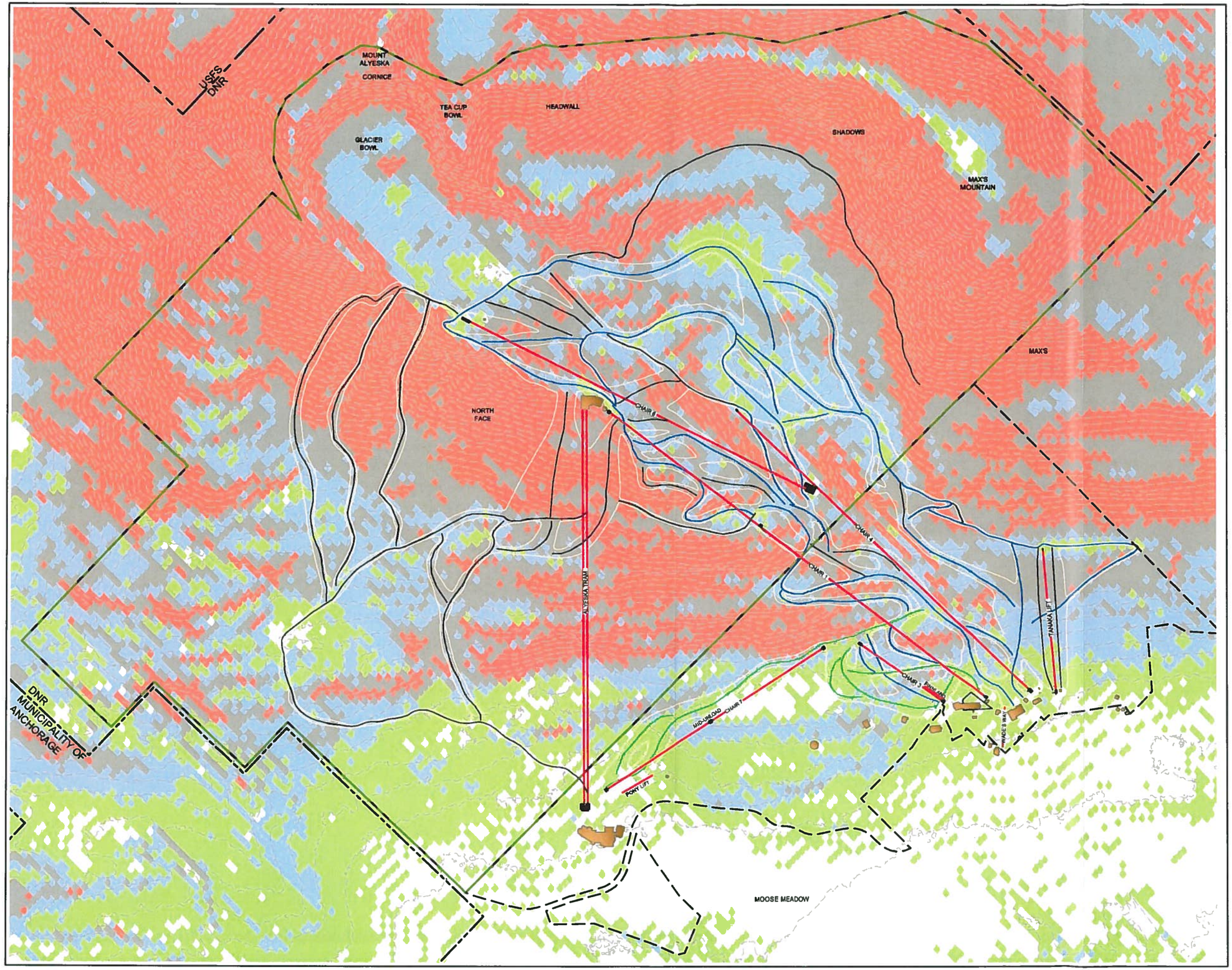


ALYESKA RESORT
ALASKA

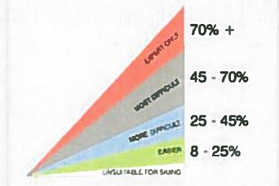
GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 2.1
SLOPE GRADIENT ANALYSIS

LEGEND

- NOVICE TRAILS
- INTERMEDIATE TRAILS
- EXPERT TRAILS
- LIFTS
- BUILDINGS
- ALYESKA RESORT DNR LEASE BOUNDARY
- PRIVATE PROPERTY BOUNDARY



DECEMBER, 2008

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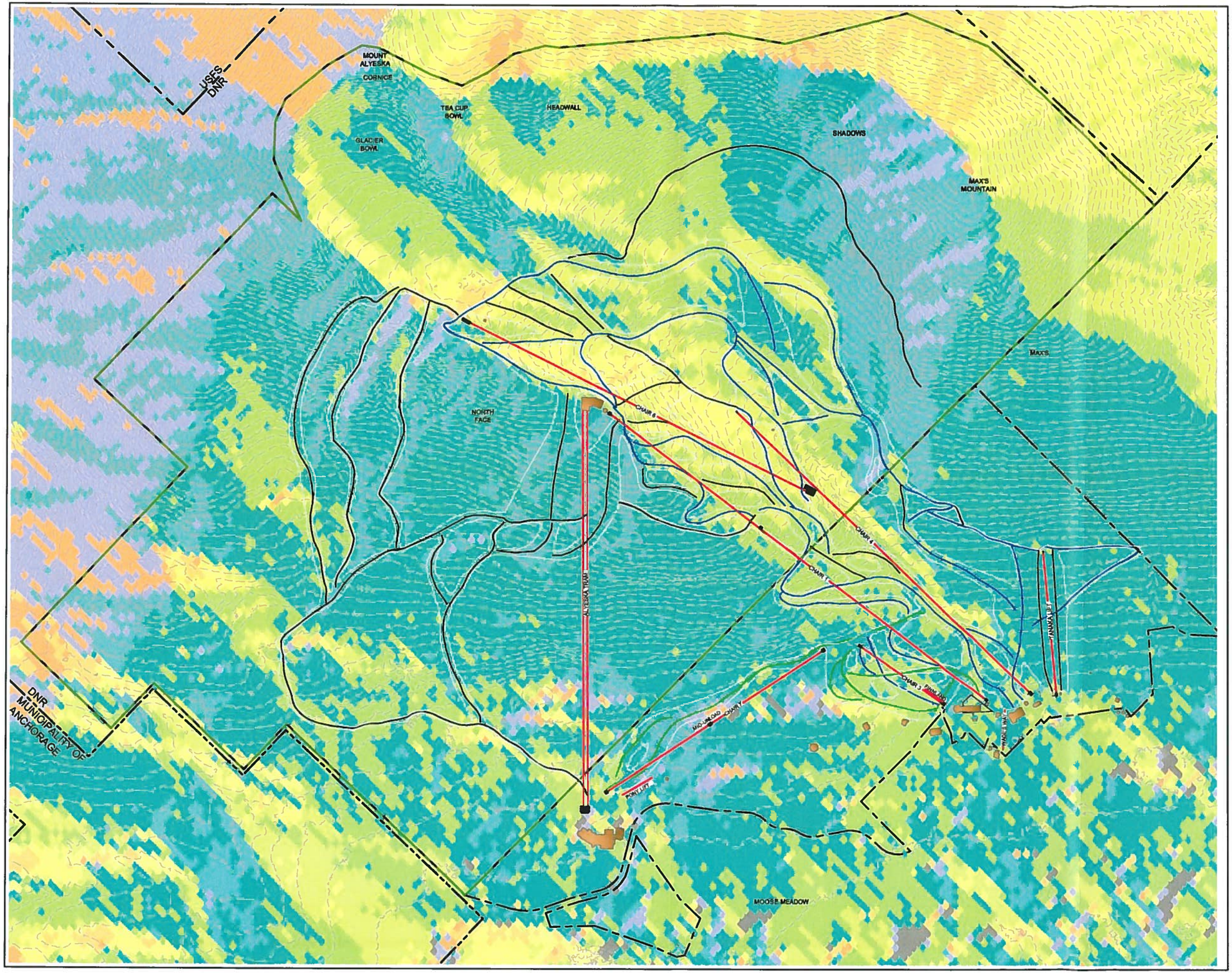

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 2.2
SLOPE ASPECT ANALYSIS

LEGEND

- NOVICE TRAILS
- INTERMEDIATE TRAILS
- EXPERT TRAILS
- LIFTS
- BUILDINGS
- ALYESKA RESORT DNR LEASE BOUNDARY
- PRIVATE PROPERTY BOUNDARY

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DECEMBER, 2008

0 500' 1000'

Graphic Scale: 1" = 1000'

Contour Interval = 25'

North

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ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 2.3
PERMIT BOUNDARY AND LAND OWNERSHIP

LEGEND

- LIFTS
- TRAILS
- ALYESKA RESORT DNR LEASE AREA
- ALYESKA PRIVATE LAND
- CHUGACH NATIONAL FOREST LAND
- DNR LAND
- MUNICIPALITY OF ANCHORAGE

DECEMBER, 2008

0 600' 1200'

Graphic Scale: 1" = 1200'

Contour Interval = 25'

North

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2008 Ski Area Master Plan

ALYESKA RESORT

CHAPTER 3: DESIGN CRITERIA

3. DESIGN CRITERIA

A variety of facility design criteria – each of which helps to create a quality ski experience – influence the upgrading and expansion of ski areas. At mountain resorts, guests have a variety of expectations – to participate in recreation associated with mountains, to enjoy dining and shopping opportunities, and to enjoy a mix of other vacation experiences in a mountain setting. Thus, a destination resort must offer a multitude of services, amenities, and experiences that are designed to allow guests to "re-create" their spirits. Design parameters that guide the development of everything from the pedestrian-oriented, social environment, to the Alpine experience, all contribute to the success of a destination resort.

Along with design guidelines, awareness of consumer preferences is crucial to the overall performance of a resort – for both recreational amenities and real estate product. Accordingly, detailed market research and user group surveys are effective tools to help guide the development of a successful resort. Resort innovation must be pursued to: (1) attract and retain target customers; (2) satisfy unmet needs; and (3) improve a resort's overall market effectiveness and efficiency.

Alyeska's current and future niche in the ski industry is best defined by diverse guest opportunities serving a spectrum of visitors. As stated in Chapter 1, Alyeska serves a broad range of guests from Anchorage Bowl day skiers, to families, to guests from outside of Alaska. Additionally, Alyeska has become somewhat of a "Mecca" for backcountry and free-skiing enthusiasts, as well as elite racers. These elite skiing athletes are increasingly drawn to Alyeska as a result of the Resort hosting several international-level competitions annually. Alyeska is unique in this arena, being one of very few resorts in North America that regularly holds championship competitions in both Alpine skiing and free-skiing and snowboarding (e.g., US Alpine Skiing Championships, World Telemark Freeski Championships, Mountain Sports International US Freeski Championships, Northface Masters World Snowboard Championships). To accommodate these users of varying ability levels, Alyeska strives to provide opportunities relative to each guest's demographic. For example, a beginner skier's experience will be as high of quality as the guest desires, through guest accommodations, Alyeska Mountain Learning Center experience, and terrain offerings. Likewise, an expert skier may desire managed, hike-to terrain in a remote location or lift-served, hike-to terrain provided by a high speed lift. Currently, Alyeska provides a diversity of recreation offerings to a wide range of guests; this capability will be further enhanced through the projects included in this Master Plan.

Based on Alyeska visitation data and trends, the ski area maintains a 1 to 10 destination-to-day skier ratio. Thus, destination guests that visit the Resort and stay within the Girdwood area overnight (at Hotel Alyeska or lodging within the area) account for approximately 10 percent of Alyeska's annual visitation. Day skiers, which are guests primarily traveling to and from the resort over the course of a

day and not staying overnight (this includes guests local to Girdwood, Anchorage and other surrounding areas), account for the remaining 90 percent of Alyeska's annual visitation. For ski resort operators, destination guests are a more attractive segment of the potential market because destination guests typically procure more services and amenities at a resort such as lodging, ski rentals, meals, and other services. Accordingly, a goal of the 2008 Master Plan, as well as the *Alyeska Area Master Plan*, is to incorporate improvements at Alyeska that will make the Resort more popular to destination guests. To this end, potential improvements would include the provision of additional rentable beds (e.g., hotels, condominiums or fractional units) and upgrades to the ski area facilities that would increase the level of guest service and quality of the ski experience. The intention of these improvements would be to attract larger numbers of guests from regional, national and international destination markets.

The following paragraphs describe the types of destination mountain resorts, and the principal base lands and mountain design criteria that lead to the development of a successful resort. More specifically pertaining to Alyeska, each of these descriptions details how Alyeska's design contributes to its niche.

A. Regional/Destination Resorts

One common characteristic of destination resorts is that they cater to a significant vacation market and thus offer the types of services and amenities vacationers expect. At the same time, some components of the destination resort are designed specifically with the day-use guest in mind (e.g., day-use parking). Additionally, the employment, housing, and community services for both full-time and second-home residents created by destination resorts all encourage the development of a vital and balanced community. This inter-relationship is helpful to the long-term success of the destination resort.

Destination mountain resorts can be broadly defined by the visitation they attract, in most instances either regional or national/international. Within these categories are resorts that are purpose-built and others that are within, or adjacent to, existing communities. Alyeska is an example of a resort constructed adjacent to an existing community – Girdwood – which is rich in cultural history, and immerses the destination guest within the glaciated, Chugach Range and the remote Alaska frontier. This combination of a desirable setting and history supplements the overall experience of a guest visiting Alyeska. Alyeska is a regional, and to a lesser degree, national and international destination resort.

1. Regional Destination Resorts

Regional destination resorts largely cater to a "drive" market. While day-use guests play a large role, the regional destination resort also appeals to vacationers. At Alyeska, lodging is a component, but

due to the average length of stay, and perhaps more importantly a guest's vacation budget, lodging and related services and amenities are usually less extensive than what is common for national/international destination guests at Alyeska or other national/international destination resorts. Where the regional destination resort has evolved from within, or adjacent to, an existing community, services are often supplied by proprietors in the existing community. Even though a portion of the services offered within Girdwood cater directly to guests of the Resort or summer vacationers to the area, proprietors within Girdwood also supply services to "locals," which helps maintain the balanced lifestyle that permanent residents and second home owners tend to enjoy.

2. National and International Destination Resorts

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

Many current destination visitors to Alyeska use the Resort as a gateway to the "Alaska Experience", which includes summer and winter activities that are uniquely appealing due to the state's vast wilderness, wildlife, back-country terrain, and expansive glaciers. Activities including dogsled rides, back-country snowmobiling, helicopter and back-country skiing, train rides, "flight-seeing", water and sea life, fishing, and trips to Denali attract visitors during both summer and winter. For these reasons, trips to Alaska in general and Alyeska specifically, are not just for ski and mountain vacations.

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

utilization due to a dramatic increase in summer mountain vacations. Hence, all of these trends add up to a significant demand for attractions and amenities that complement a resort's skiing facilities.

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

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

B. Base Area Design

1. Overall Layout

Design of the base lands for a destination mountain resort involves establishing appropriate sizes and locations for the various elements that make up the development program. The complexion and interrelationship of these elements varies considerably depending on the type of resort and its intended character.

Planners rely on resort layout as one tool to establish resort character. There may be a desire to create vitality and animation, such as at Vail Resort, or conversely to create serenity, such as at Utah's Sundance. The manner in which resort elements are inter-organized, both inside the resort core and within the landscape setting, along with architectural style, help to create the desired character.

The *Alyeska Area Master Plan* has initiated the design, layout and programming for future development of residential real estate, base area commercial space and skier services, both in the Alyeska base area and in the vicinity of Hotel Alyeska. Planning criteria established in the 2008 Ski

Area Master Plan has been and will continue to be coordinated with planning and design efforts related to the future base area developments on Alyeska property.

C. MOUNTAIN DESIGN

1. Trail Design

Slope Gradients and Terrain Breakdown

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

Table 3-1:
Terrain Gradients

Skier Ability	Slope Gradient
Beginner	8 to 12% (5 to 7 degrees)
Novice	to 25% (15 degrees)
Low Intermediate	to 35% (19 degrees)
Intermediate	to 45% (25 degrees)
Advanced Intermediate	to 55% (29 degrees)
Expert	over 55% (29 degrees)

Source: SE GROUP, Mountain Planning Guidelines

The distribution of terrain by skier ability and slope gradient is compared with the market demand for each ability level. It is desirable for the available ski terrain to be capable of accommodating the full range of ability levels reasonably consistent with market demand. The industry standard for skier market breakdown is shown in Table 3-2, illustrating that intermediate skiers comprise the bulk of market demand.

Table 3-2:
Skier/Rider Ability Breakdown

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

Source: SE GROUP, Mountain Planning Guidelines

Trail Density

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

Table 3-3:
Skier Density per Acre

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

Source: SE GROUP, Mountain Planning Guidelines

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

Recent trends in trail density design criteria tend to provide for a less crowded skiing experience. As witnessed at many western resorts, there is a segment of the market that has a preference for more

natural, unstructured, semi-backcountry types of terrain commonly referred to as "off-piste."[2] Demand is increasing for alpine open bowls, glades, and other similar types of terrain. Skier density per acre numbers are not necessarily applicable to these types of terrain, particularly as there often is not a defined edge to these areas like on a traditional ski run. However, skiers are attracted to these areas for the un-crowded feel, and the experience, adventure and challenge that it affords. Planning and design should provide these types of areas if possible. Examples range from glading between existing runs, to providing guided out-of-bounds tours. Guests of Alyeska desire this type of un-crowded experience as evidenced by the popularity of the North Face area, which services entirely high-angle, open skiing. As proposed in Chapter 5, to satisfy Alyeska's unique niche in the ski industry, Alyeska is investigating the possibility of providing lift service to the Headwall area with a top-terminal location that would provide expedited access to the upper bowl and Virgin Creek areas, as well as hike-to access to Max's Mountain and Tea Cup Bowl.

Trail System

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

In terms of a resort's ability to retain guests, both for longer durations of visitation and for repeat business, one of the more important factors has proven to be variation in terrain. This means providing developed runs for all ability levels: Some groomed on a regular basis and some not, bowl skiing, tree skiing, off-piste style skiing, and terrain parks and pipes.

In summary, a broad range of skiing terrain satisfies skiers from beginner through expert ability levels within the natural topographic characteristics of the ski area.

Terrain Parks

Providing a progression of terrain parks, from beginner through expert, is a primary goal. Teaching parks should be provided. Cross traffic should be minimized with good visibility provided in merge zones. Park features should flow easily from one to another and avoid creating bottle necks and traffic jams. Novice parks and features should be separated from the more advanced parks, and should be geared toward a learning environment. A low pressure venue should be provided for beginners, to allow them to feel comfortable as they practice tricks and become accustomed to

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

transitions and jumps. Signage should clearly and simply delineate the difficulty of the various parks and features. This will help ensure that users are directed to the feature size most appropriate to their ability. Maintenance of the park is critical to ensure quality and the reputation of the park with park enthusiasts. Quality and diversity of features over quantity should be a goal. As the locations of features, particularly pipes, become fixed, constructing them out of earth can greatly reduce the amount of snow coverage required.

2. Lift Design

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

3. Capacity Analysis and Design

Comfortable Carrying Capacity ("carrying capacity") is defined as a level of utilization for the ski area (the number of visitors that can be 'comfortably' accommodated at any given time) that provides a pleasant recreational experience, without overburdening the resort infrastructure. It is not uncommon for resorts to experience peak day visitation up to 25 percent above their carrying capacity. The accurate estimation of the carrying capacity of a mountain is a complex issue and is the single most important planning criterion for the Resort. Related skier service facilities, including base lodge seating, mountain restaurant requirements, sanitary facilities, parking, and other skier services are planned around the proper identification of the mountain's true capacity. The carrying capacity figure is based on a combination of the uphill hourly capacity of the lift system, the downhill capacity of the trail system, and the total amount of time spent in the lift waiting line, on the lift itself, and in the downhill descent.

D. Balance of Facilities

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

2008 Ski Area Master Plan

ALYESKA RESORT

Chapter 4: Existing Ski Area Facilities

4. EXISTING SKI AREA FACILITIES

The following section contains an examination and analysis of existing skier facilities at Alyeska. Completion of a thorough Resort inventory is the first step in the master planning process and involves the collection of data pertaining to Alyeska's existing facilities. This inventory includes ski lifts, ski trails, the snowmaking system, night skiing, base area structures, skier services, other Resort functions/activities, day-use parking and ski area operations. The analysis of the inventoried data involves the application of ski industry standards to Alyeska's existing conditions. This process allows for the comparison of Alyeska's existing ski facilities to those facilities commonly found at comparison ski resorts of similar size and composition.

The overall balance of the existing ski area is evaluated by calculating the skier capacities of various facility components and then comparing these capacities to the ski area's current carrying capacity. This examination of capacities helps to identify a ski resort's strengths and deficiencies. The next step is the identification of improvements which would bring the existing facilities into better equilibrium, and will assist the Resort in meeting the ever-changing expectations of their skier marketplace. Accomplishing these objectives will result in a well-balanced Resort which provides an adequate array of services and experiences to satisfy guest expectations for a world-class recreation experience.

A. SUMMARY OF GUEST EXPERIENCE

Determining the Resort's carrying capacity is an important first step in evaluating the overall guest experience because it enables planners to understand the overall balance of the resort facility. Empirical observations and a close examination of Alyeska's principal components reveal some key surpluses and deficiencies.

Alyeska's carrying capacity is computed by analyzing the Resort's supply of, and demand for, vertical transport. As the ski area facilities and terrain exist today, the capacity of the lift and trail network was determined to be approximately 3,650 guests (see Appendix A, Table 5 for a detailed carrying capacity calculation).

Generally speaking, and notwithstanding challenges related to weather, the current guest experience at Alyeska Resort is very good. Actual daily visitation levels at the Resort are well below the calculated carrying capacity, meaning that long lift lines are uncommon, and most skier service facilities are not over-burdened. Alyeska typically receives abundant snowfall, and when snowfall is below average, a sophisticated snowmaking system is in place to provide adequate snow coverage to a significant portion of the trail network. The Alyeska grooming fleet is modern and appropriately sized such that the trails can be immaculately groomed on a regular basis. The extent and quality of

off-piste and hike-to, back-country ski terrain at Alyeska is the envy of many resorts in the lower 48. Hotel Alyeska provides three-star accommodations for destination guests with immediate Tram access to the ski area. This collection of facilities and operations, when combined with the terrain availability and variety, attracts international competitors to Alyeska for racing and free skiing events. These events, in turn, have placed Alyeska on the global map as a place to visit.

Despite its many attributes, there are a number of deficiencies at Alyeska that detract from the guest experience and may contribute to the Resort's inability to substantially increase annual skier and non-skier visitation. The existing base area buildings at Alyeska are old and in poor physical condition, creating a negative first impression of the Resort. The day-skier experience would be enhanced with more close-in parking, and the remote lots at the Resort are generally underutilized due to their distance from the base area. Many of the existing lifts are old and slow, and the Resort would benefit from a high-speed lift serving the main base area. While Alyeska has a wide variety of terrain for all abilities, there are a number of bottleneck areas and natural terrain undulations that constrict skier flow, causing the ski area to feel smaller to certain skier segments, and compromising effective grooming operation. Despite Alyeska's reputation for "big-mountain" skiing, the terrain is somewhat limited in total scope and area, and the Resort would benefit from more vertical drop and a wider variety of back-country, hike-to, and off-piste terrain. Summer operations at the Tram and Hotel Alyeska are very strong with tour groups and cruise ship operators, but there are very limited offerings to attract Anchorage Bowl and other local residents from taking day-trips to Alyeska during the summer months.

The following chapters present a more detailed analysis of Alyeska's current strengths and weaknesses, followed by a description of improvements and upgrading programs that would help to improve the overall guest experience at Alyeska and enhance the Resort's image to regional, destination and international markets.

B. Alpine Facilities

1. Lifts

Alyeska's lift network consists of an aerial tramway, six aerial chairlifts, one wire-rope beginner lift, and two beginner carpets (see Appendix A, Table 1 for individual lift specifications). These lifts include:

- 1 60-Passenger Jig-back Aerial Tramway: Alyeska Tramway
- 1 Detachable Quad High-speed Lift: Chair 6
- 3 Fixed-grip Quad Chairlifts: Chair 3, Chair 4, Chair 7

- 2 Fixed-grip Double Chairlifts: Chair 1, Tanaka Lift
- 1 Wire Rope: Pony Tow
- 2 Magic Carpets: Finnland, Wades Way
- Total Uphill Lift Design Capacity per Hour: 11,535 guests

The existing lift network serves Alyeska's alpine terrain in a logical and relatively efficient manner. Top terminals are generally located in strategic locations, in terms of providing efficient skier circulation and good interconnection between lifts. The spatial arrangement of some lifts is such that considerable walking is required between lower terminal placements and base area facilities. Chair 7 is 400 feet from Hotel Alyeska, and Chair 3 is approximately 800 feet away from the Daylodge and parking area. As these lifts are used primarily by novice-level skiers, the distance from facilities is a shortcoming. Additionally, the Tanaka Lift is over 400 feet from the Daylodge. The current lift placements are primarily a result of site topography. Proposed modifications to Chair 3 and the Alyeska base area layout will remedy walking distances to Chair 3, as described in Chapter 5 – Proposed Upgrading Plan.

Lift Discussion and Overview

The following is a brief discussion of each lift at Alyeska.

The Alyeska Tramway was built in 1993, primarily for summer guests and access to the Glacier Terminal for dining and sight-seeing. However, the Tram has become extremely popular to expert skiers who enjoy the vast, high-angle terrain of the North Face. An increased number of guests are starting their ski-day at Hotel Alyeska and use the Tram for direct access to the upper Bowl area. The Tram is also a popular repeat-skiing lift on rainy days. The Tram operates year-round and into the evening for Seven Glaciers restaurant diners.

Chair 1 is a very old lift (nearly 30 years old) and has a long ride time due to relatively low rope speed and long distance. For this reason, Chair 1 is not a popular lift. However, Chair 1 is a useful "workhorse" for Alyeska, in terms of providing ski patrol access to Gun #2 when wind conditions do not allow access via the Tram, and Chair 1 is the primary night skiing lift. The Chair 1 mid-load ensures quality intermediate skiing on the upper portion of the Chair 1 lift/trail complex. This loading station currently enables intermediate skiers to ski round-trip on the upper half of the Chair 1 network, avoiding skier congestion that can occur on Von Imhof Drive, or when snow or weather conditions are less favorable on the lower half of the trail network.

Prior to the 2008/09 ski season, Chair 3 was the oldest lift at Alyeska, installed in 1974. During the summer of 2008, Chair 3 was realigned and replaced with a fixed-grip quad chairlift. The top

terminal was relocated to the north of the prior terminal site in order to mitigate traffic conflicts at the top terminal unload with through-skiers on upper Chair 3 Road. The new lift has a higher hourly capacity, which should shorten lift-lines considerably. Chair 3 provides a good quality experience for the novice skier, and creates a very good progression for learning skiers that graduate from Wade's Way and the Finnland carpet.

The Chair 4 top terminal is well located to facilitate access towards Chair 6, Race Trail/Sourdough and the Lower Bowl (Corkscrew/Waterfall/Klondike). On weather days when the upper mountain may be closed, this lift remains open and can handle a high capacity of skiers (2,100 people per hour). With its low rope speed and long alignment, the ride time on Chair 4 is quite long, and as the primary out-of-base lift from the Alyeska base area, Chair 4 is being considered for replacement with a detachable lift. Detachable technology on the Chair 4 alignment would also increase the utilization of the lower mountain terrain, thus better distributing skiers around the mountain on high-visitation days.

Chair 6, a detachable-quad lift built in 1988, is the most popular lift at Alyeska due to riding comfort and the diversity of terrain served. From a pure skiing stand point, the slopes served by this lift embody the unique "Alyeska" ski experience. As a result, Chair 6 experiences the highest use at Alyeska. However, given the high hourly capacity of Chair 6, lift lines that sometimes reached 18-20 minutes on the old Chair 2, have been reduced by more than half. The current detachable mechanism and mechanical equipment in the Chair 6 terminals is antiquated by detachable lift standards, requiring intensive maintenance and causing challenges for parts replacement. The size and location of the Chair 6 bottom terminal poses an issue for skier traffic, circulation, and mazing around the terminal. Additionally, the gradient of the Runway trail, which is the main access route into Chair 6 from the Bowl, is too steep based on the width of the trail. The ski area has erected temporary fencing and baffling to slow skiers as they approach the terminal. The Chair 6 terminals are being considered for replacement and/or relocation.

Chair 7 provides access from the Hotel to the Chair 3 area, as well as terrain for novice skiers. The upper half of Chair 7 crosses very flat terrain, causing skiers to traverse back over that flat slope – the upper portion of Blueberry Hill trail – to return to the base of the lift. When snow conditions are wet, and for small children generally, the flat portion of upper Blueberry Hill does not have sufficient slope to maintain forward momentum, and poling or walking is required. During the summer of 2008, Alyeska installed a mid-terminal unload station on Chair 7 that avoids the upper flats of Blueberry Hill, thus improving the skiing experience for novice skiers.

The original Chair 7 was run at a very slow rope speed to facilitate loading by novice-level skiers. The fixed-quad configuration of the lift also caused a high number of lift stoppages due to miss-

loads. These conditions caused the ride time on Chair 7 to be long. To improve this situation Alyeska installed a loading carpet during the summer of 2008 at the base of Chair 7. This loading carpet assists the loading process and allows the lift to operate at a higher rope speed, thus increasing the capacity of this lift.

The Tanaka Lift serves advanced intermediate terrain and is used primarily for race training once adequate snow cover is attained. Given the steepness of the upper slope and the comparative lack of snow at this elevation, this lift is currently under utilized. Options will be presented in the upgrading plans to establish alternative terrain features to the Tanaka Hill, which would increase utilization of the area.

During periods when the upper mountain lifts are not operating (i.e., early season or wind closures), skiing is restricted to chairs 3, 4, 7, or Tanaka, depending upon the conditions. With the recent expansion of the snowmaking system to the Glacier Terminal, the enhanced snowmaking coverage provides early season skiing on the Tram and chairs 1, 3, 4, 7, and Tanaka. During periods of high winds the ski area relies primarily on chairs 3, 4, and 7.

2. Developed Alpine Terrain Network

The developed, or formalized, terrain network at Alyeska consists of the named, defined, lift-serviced, maintained runs at the Resort. Most of these runs are groomed on a regular basis, although some are intentionally left ungroomed. These runs represent the baseline of the terrain at any resort, as they are where the majority of guests ski, and they are usually the only place to ski during the early season, periods of poor or undesirable snow conditions, avalanche closures, and certain weather conditions. Typically, terrain off the developed network is only used by advanced and expert level skiers, during periods of fresh powder, spring corn, and other desirable snow and weather conditions. As such, the developed terrain network represents a true reflection of acreage used by the average skier on a consistent basis, as well as the terrain used by all skiers during the aforementioned conditions. Therefore, the total acreage of the terrain and the ability level breakdown must be sufficient to accommodate the full skier capacity of the Resort. As a result, only the developed terrain network is applied to the trail acreage calculations, skier classification breakdown, trail capacity, and density formulas. If terrain outside of the developed network were included, it would have a misleading effect on all of those calculations. However, terrain outside of the developed network is very important to terrain variety and the overall quality of the guest experience, and as such is addressed in the next section.

Alpine Trails Discussion

The existing trail configuration is shown in Figure 4.0. The ski area is served by a network of approximately 67 trail segments accommodating a variety of ability levels, as depicted in Appendix

A, Table 3. The trail system accounts for about 256 acres of terrain, with approximately 530 acres of tree and open skiing opportunities available in addition to the formalized trail network, as discussed below.

Trail development has used the available terrain and topographic resources to the best advantage possible. While the ski trail network is more skewed towards the upper ability levels, this is primarily a result of topographic constraints, not poor design.

The majority of the ski terrain is located on the upper mountain in the "Bowl" area. A large portion of this terrain is suitable for intermediate skiers; however, this Upper Bowl terrain is difficult to ski under stormy conditions as a result of "flat light" and the absence of trees. Accordingly, trail use patterns and resultant skier density varies according to mountain conditions, including weather, quality/quantity of snow, and solar orientation. For example, if the upper mountain is closed, there is a heavy reliance on the lower trail system, especially those trails served by the Tanaka Lift and chairs 3, 4, and 7.

Contrary to public perception, Alyeska has a large supply of intermediate ski terrain. In fact, the breakdown of available ski terrain by ability level (based on slope angle) shows a supply of intermediate terrain which exceeds normal industry standards. However, the high percentage of intermediate terrain is somewhat deceiving when it is measured qualitatively (number of trails, ability to service with a lift, consistency of fall line, uniform widths, and snow/climactic conditions). As a result of topographic constraints which limit trail and ski lift development to only a portion of the available terrain, Alyeska has exhibited a shortage of good lift served intermediate ski trails. From a qualitative perspective, the most "skiable" trails at Alyeska for intermediate ability levels include Lower Race Trail, South Edge, Mighty-Mite, Silver Tip, and Champagne/Weir/Ego Flats. The upgrade section of the report will suggest alternatives designed to maximize and improve the skiability of other intermediate trails.

From the top of chairs 1, 4, 6 and the Tram, the lowest ability level served is intermediate. In fact, due primarily to topographic limitations, the present ski trail network does not provide adequate terrain for low intermediate skiers. Novice skiers at Alyeska are forced to graduate quickly to intermediate classified ski trails. Further, as a result of the steep band of terrain in the middle of the mountain, both primary intermediate trails have required the use of catwalks, which in the past have been difficult for intermediate skiers to negotiate due to the steepness and narrowness. The upgrading program will discuss opportunities for adding low intermediate terrain at Alyeska, and making improvements to existing catwalks.

Chair 6 provides good uphill capacity and skier circulation for the majority of Alyeska's intermediate terrain which lies in the Upper Bowl. This terrain is comprised of Mighty Mite, Silvertip, Trapline,

Champagne, The Weir, and Ego Flats. Skiers descending Ego Flats access Chair 6 via the Runway Trail. Additionally, skiers from Chair 4 travelling towards Don's Run and Sourdough merge with these skiers, causing congestion on Runway. On peak operating days, Alyeska places patrol personnel at the intersection of Lower Alpine/Ego Flats/Runway to moderate skier traffic. The issue of this high density merge zone will be addressed in the upgrade plan.

Uneven ground and topography present operation and skier flow challenges on both Mighty Mite and the top of South Edge. Grading in those areas could significantly improve grooming operations and skier circulation. Additionally, as the wide-open Upper Bowl ski terrain comes to an abrupt halt in constriction zones such as the Waterfall, Easy Route and Klondike, additional intermediate trail enhancement is required on the Lower Bowl side. The upgrading section of the Master Plan will address intermediate skier routing through the Waterfall/Klondike area, as well as other intermediate trail improvement opportunities.

Alyeska's trail network is characterized by higher skier density in areas where funneling occurs. On the Chair 1/Chair 4 trail systems, the most notable areas of congestion are at the entrance to Von Imhof Drive from Denali and, to a lesser degree, the Lower Race Trail.

On peak operating days, Alyeska places patrol staff at the junction of Von Imhof and Denali to help moderate skier traffic. While the congestion problem through Von Imhof is now much improved, further upgrades will ameliorate the situation even more, while improvements to Denali will improve the skiable width and grooming operations of that run during low-snow conditions. Also, Alyeska's efforts to move race training to the Tanaka Lift has modestly improved the congestion situation on the Lower Race Trail. Though less visible, the potential for congestion is now more pronounced on the "bowl" side, where the entire trail system funnels into the Creek Crossing/Corkscrew/Waterfall and Klondike areas. Improvements to these congestion areas will be discussed in the upgrading section.

The trail network comprising the Chair 3 and Chair 7 area serves novice and lower intermediate skiers. This trail system provides for the separation of lower and intermediate ability levels and access to the lower Tram/Hotel area. The terrain served by the Tanaka Lift is tailored to the advanced intermediate skier.

Though the Tanaka Lift is now used more extensively for race training, the Lower Race Trail is also used for this purpose. Since this trail is one of two primary descent routes on the mountain, it is important to recognize the critical need to maintain this trail for public skiing to the greatest extent possible, while at the same time considering the needs of the active racing community at Alyeska. Scheduling of race competitions and training to avoid afternoon egress by day skiers from the upper mountain can resolve much of this conflict.

When the Alyeska Snow Safety Director deems it prudent, the Resort endeavors to open part or the entire North Face slope as frequently as possible due to its popularity. Entry is controlled through gate access at various locations along the north rope line. Recent trail work, snowmaking, and additional grooming on Autobahn and Jim's Branch have allowed these trails to be consistently open and skiable, even in times of low snow cover. Grading on the upper section of Autobahn will allow it to be skied and operated as efficiently as the improved lower section.

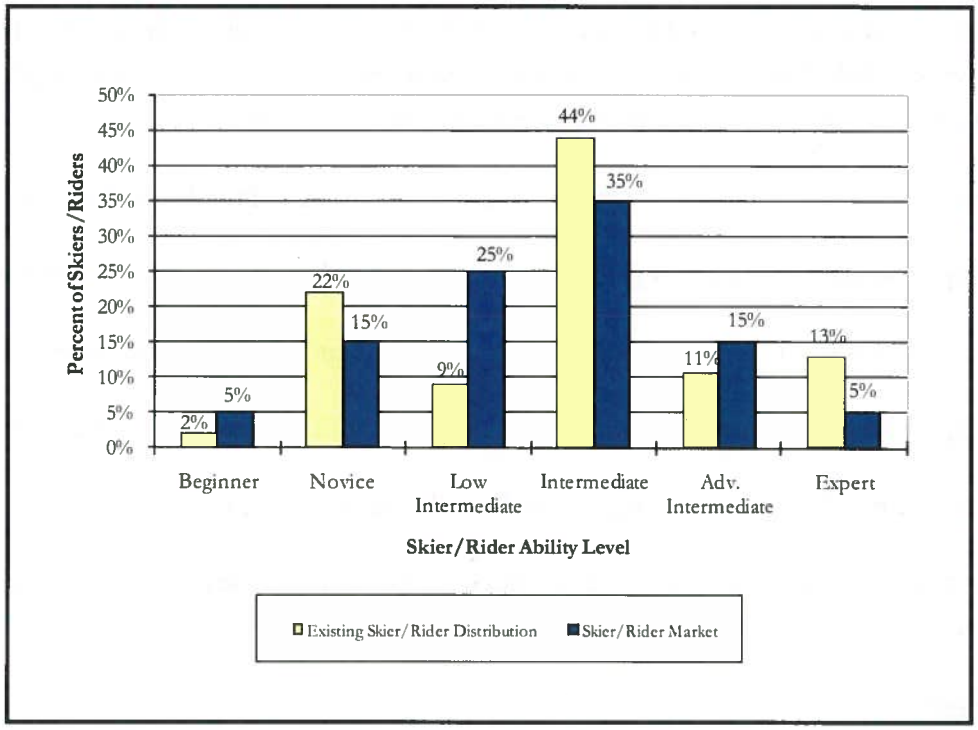
Terrain Distribution by Ability Level

Past skier surveys have indicated that the skill level distribution in the skier market for Alyeska is consistent with a typical regional destination resort in the Pacific Northwest. Accordingly, the potential demand for terrain through the full range of skill levels is in-line with the ideal breakdown for the regional destination skier market. The terrain classification breakdown of the existing ski area is set forth in the following table. The last column in this table represents what can be considered the ideal skill level distribution in the relevant skier market and provides a comparison with the existing breakdown at Alyeska.

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

Skier/Rider Ability Level	Trail Area	Skier/Rider Capacity	Alyeska Skier/Rider Distribution	Skier/Rider Market
	(acres)	(guests)	(%)	(%)
Beginner	1.3	40	2	5
Novice	25.7	463	22	15
Low Intermediate	13.6	190	9	25
Intermediate	93.0	930	44	35
Adv. Intermediate	32.3	226	11	15
Expert	89.7	269	13	5
TOTAL	**255.6**	**2,118**	**100**	**100**

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



The above table clearly illustrates that there are major surpluses in the intermediate and expert areas at the expense of low-intermediate and advanced intermediate skiers. As stated previously in the discussion of ski trails, it should be noted that the surplus of intermediate ski terrain shown in the table above is deceiving. In fact, when compared to many other ski resorts, Alyeska has a shortage of good lift-served intermediate ski trails. As mentioned earlier, this is primarily a result of topographic constraints which limit trail and ski lift development to only a portion of the available terrain. It is interesting to note the shortage of beginner, low intermediate, and advanced intermediate terrain – this could indicate that skiers would have a difficult time progressing through the ability levels as they improve, as these crucial intermediary terrain levels are in short supply.

3. Terrain Variety/Alternate Terrain

In terms of a resort's ability to retain guests at that resort, both for longer durations of visitation and for repeat business, one of the more important factors has proven to be variation in terrain. This means having developed runs of all ability levels, some groomed on a regular basis and some not, as well as mogul runs, bowl skiing, tree skiing, back-country style (hike-to) skiing, and terrain parks and pipes. To provide the highest quality guest experience, resorts should offer some level of all terrain types to the extent it is practical. Even though some of these types of terrain only provide ski opportunities when conditions warrant, terrain variety is increasingly becoming a crucial factor in guests' decisions of ski destinations.

Glades, Bowls, and Back-Country Style Terrain

Alyeska provides an uncommonly wide variety of alternate terrain. These areas are found in the open terrain located between the formalized trail network in the Bowl, on the south side of the Bowl accessed by the High Traverse, on the North Face, and the hike-to terrain on the Headwall and on Max's. In total, this terrain encompasses around 530 acres, including:

- Approximately 115 acres of open bowl terrain accessible off the High Traverse;
- Approximately 130 acres of glades, chutes, and natural openings in the North Face area;
- Approximately 90 acres of glades and natural openings in between the defined runs;
- Approximately 80 acres of glades, open bowl, and chutes in the Max's area; and
- Approximately 115 acres of open bowl and chutes on the Headwall.

The upgrading and expansion program is intended to optimize the use of the undeveloped and alternate terrain.

Terrain Parks

Terrain parks have become a vital part of most mountain resort's operations, and are now considered an essential mountain amenity. Popularity of terrain parks continues to increase, and is dependent on regional location of the resort, demographics of the resort's target guests, and, significantly, the quality of the parks. Resorts that understand the importance of addressing the needs of the youth market, have focused considerable attention on building high quality parks, and in the right location and demographic, can often see the majority of their guests utilizing their terrain parks. In the past decades, much of the increase in mountain resort visitation has resulted from the emergence of snowboarding, with the development and evolution of terrain parks following. The technology and culture of snowboarding has crossed over into skiing as well, with most ski manufacturing companies now offering terrain park specific twin-tipped skis. The presence of terrain parks at mountain resorts has changed various operational and design elements. The demand for grooming can increase, as terrain parks often require specialized or dedicated operators, grooming machines, and equipment (such as half-pipe cutting tools). Terrain parks typically require significant quantities of snow, either natural or man-made, often increasing snowmaking demand. Terrain parks can affect circulation on the mountain, as the parks are often a guest destination. Many resorts have either installed terrain park specific lifts, or locate their parks in areas that can easily be repeat-skied off existing lifts. Additionally, terrain parks are now often built in highly visible, highly desirable locations on the mountain, given the excitement and marketability they create. As music and animation are significant attractions for the youth market, half pipes and terrain parks will often have music, flags, and other items as part of the animation.

Current trends in park and pipe design are focused on quality and creating progression, so that less experienced riders have the means and ability to learn how to use the more difficult features. Parks are typically made up of pipes and constructed features. Pipes include superpipes, regular half pipes, mini or beginner half pipes, and quarter pipes. Features include both snow features, like rollers, step ups, hits, tabletops, and hips; and constructed features like rails, fun boxes, C boxes, spines, rainbows rails, and trapezoid rails, to name just a few. Beginner parks typically have features that are lower in height, softer, and rounder; typically with rollers and wide rails. The next step usually has small tabletops and more difficult rails. From there, parks will progress up to high-end parks showcasing significantly larger jumps and technical rails. Another way resorts are increasingly catering to these ability levels is by offering lessons on how to use parks, from beginner up to expert. Quality in park construction and design is achieved by positioning various features in such a way that riders can link them together, by making individual features have multiple uses to provide variety between runs, by providing multiple take off points on features, and basically by keeping all the features of the park well built, and interesting.

Terrain parks are an important part of Alyeska's operations. Alyeska has tried terrain parks in a number of locations over the last several years. For the 2008/09 season, Alyeska intends to offer: 1) a park for less accomplished riders on the north edge of Perseverance Trail, 2) a slightly more challenging park on Blueberry Hill just below the Chair 7 mid-unload, 3) a ¼ pipe on lower Blueberry Hill, and 4) a boarder-cross run with table tops and other features on the west edge of Main Street, just above The Weir (the boarder-cross trail would be built in mid- to late-January to prepare for competitions and then maintained for the public until the end of the season.) Areas not currently designated as having terrain features may have them in the future. Alyeska doesn't allocate an ability level to a terrain park run as they constantly assess each run to ensure that the best use is made of the terrain. Evaluations are made throughout the season of features, ability levels, traffic patterns, snow depth, and customer feedback; which will sometimes lead to the parks being rebuilt several times during the year. Alyeska also moves terrain features as snow base and customer use dictate. Park features and ability levels change throughout the season. Identifying the potential for a more extensive terrain park location will be a part of the upgrading plan.

C. Comfortable Carrying Capacity

The daily carrying capacity of a resort is described as the Comfortable Carrying Capacity (the "carrying capacity"). Carrying capacity does not indicate a maximum level of visitation, but is rather a planning tool defined as the number of daily visitors a resort can comfortably or efficiently accommodate at one time without overburdening the Resort's infrastructure. The carrying capacity is derived from the Resort's supply of vertical transport (the combined uphill hourly capacities of the lifts) and demand for vertical transport (the aggregate number of runs demanded multiplied by the

vertical rise associated with those runs). The carrying capacity is calculated by dividing vertical supply (VTF/day) by Vertical Demand.

As stated earlier, the accurate calculation of a ski area's carrying capacity is an important, complex analysis and is the single most important planning criterion for the ski area. All other related skier service facilities can be evaluated and planned based on the proper identification of the mountain's capacity. The detailed calculation of Alyeska's current carrying capacity is described in Table 5 of Appendix A and is calculated at 3,650 guests per day. It is not uncommon for ski areas to experience peak days during which skier visitation exceeds the carrying capacity by as much as 25 percent. However, from a planning perspective, it is not recommended to consistently exceed the carrying capacity due to the resulting decrease in the quality of the recreational experience, and thus the resort's market appeal.

At Alyeska, the carrying capacity of 3,650 has rarely been exceeded, and peak days typically range between 2,500 and 3,000 skiers. This condition suggests that lift line waiting times are generally less than the 5 to 7 minutes used to calculate the carrying capacity, or that some lifts, such as Chair 1 and Tanaka, are underutilized during peak days. In many cases, peak day visitation that is lower than the ski area carrying capacity is an indication that other factors, such as lack of sufficient parking or inadequate day lodge space, are limiting factors to achieving increased daily and annual skier visitation. Further analyses later in this Chapter will compare the skier capacity of supporting ski area functions with the carrying capacity. These analyses may uncover imbalances that, if rectified, could help Alyeska to achieve peak-day visitation that meets or exceeds its carrying capacity.

D. NIGHT SKIING PROGRAM

Alyeska currently provides night skiing on the trail network served by chairs 1, 3, 4, 7, Tanaka and the Tram, a total area of about 102 acres. Illuminated night skiing trails are illustrated on Figure 4.1. Under normal operating conditions, Alyeska operates chairs 1 and 3 and the Tram for night skiing. Chair 4 is generally utilized as backup when high winds and/or snow conditions on the upper mountain restrict the use of Chair 1 and the Tram. The Tanaka Lift operates at night for racing. Based upon a combination of uphill lift capacity and downhill terrain capacity, the current night skiing terrain can comfortably accommodate about 2,000 skiers at one time.

Alyeska presently utilizes metal halide 1,000-watt lighting units to illuminate the trail network. This system meets the guidelines of the American National Standards Institute (ANSI).

Alyeska operates the night skiing program three nights a week, except during holiday periods, to better match operations with visitation patterns. Saturday night has normally exhibited the greatest attendance with the highest recorded visitation of 845 skiers occurring in March of 1991.

The night lighting program at Alyeska also permits a full day of operation during the early ski season when shorter daylight hours prevail. Possible plans to expand night lighting to new terrain, as well as to enhance the transition period between day and night skiing, will be addressed in the upgrading program.

E. Skier Services Facilities and Food Service Seating

1. Skier Services Locations

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

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

Staging-related skier services – tickets, rentals, retail, and lockers – are currently offered in two base area staging locations at Alyeska: The main Alyeska base area and Hotel Alyeska.

On-mountain skier service facilities are generally used to provide restaurant seating, as well as ski patrol and first aid services, in closer proximity to upper-mountain ski terrain. Recently, it has become common for ski areas to offer ski demo locations on-mountain, so skiers can conveniently test different skis throughout the day. At Alyeska, on-mountain services are provided at the Glacier Terminal.

Alyeska Base Area

Alyeska's main base area is the primary day-skier portal to the mountain. Skier service facilities in the Alyeska base area include day-skier parking lots, a first aid station, the Day Lodge, and the Sitzmark Bar. Additional facilities in the Alyeska base area include the Race Training Center and the Challenge Alaska building. The various skier service functions that are available in the Alyeska base area include: Food service, bar/lounge, rest rooms, guest services, ski school, rental/repair shop, retail, ticket sales, public lockers, and ski patrol/first aid.

Redevelopment of the Alyeska base area, as described in the *Alyeska Area Master Plan*, involves the eventual replacement of all skier services buildings in the Alyeska base area. Planning for future development of skier services in the buildings that will make up Alyeska Village will be guided in part by the spatial planning recommendations set forth in this 2008 Master Plan.

Hotel Alyeska

Hotel Alyeska provides staging services for day skiers that park in the adjacent overflow parking lots or arrive at the Hotel via the local shuttle service. In addition, guests at the Hotel start their ski day from the second floor of the Hotel, which provides direct access to the Tram and Chair 7. In recent years, use of the Hotel as a portal to the ski area has risen dramatically, due largely to improvements made to the skier services in the Hotel, as well as the direct access to the upper mountain via the Tram, and high quality learning terrain associated with the Pony Tow and Chair 7. Skier services that are available in the Hotel include: Food service, bar/lounge, rest rooms, guest services, rental shop, retail, ticket sales and public lockers. However, these services were designed for the Hotel guest and not the day skier, and as such, are quickly overtaxed by the day skier.

It is estimated that between 75 to 80 percent of Resort guests use the Alyeska base area portal to access the ski area, while the remaining 20 to 25 percent of guests enter the ski area through the Hotel Alyeska portal.

Glacier Terminal

Additional skier services are available at the Glacier Terminal building at the top of the Tram, which houses the Seven Glaciers restaurant/bar, Glacier Express restaurant, the on-mountain Demo center, and the Roundhouse ski patrol station and Museum. The Glacier Terminal, which was constructed in 1993, is situated on a ridgeline at an elevation of 2,300 feet, offering a view which includes Turnagain Arm, Glacier Valley, Max's Mountain and Crow Pass. The old Roundhouse portion was renovated in 2007 and is accessed via the Glacier Express restaurant outside patio deck. Due to the recent addition, the impact to the operation and business is uncertain, although it is anticipated to have a positive impact on sightseeing traffic. Services available at the Glacier Terminal include: Food service, bar/lounge, rest rooms, ski demos, retail, and ski patrol/first aid.

The restaurants in the Glacier Terminal help to distribute skiers evenly throughout the ski area by allowing many skiers to remain on the upper part of the mountain. The restaurants also have a tremendous view of the Tram and Glacier Valley. Consequently, the presence of this facility reduces base area congestion during the lunch hour.

In conjunction with Tram summer operations, the Glacier Terminal is a popular attraction catering to Resort guests, tour groups and the general public. The Tram allows access of this facility to all persons regardless of disabilities.

A complete inventory of existing guest services is located in Table 7 of Appendix A.

2. Space Use Analysis

Sufficient guest service space should be provided to accommodate the existing resort carrying capacity of 3,650 guests per day. The resort carrying capacity is the design standard and planning tool defined as the number of daily visitors a resort can comfortably or efficiently accommodate at one time without overburdening the resort infrastructure. In essence, carrying capacity is a guest attendance level that can be serviced by the resort while operations remain optimally functional. As such, it is the distribution of the carrying capacity which is utilized to determine guest service capacities and space requirements for skier services at base area portals and on-mountain facilities. The carrying capacity should be distributed between each guest service facility location according to the number of guests that would be utilizing the lifts and terrain associated with each facility.

In addition to distributing the carrying capacity amongst the base area and on-mountain facilities, guest service capacity needs and the resulting spatial recommendations are determined through a process of reviewing and analyzing the current operations to determine specific guest service requirements that are unique to the resort. As described earlier, under the current operating configuration, the majority of resort guests enter the ski area through the main Alyeska base area. However, current guest patterns and future plans for Alyeska suggest that a higher proportion of guests will use the Hotel Alyeska portal to access the mountain in the future. Accordingly, space use recommendations need to accommodate this transition of guest needs, from the Alyeska base area to the Hotel Alyeska base area.

Based upon a carrying capacity of 3,650 skiers and the unique operational factors described above, Table 4-2 below compares the current space use allocations of the visitor service functions to industry standards for a resort of similar market orientation and regional context as Alyeska. Square foot figures contained in this table are calculated to illustrate how the ski area compares to industry averages, and should not be considered absolute requirements.

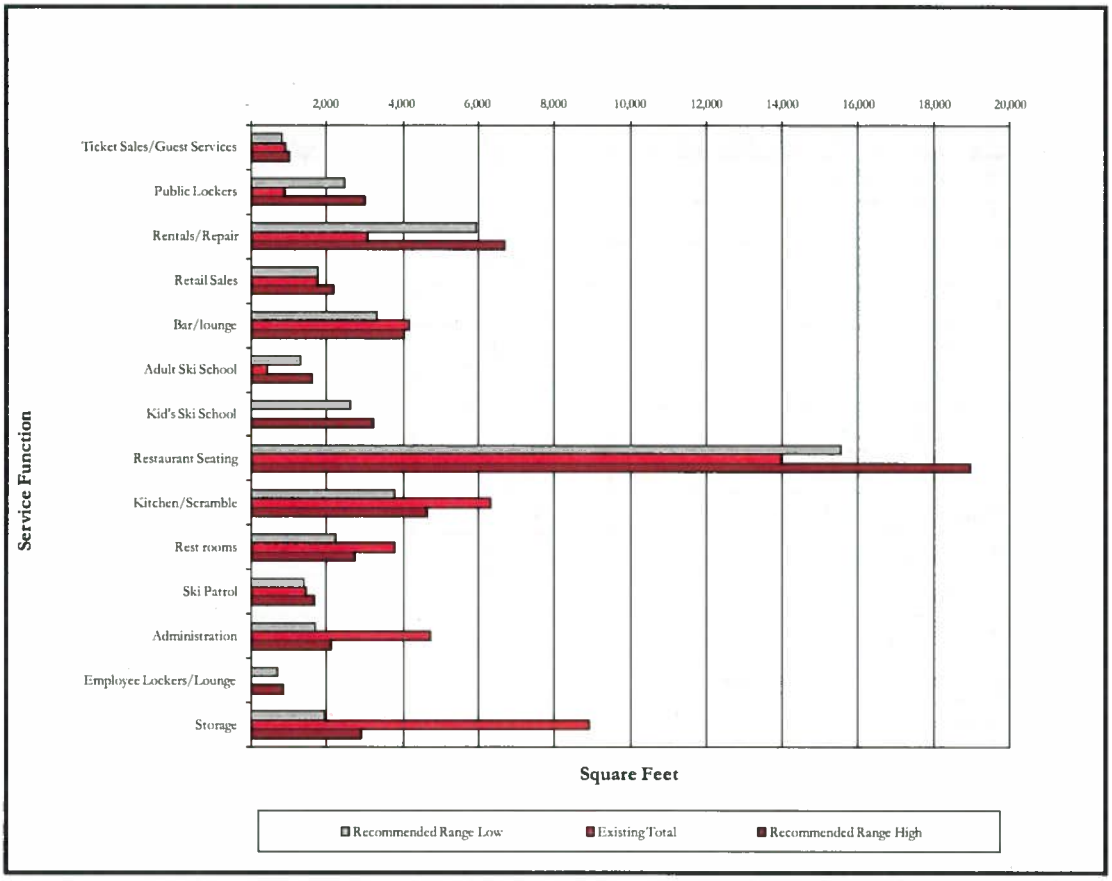
Service functions include:

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

Table 4-2:
Industry Average Space Use
Resort Total – Existing Conditions

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	901	820	1,000
Public Lockers	876	2,460	3,010
Rentals/Repair	3,642	5,940	6,683
Retail Sales	1,781	1,770	2,170
Bar/lounge	4,170	3,330	4,060
Adult Ski School	396	1,310	1,600
Kid's Ski School	-	2,630	3,210
Restaurant Seating	13,997	15,530	18,970
Kitchen/Scramble	6,317	3,800	4,640
Restrooms	3,793	2,240	2,740
Ski Patrol	1,459	1,380	1,680
Administration	4,727	1,720	2,110
Employee Lockers/Lounge	-	690	840
Storage	2,252	1,960	2,900
TOTAL SQUARE FEET	**44,311**	**45,580**	**55,613**

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



As shown in the above tables, Alyeska has surplus space in certain areas and shortages in others. From a resort wide perspective, Alyeska has significant deficits in space for lockers, rental, ski school, and food services which are all revenue-generating functions related to guest services.

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

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

Alyeska Base Area

The Alyeska base area facilities provide guest services in a series of buildings: the Day Lodge, the Aid Station, and Sitzmark Bar. A complete inventory of existing guest services by building can be found in Appendix A, Table 7.

Table 4-3:
Industry Average Space Use
Alyeska Base Area – Existing Conditions

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	532	660	800
Public Lockers	576	1,970	2,410
Rentals/Repair	2,087	4,670	5,260
Retail Sales	216	1,380	1,690
Bar/lounge	1,300	2,070	2,530
Adult Ski School	396	1,050	1,280
Kid's Ski School	-	2,100	2,570
Restaurant Seating	8,397	8,410	10,280
Kitchen/Scramble	3,552	2,060	2,510
Restrooms	1,521	1,210	1,480
Ski Patrol	753	750	910
Administration	2,802	1,380	1,690
Employee Lockers/Lounge	-	550	670
Storage	1,870	1,270	1,870
TOTAL SQUARE FEET	**24,002**	**29,530**	**35,950**

As shown in the table above, the Alyeska base area facilities fall below the low end of the recommended range in several categories. There are significant deficits of space in lockers, rentals, retail, bar/lounge, ski school, and employee space. These deficits directly impact the guest experience, primarily for ski school guests as they are attempting to learn a new sport. The amount of space for restaurant seating, rest rooms, and ski patrol/first aid is well balanced with the skier capacity allocated to the Alyeska base area. However, the first aid room is inadequate for advanced medical treatment. There is significant surplus space for administration, indicating that other uses may be appropriate for some of those spaces.

Hotel Alyeska

Hotel Alyeska provides guest services on the Hotel second floor and at the Aurora Bar.

Table 4-4:
Industry Average Space Use
Hotel Alyeska – Existing Conditions

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	369	160	200
Public Lockers	300	490	600
Rentals/Repair	1,440	1,170	1,310
Retail Sales	1,450	340	420
Bar/lounge	1,572	520	630
Adult Ski School	-	260	320
Kid's Ski School	-	530	640
Restaurant Seating	800	2,700	3,290
Kitchen/Scramble	260	660	810
Restrooms	1,260	390	480
Ski Patrol	-	240	290
Administration	1,925	340	420
Employee Lockers/Lounge	-	140	170
Storage	-	360	530
TOTAL SQUARE FEET	**9,376**	**8,300**	**10,110**

Areas within the Hotel that are specifically allocated to skier use include ticket sales/guest services, public lockers, ski rentals, bar/lounge (Aurora Bar is shared-use with Hotel guests) and food service at the Tramway Café. The amount of space for ticket sales and guest services is well balanced with the level of skier use at the Hotel. While there appears that there is adequate space for rentals, the current operation and spatial layout is not optimal and the Hotel rental center is frequently overburdened on busy days. Three hundred square feet of public locker space for skiers was added to the Hotel near the Tramway Café and skier rest rooms during the summer of 2008. No ski school or ski patrol space is available; it would be beneficial to have these services available at the Hotel. There appears to be adequate bar/lounge and rest room space at the Hotel to accommodate skiers and hotel guests alike, but the Tramway Café is undersized to accommodate lunchtime traffic at the Hotel.

Glacier Terminal

Skier services available at the Glacier Terminal building include the Seven Glaciers restaurant/bar, Glacier Express restaurant, the on-mountain Demo center, and the Roundhouse ski patrol station and Museum.

Table 4-5:
Industry Average Space Use
Glacier Terminal – Existing Conditions

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	-	-	-
Public Lockers	-	-	-
Rentals/Repair	115	100	113
Retail Sales	115	50	60
Bar/lounge	1,298	740	900
Adult Ski School	-	-	-
Kid's Ski School	-	-	-
Restaurant Seating	4,800	4,420	5,400
Kitchen/Scramble	2,505	1,080	1,320
Restrooms	1,012	640	780
Ski Patrol	706	390	480
Administration	-	-	-
Employee Lockers/Lounge	-	-	-
Storage	382	330	500
TOTAL SQUARE FEET	**10,933**	**7,750**	**9,553**

This analysis of space use indicates that there is a reasonably good balance of skier services space at the Glacier Terminal to accommodate current skier demands on the facility. The sit-down dining area in Seven Glaciers is not open to skiers during the ski day so only the bar/lounge space has been included in the restaurant seating total. Despite the current balance, it is projected that if additional skier food service facilities were offered at the Glacier Terminal, the additional seats would help to relieve congestion elsewhere at the resort. It may be beneficial to configure the Seven Glaciers restaurant such that it could be set up for some combination of casual and fine dining during the day that would be available to the skiing public.

3. Food Service Seating

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

- Alyeska Base Area – Day Lodge Café, Sitzmark Restaurant and Bar; also the Bake Shop and Jack Sprat's, facilities that are not operated by Alyeska Resort but are available to skiers
- Hotel Alyeska – Tramway Café, Aurora Bar and Grill
- Glacier Terminal – Seven Glaciers restaurant and bar, Glacier Express

Table 4-6:
Existing Seating Inventory

Facility	Restaurant Seats	Bar Seats
Alyeska Base Area		
Day Lodge Café	300	
Sitzmark Restaurant and Bar	134	66
Bake Shop/Jack Sprat's	100	
Total	*534*	*66*
Hotel Alyeska*		
Tramway Café	50	
Aurora Bar and Grill		100
Total	*50*	*100*
Glacier Terminal		
Seven Glaciers(lunch only)		70
Glacier Express	204	
Total	*204*	*70*
Grand Total	**788**	**236**

* Represents the number of seats that are used by skiers on a regular basis. Does not include seats in the banquet area.

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

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

Table 4-7:
Recommended Restaurant Seating

	Alyeska Base Area	Hotel Alyeska	Glacier Terminal	Total Resort
Lunchtime Capacity*	2,077	666	1,091	3,833
Average Seat Turnover	3	3	3	3
Existing Seats	600	150	274	1,024
Required Seats	692	222	364	1,278
Difference	-92	-72	-90	-254
Existing seating capacity	1,800	450	822	3,072

* "other guests" include non-skiing guests - an additional 5 percent of Alyeska's carrying capacity

As shown in the table above, there is a deficit of indoor seating capacity at all locations. It is important to note that, while the Alyeska base area appears to have adequate restaurant seating *space*, there are not a sufficient number of food service *seats* in the area to accommodate skier demand.

Seating and restaurant space recommendations are directly related to the lunchtime capacity. The lunchtime capacity is determined by the distribution of each lift area's carrying capacity. It is assumed that skiers will prefer to dine at the facility closest to the area where they are skiing. To allow for this convenience, it is important to provide restaurant seating to accommodate the lunchtime capacity requirement of the area.

F. Parking Capacity

Parking for Alyeska day skiers is located in the Alyeska base area and at overflow parking lots located near Hotel Alyeska. A significant number of winter guests staying at Hotel Alyeska are skiers, so Hotel parking has also been included in the total parking capacity of the resort.

Based upon historical car-counts, the Alyeska base area lots can accommodate an average of about 1,000 cars. The overflow parking lots near the Hotel can hold about 800 cars. The paved Hotel parking lots have space for about 145 cars, and it is estimated that about 100 of those cars can be attributed to skiers staying in the Hotel. In total, Alyeska has approximately 1,900 parking spaces that are available to skiers and ski area employees.

Several vehicle occupancy counts have been performed at Alyeska over the years. The results of the occupancy counts confirm that average car occupancy at Alyeska is 2.2 people per car, a ratio that is substantially lower than the national average of 2.5-2.7 people per car.

The table below indicates that Alyeska's total parking needs, including day skiers, Hotel Alyeska guests who are skiers, and employees, is 1,625 spaces, compared with the 1,900 parking spaces that are currently available to those user groups.

Table 4-8:
Recommended Parking

	Multiplier	Total
Carrying capacity + other guests*	1.05	3,830 guests
Percent of carrying capacity + other guests that are day skiers	90%	3,450 guests
Guests arriving by car	95%	3,280 guests
Required parking spaces (2.2 guests per car)	2.20	1,490 cars
Guests arriving by bus/shuttle/other	5%	170 guests
Number of employees requiring parking (5% of carrying capacity)	5%	180 employees
Required employee parking (1.2 employees per car)	1.2	150 cars
Total required spaces		1,640 cars
Existing parking spaces		1,900 cars
Surplus/Deficit		+260 cars

* "other guests" include non-skiing guests - an additional 5% of Alyeska's carrying capacity

In summary, when reducing the 1,900 available parking spaces by 150 to account for employee parking, the 1,750 remaining spaces can accommodate a total of 3,850 skiers at 2.2 people per car. Adding in the estimated 170 people who arrive daily by bus, shuttle, or other means indicates that Alyeska's current parking and transportation systems can deliver a maximum of 4,020 guests per day.

It is important to point out that the overflow lots are somewhat unpopular due to their distance from the ski lifts, and therefore are underutilized. Reducing the available parking spaces by the 800 overflow spaces reduces Alyeska's overall parking capacity to about 2,300 guests, a number that is substantially lower than the Resort's carrying capacity of 3,650. Accordingly, it would be beneficial for Alyeska to provide additional parking spaces closer to the ski lift base terminals, and this will be addressed in the upgrading plan.

G. Challenge Alaska Skiing Program

The Challenge Alaska Adaptive Ski Program has been operating at Alyeska Resort since 1980. The program provides ski lessons and race training for persons with disabilities, serving approximately 1,400 students each season. The program utilizes both professional ski school staff and many volunteers. The program also sponsors the Alaskan Disabled Ski Team which competes in national competitions each year. Alyeska Resort provides general financial support to Challenge Alaska, which in 1995 constructed a new building, on land leased from the Resort, from which to operate. The new building is located between Chair 3 and the vehicle maintenance facility.

Currently, most instruction and training for disabled skiers are conducted on the terrain served by chairs 3 and 7, which is generally suitable to Challenge Alaska's needs. More advanced disabled skiers enjoy the intermediate terrain served by Chair 6.

H. NORDIC SKIING

At the present time, there is no empirical data of Nordic use in Glacier Valley. However, in view of the large membership of the Nordic Ski Club of Anchorage, Nordic skiing interest in the local and regional area is substantial. Most Nordic skiing enthusiasts pursue the sport in Glacier Valley under natural conditions. However, Alyeska Resort works with the Girdwood Trails Committee in grooming a trail loop in the Moose Meadows area and adjacent meadows and trails, providing relatively flat track skiing. The development of an expanded Nordic multi use trail network has been addressed in the *Alyeska Area Master Plan* and will be discussed in the upgrade section of this document.

I. ALTERNATE AND NON-WINTER ACTIVITIES

While winter recreation in the Girdwood Valley is dominated by alpine and Nordic skiing, snowmobiling, dog-sledding, heli-skiing, and snowcat skiing are becoming popular activities. Chugach Powder Guides (CPG) operates the local heli-skiing/snowcat skiing operation, and Alyeska has provided space in Hotel Alyeska for the CPG sales desk and meeting area. The CPG snowcat pick-up is adjacent to the base Tram terminal. The CPG heli-ski operation flies out of the Girdwood Airport. On no-fly days, or when snow conditions do not permit back-country skiing, CPG guests have access to the ski facilities at Alyeska. Additionally, two snowmobile outfitters operate guided tours on near-by terrain. This is available to guests through the resorts concierge desk at the Hotel Alyeska.

Other winter visitors frequent Portage Glacier, enjoy fine dining at the Seven Glaciers restaurant or take pleasure in the snow covered grandeur of the Chugach Mountain Range.

Summer recreation in the Girdwood area is dominated by sightseeing and wildlife viewing as evidenced by the 600,000+ people who visit the Portage Glacier during the summer months. Other summer recreation activities regularly pursued in the valley include Tram rides, fishing, "gold panning", mountain bike riding, hiking, berry picking, para-gliding, rafting, glacier dog sled rides, glacier snowmobile rides and horse-drawn carriage rides.

Trail systems have been maintained in the Girdwood Valley area since the construction of the Iditarod Trail at the turn of the century, which ran along the Turnagain Arm through the Girdwood community and crossed into the Eagle River drainage at Crow Pass. Today, a number of trails serve the vicinity and are utilized by hikers, bicyclists, and cross-country skiers. While the California Creek,

Wagon, Virgin Creek and Winner Creek trails follow well established historic routes, others, including Glacier Creek and Beaver Pond trails and the Alyeska Basin footpaths, are more conceptual and/or intermittent and require significant further definition and development. Key existing and planned trails in the area are briefly described as follows:

- Alyeska Highway Trail: Constructed during the summers of 1982, 1983 and 1990, this lighted, paved and non-motorized trail progresses along the west and north side of Alyeska Highway from the Seward Highway to the Moose Meadows Greenbelt Trail along Arlberg Avenue. The path provides safe and separated routing for pedestrians and bicyclists that travel along the highway.

- Glacier Creek Trail: Intended for non-vehicular use, this trail progresses along the west bank of Glacier Creek from the railroad at the Old Girdwood Townsite to the Girdwood Elementary school and continues upstream until it reaches the Four Corners area.

- California Creek Trail: This trail extends the length of California Creek and provides pedestrian access to the elementary school, the Forest Fair Community Park, and the New Girdwood Townsite.

- Beaver Pond Trail: The trail skirts the western edge of the Girdwood valley, running north from the Seward Highway to the California Creek Trail.

- Virgin Creek Trail: Part of the original Iditarod Trail, this trail extends from Alyeska Basin Subdivision to the Alaska Railroad. This trail accesses the Virgin Creek stream corridor, Wagon Trail, Alyeska Basin Trail system and the Glacier Creek Trail.

- Wagon Trail: Extending north from the southeast tip of the Girdwood valley, this trail follows the historic wagon trail along the eastern mountain face, passing through hemlock/spruce coastal rainforest until connecting with Virgin Creek in the Alyeska Basin Subdivision.

- Alyeska Basin Subdivision Trails: These are a series of intermittent paths located on existing park reserves throughout Alyeska Basin and provide access to other major trails.

- Winner Creek Trail: This trail is the most widely recognized and used trail in the Girdwood Valley. The trail extends from the end of Crystal Road near the vehicle maintenance facility to Winner Creek valley and can also be used to connect with the Crow Creek road by following Winner Creek and using the popular hand tram. Generally, most access is through the trail head by the Alyeska Tram.

The trail network at Alyeska presently consists of 9.8 miles of hiking and biking trails on and around the ski area:

Table 4-9:
Hiking and Biking Trails at Alyeska

Trail	Start Point	End Point	Distance
Mountain Run	Hotel Alyeska	Round House	1.96 miles/3.16 km
North Face Trail	Hotel Alyeska	Round House	2.16 miles/3.49 km
Blueberry Hill	Hotel Alyeska	Race Trail	0.8 miles/1.29 km
Bear Cub Climb	Hotel Alyeska	Mid Terminal Chair 7	0.4 miles/619 meters
Blueberry Pancake	Blueberry Work Road	Bear Cub Trail	0.6 miles/945 meters
Christmas in July	Top of Chair 7	Challenge Alaska	0.33 miles/534 meters
Tanaka/Bowl Route	Alyeska Day Lodge	Round House	2.04 miles/3.29 km
Race Trail	Alyeska Day Lodge	Round House	1.47 miles/2.37 km
		TOTAL	**9.76 miles/15.70 km**

J. Ski Area Operations

1. Ski Patrol/First Aid

There are currently three ski patrol/first aid facilities at Alyeska: The Aid Station in the Alyeska base area, the Roundhouse patrol facility, and the Top of Chair 2 patrol duty station.

The Aid Station building, located near the base terminal of Chair 4, is a three-level, 2,658 square-foot structure which primarily serves as space for ski patrol/first aid and avalanche control/snow safety. The basement level consists of volunteer patrol space, ski and equipment storage, record storage, and snow safety administration space (226 square feet), which presently meets avalanche gun breach storage and maintenance needs. The first floor consists of radio dispatch, patient care and first aid space (753 square feet). The second floor consists of the ski patrol offices (430 square feet) and locker facilities. Single restrooms are provided on the first and second floors. Future patrol/first aid needs and snow safety administration needs will be discussed in the upgrade program.

Patrol/first aid space in the Roundhouse (420 square feet) comprises communications and dispatch, seating, evacuation gear, avalanche rescue gear storage, lockers and other storage space. The Roundhouse patrol facility is manned at all times when the ski area is operating. Upon completion of each operating day, personnel for "sweep" are dispatched from the Roundhouse to cover the highest open lift.

The Top of Chair 2 duty station is a small (est. 200 square feet) facility that is manned at all times when Chair 6 is operating. This facility provides direct patrol access to the upper Bowl and upper

North Face terrain, including Christmas and New Years chutes. Space in the building is allocated to seating, evacuation gear and avalanche rescue gear storage, and other storage space.

2. Snowmaking Coverage

The existing Alyeska snowmaking system covers approximately 113 acres, as illustrated on Figure 4.3.

During the summer of 2007, Alyeska upgraded its snowmaking system by:

- Adding a fourth pump in the primary pump station near the base of Chair 7.
- Adding a 3rd pump at the Creek pump house along with 3 shallow wells to augment water resources.
- Constructing a booster pump station between the top terminal of Chair 4 and the bottom terminal of Chair 6.
- Installing two 1,850 cfm air compressors.
- Installing snowmaking pipe and hydrants up Summer Road, Ego Flats, The Weir, and Main Street to the top of the Tram and Chair 1.
- Installing snowmaking pipe and hydrants on the lower half of Autobahn.

The updated snowmaking system continues to draw water from the pump station on Moose Creek, at a maximum rate of 2,000 gallons per minute. The new pumping system has adequate power to provide a minimum pressure of 200 psi to all hydrants on the mountain.

These recent upgrades of Alyeska's snowmaking system, combined with a number of improvements implemented in the 1990's, allow the Resort to make snow quickly and efficiently on areas that typically do not receive adequate or timely natural snow. In fact, when upper mountain snow is insufficient for skiing, the lower mountain snowmaking system provides excellent early skiing on chairs 3, 4, 7, and Tanaka, and the upper system allows earlier opening of the Tram.

The snowmaking system has a major positive effect on the Alyeska operation, assuring that adequate snow coverage is present on the lower ski trails, especially during the early part of the season. For example, snowmaking enabled Alyeska to open for skiing on October 24, 1992. This was the earliest opening ever on the lower mountain. While providing for early season skiing, snowmaking also extends the spring season by creating a good base for subsequent snow to build upon. In summary,

snowmaking has allowed the ski area to be open more days, thereby achieving greater continuity of operation and a resultant increase in ski area utilization.

Currently, limiting factors for Alyeska's snowmaking plant is on-site water storage. The water constraint can limit the ski area's ability to utilize the system to its maximum potential and efficiency when weather conditions are ideal. The upgrading plan will describe proposals for adding a water storage reservoir that would augment the Moose Creek supply.

3. Grooming Operations

Over the past several years, Alyeska Resort has dramatically expanded and upgraded its grooming vehicle fleet. Alyeska presently operates a fleet of seven Bombardier grooming vehicles. Two of the vehicles are used for purposes other than standard grooming (e.g., snowmaking operations and terrain park maintenance) and one vehicle is not reliable for extensive grooming due to its age. All of the grooming vehicles are equipped with all-way blades as well as flex tiller attachments. Two of these vehicles include winch equipment making them suitable for grooming steep terrain.

For grooming purposes, the ski terrain at Alyeska is divided into four areas or sectors as identified below:

- Upper Mountain/Bowl
- Lower Mountain/Bowl/Tanaka
- Upper Mountain/Race Trail
- Lower Mountain/Base Area/Lift 3/Lift 7

Alyeska provides regular grooming on Autobahn, Gunbarrel and Jim's Branch to facilitate egress from the North Face terrain. The Resort is continually looking for opportunities to expand grooming operations to improve accessibility and increase groomed terrain on the North Face.

Approximately 180 acres comprise Alyeska's groomed terrain. On average, roughly 135 acres or 53 percent of the formal trail system is groomed on a daily basis. As Monday and Tuesday are typically slow business days, a smaller percentage of grooming normally takes place for these days. During weekends, holidays and other high volume days, the acreage groomed usually exceeds the average. While the majority of the ski trails are groomed daily and remain relatively smooth, some trails are packed shortly following a fresh storm and left for skiers to bump up. Once moguls are developed to the point that they lose their roundness and become cut off and difficult to ski, the trail is typically re-groomed.

Frequently, each grooming sector will exhibit unique snow conditions, requiring different equipment or switching from compactor bars to tillers. Compactor bars are primarily used for new fallen snow exceeding a depth of three inches, cold and dry soft pack conditions, or spring slush conditions. Tiller attachments are used primarily for hard old snow, frozen crusts, and hard pack conditions. Table 4-10 delineates Alyeska's grooming vehicles and associated equipment.

Table 4-10:
Existing Snowcat Fleet

Quantity	Year	Description
1	2008	Bombardier BR350 with all-way blade and flex tiller
2	2007	Bombardier BR350 with all-way blade and flex tiller
1	2007	Bombardier BR350 with Sherpa winch, all-way blade and flex tiller
1	2005	Bombardier BR350 with all-way blade and flex tiller
1	2002	Bombardier BR275 with all-way blade and flex tiller
1	2001	Bombardier MP Plus with tower winch, all-way blade, and flex tiller

As shown in the following analysis, Alyeska's grooming fleet adequately meets industry standards.

Total trail acreage groomed on a regular basis:	135
Ideal Acreage/Vehicle Ratio:	30/1
Vehicles required:	5
Vehicles available:	7

It is common in ski area operations to allow for a rotation of grooming vehicles to accommodate regularly scheduled maintenance without interrupting the grooming program. Alyeska's current grooming fleet includes two more vehicles than are typically necessary, which allows for the rotation of machines throughout the year.

4. Maintenance Facility

The current maintenance facility for the resort is approximately 5,400 square feet in size and is located on Alyeska Resort property north of the Sitzmark, adjacent to the Alyeska base area. The building and yard area are screened by vegetation, which conceal the site from guests and skiers. Dry road access to the maintenance facility is provided by a good all-weather road that begins adjacent to the Challenge Alyeska building. The location of the current facility, adjacent to the Christmas Trail and Chair 3, provides good over-the-snow access for grooming and on-mountain maintenance equipment.

The current maintenance facility was originally constructed as a 4,000 square-foot building during the summer of 1986. An additional mezzanine level, approximately 800 square feet in size, was added to the buildings in 1988. During the summer of 1990 a 600 square-foot addition was built in

order to accommodate more storage for parts. The facility is comprised of four vehicle work bays, tool room, machine shop, parts and equipment storage, oil room, welding space, crew lockers and restroom. The mezzanine level of the building is utilized as office space for lift maintenance, vehicle maintenance, grooming, and parking and grounds. The existing maintenance yard is approximately 14,000 square feet to accommodate equipment storage and vehicle parking. While the current facility presently meets Alyeska's vehicle maintenance requirements, additional space is needed for other mountain maintenance departments.

An additional 1,330 square feet is committed to other maintenance functions for lifts, buildings, and utilities throughout the Alyeska base area. This includes the old "ticket chalet" adjacent to the base of Chair 1, which is currently utilized as a crew room for lift operations. This 1,100 square-foot structure comprises lockers, equipment storage and repair space.

5. Administration

Mountain Operations

The main ski area mountain operations building comprises 2,390 square feet and is located on the south side of Alyeska Creek in the Alyeska base area. Approximately 1,152 square feet of this structure have been allocated to storage.

Resort Management and Development Offices

During the summer of 2007 a new building was constructed for resort management and planning departments. This building is approximately 3,128 square feet in size and is located north of Alyeska Creek, adjacent to the Sitzmark, on Resort property. This building houses the planning, development, and management departments of the Resort.

Since Alyeska is a year-round resort, additional administrative space is required for the following departments: hotel management, resort marketing, food services and accounting. Space for these departments is currently located at the Hotel Alyeska.

6. Utilities

Base Area Domestic Water System

In November of 1990, Seibu Alaska completed construction of a $3 million water system improvement project. The domestic water system is comprised of two wells (one 1,000 gpm pump and one 600 gpm pump), chlorinators, a standby engine, a reservoir tank (1,000,000 gallons) and water mains that connect the system to the Hotel site and the Alyeska Utility Incorporated (AUI) system.

The water system was designed to accommodate the Hotel and to replace obsolete elements of the AUI system that previously supplied water to AUI customers, as well as Alyeska Resort base area

facilities. Fire flow demands were a primary consideration in the system design. The components of the old water system, including two wells and pumps with 300 and 175 gpm capacities, have been transferred to the Anchorage Water and Wastewater Utility. The current well house is located on Alaska Department of Transportation property near the Girdwood Airport. The 1,000,000 gallon reservoir tank is located on Alyeska property adjacent to the existing maintenance facility.

Seibu Alaska completed the process of formally transferring ownership of the new water system to the Anchorage Water and Wastewater Utility in March of 1991. The AUI was dissolved at that time.

Alyeska Tram Upper Terminal Domestic Water System

With construction of the Alyeska Tram top terminal and on-mountain guest facilities, a new water system was incorporated in order to provide year-round water source for the facility. Water for the facility is provided by a well on the uphill side of the Chair 6 summer road as it crosses Trapline Trail. This well supplies 35 gpm to a 30,000 gallon cistern at the facility. The Tram is also equipped with a 1,000 gallon water tank fitted to the bottom of cabin #2 which can be used to augment production from the well during peak periods.

Sewer

During the summer of 2007 a new sewer line was installed connecting the on-mountain guest facilities located at the Glacier Terminal with the existing sewer system in the base area. The pipeline is approximately 9,500 ft in length and follows an alignment similar to the mountain access road, as illustrated in Figure 4.4. Sewage from the Glacier Terminal facilities travels to a temporary underground holding tank where a newly installed grinder pump feeds the sewage from the tank to the base area via the sewer line.

The base facilities at Alyeska Resort are connected to the Municipality of Anchorage sewer system for Girdwood. The facility was designed for a capacity of 450,000 gallons per day and is adequate to meet the current needs of the resort.

Power

Power is supplied by Chugach Electric to the bottom of the mountain and to the Hotel. From this point, the power facilities are primary metered and Alyeska has developed a distribution system to supply underground power to all facilities throughout the complex, with the exception of Chair 3. While periodic system failures require the resort to use auxiliary backup engines for operation of ski lifts, Hotel and on-mountain facilities, power outages are now less frequent. Chugach Electric is gradually upgrading the entire power system in Glacier Valley. These plans include reconductoring, new meters, adding a second transformer at the substation, and adding a second primary feeder for redundant distribution. Alyeska in the meanwhile has replaced the mountain aluminum primary conductor with new copper conductor that has a 25-30 year life expectancy. The power system

upgrade and expansion will continue at Alyeska with replacement and upgrades of lift and facilities as well as any new development.

Fuel Storage

Petroleum products are stored in bulk quantities at many locations throughout the resort. The storage sites consist of twenty-one above ground tanks, three drum storage areas and a single underground tank.

The 21 above ground storage tanks are for bulk fuels, which are stored in vertical or horizontal tanks. Of these tanks, six contain Low Pressure Gas (LPG), nine are for diesel fuel, four contain either fuel oil or diesel fuel, a single tank is for gasoline, as well as a single tank for hydraulic oil. Several of these tanks have been specially designed for the operation of ski lifts and are used during the winter for auxiliary power.

The underground storage tank located near the Day Lodge is abandoned. This tank is constructed of welded steel and is epoxy coated on the interior. With the upgrade of the Day Lodge to natural gas, this tank is no longer used.

The resort has three drum storage areas. One is an outdoor open-sided structure, another is a temporary drum storage area at the Tram, and the third is contained inside the maintenance facility. The resort typically stores a 3-month supply of drummed products, including lube oil, motor oil, hydraulic fluids, paints, solvents, anti-freeze and gear oil.

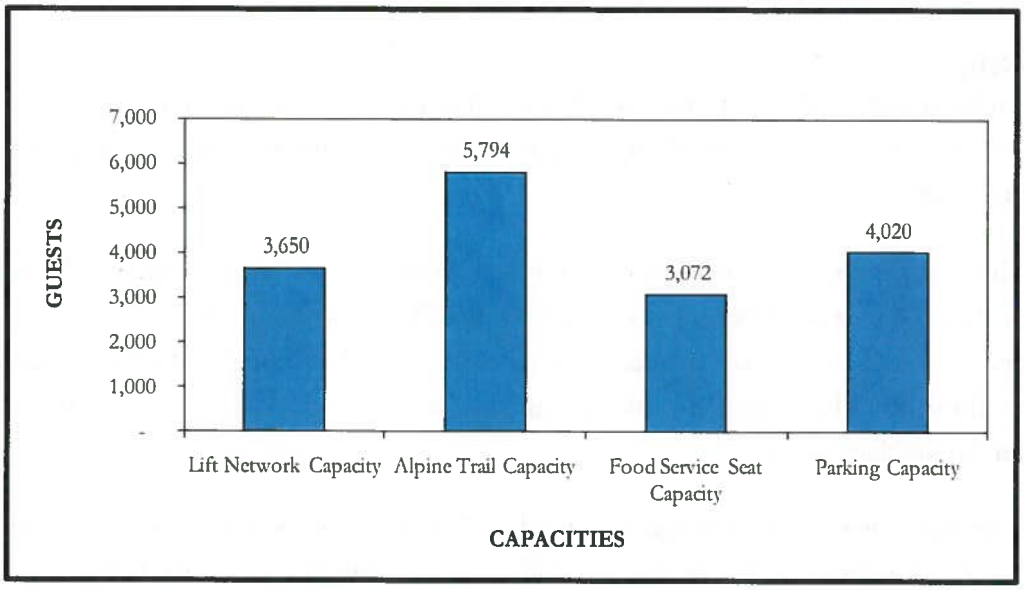
In 1994, Alyeska, in conjunction with ENSR Consulting and Engineering, implemented a spill prevention, control and countermeasure plan.

LPG and diesel fuels were used for operation of the guest facilities at the Glacier Terminal until a natural gas line was installed from the Day Lodge. A tank for heating fuel is maintained at the Terminal in case of emergency.

K. Resort Capacity Balance and Limiting Factors

The overall balance of the existing ski area is evaluated by calculating the capacities of the resort's various facilities and comparing those facilities to the Resort's carrying capacity. The above discussed capacities are shown in Chart 4-3.

Chart 4-3:
Resort Balance – Existing Conditions



As the above chart indicates, the existing alpine trail capacity (5,794 skiers) is higher than the lift network carrying capacity of 3,650. This is an indication that average skier-per-acre slope densities are relatively low and that trails are generally uncrowded. Restaurant seating capacity is lower than the carrying capacity (about 85 percent) and there is surplus parking capacity when including the overflow lots near Hotel Alyeska. In summary, the key resort operations at Alyeska are reasonably well balanced to a carrying capacity of 3,650 skiers.

A resort's comfortable carrying capacity is commonly correlated to its visitation level during the 10th busiest day throughout the season. On its historical 10th busiest day (averaged over the past 10 years) Alyeska hosts about 2,500 skiers, a visitation level that is significantly lower than its carrying capacity of 3,650 skiers. Alyeska's peak-visitation day averaged over the past 10 seasons is approximately 3,400 skiers, a number that is also lower than the Resort's calculated carrying capacity. This indicates that the current facilities are not a limiting factor to daily resort visitation. The fact that Alyeska is unable to consistently achieve daily visitation levels that are equal to the carrying capacity is caused by an inability to draw additional local skiers and national market share and is not caused by a limitation in resort facility capacities.

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 4.0
Existing Mountain Plan

LEGEND

- NOVICE TRAILS
- INTERMEDIATE TRAILS
- EXPERT TRAILS
- LIFTS
- BUILDINGS
- PRIVATE PROPERTY BOUNDARY
- ALYESKA RESORT DNR LEASE BOUNDARY
- NORDIC TRAILS
- AVALANCHE STRUCTURE
- AVALANCHE CONTROL SITE

MOUNTAIN FACILITIES

- A HOTEL ALYESKA
- B 7 GLACIERS & GLACIER EXPRESS RESTAURANTS
- C ROUND HOUSE (SKI PATROL)
- D TOP OF TWO (SKI PATROL)
- E MAINTENANCE BUILDING
- F CHALLENGE ALASKA
- G SITZMARK BAR
- H DAYLODGE
- I FIRST AID
- J RACE TRAINING CENTER
- K HALF PIPE/ TERRAIN PARK
- L DAY SKIER PARKING
- M DAY SKIER OVERFLOW PARKING

DECEMBER 2008

0 500' 1000'

Graphic Scale: 1" = 1000'

Contour Interval = 25'

North

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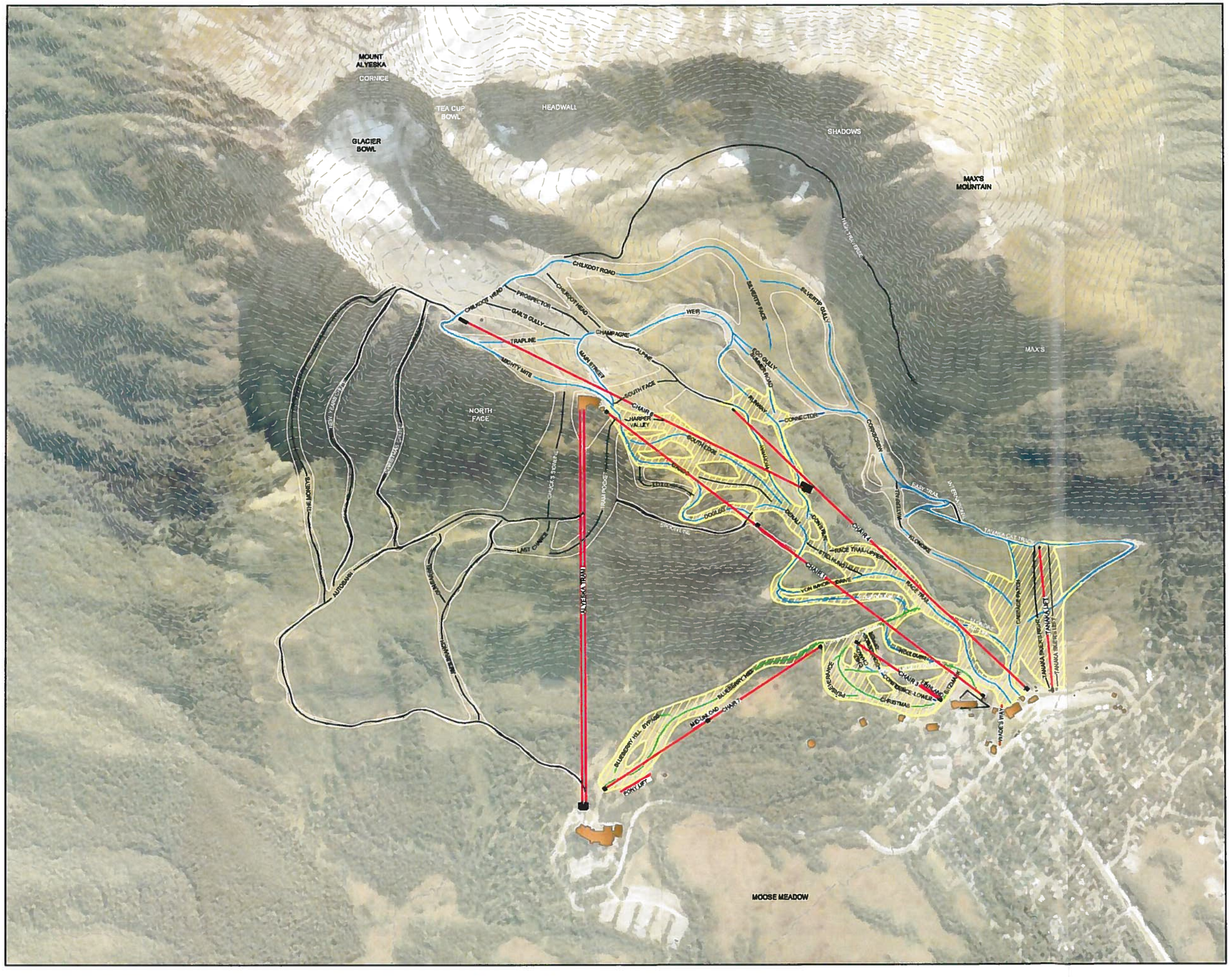

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 4.1
EXISTING NIGHT SKIING TERRAIN

LEGEND

- NOVICE TRAIL
- INTERMEDIATE TRAILS
- EXPERT TRAILS
- LIFTS
- BUILDINGS
- NIGHT SKIING AREAS

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0 500' 1000'

Graphic Scale: 1" = 1000'

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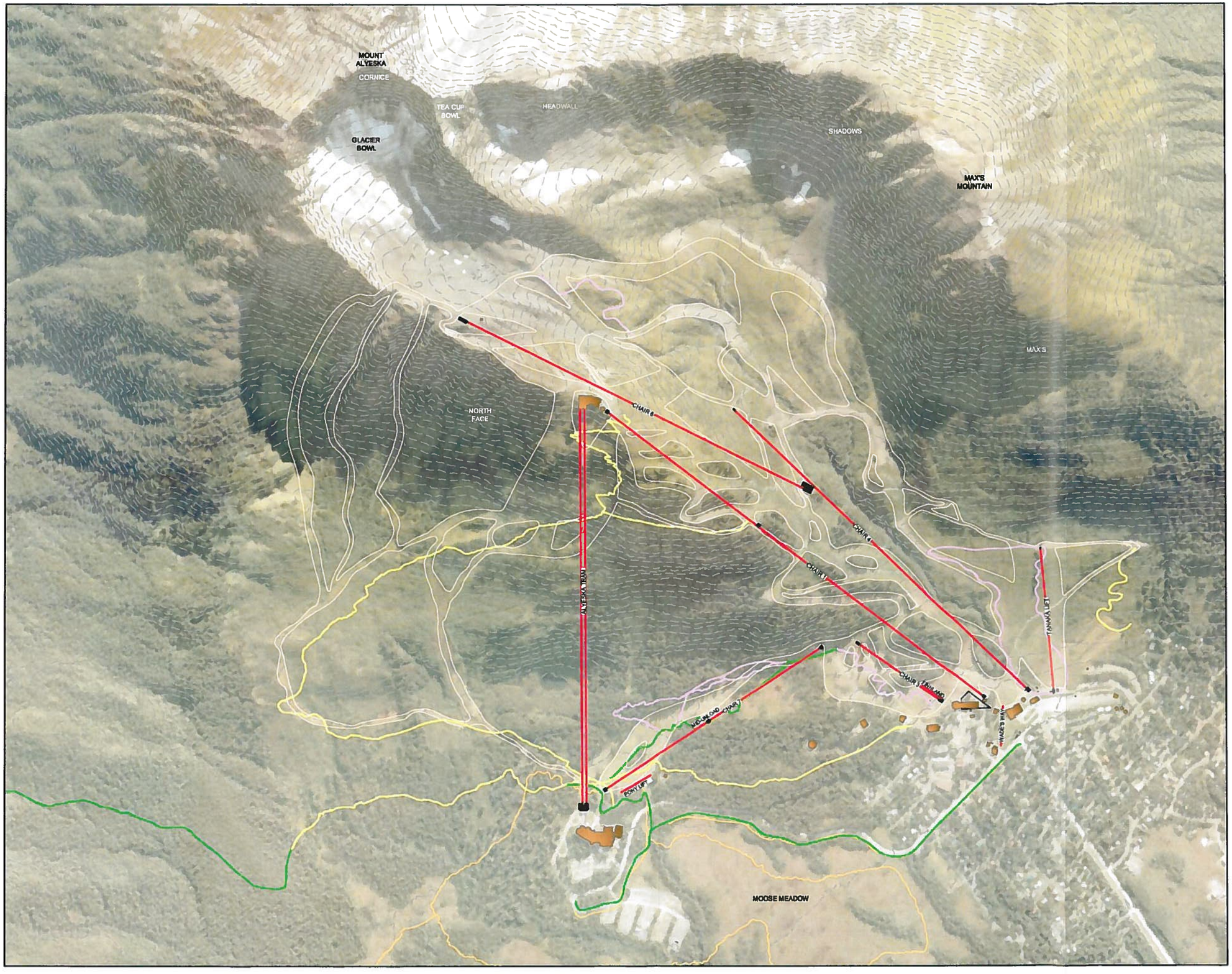

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 4.2
EXISTING ALTERNATE AND NON-WINTER ACTIVITIES

LEGEND

- HIKING & BIKING TRAILS
- HIKING TRAILS
- BIKING TRAILS
- NORDIC TRAILS
- LIFTS
- BUILDINGS

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0 500' 1000'

Graphic Scale: 1" = 1000'

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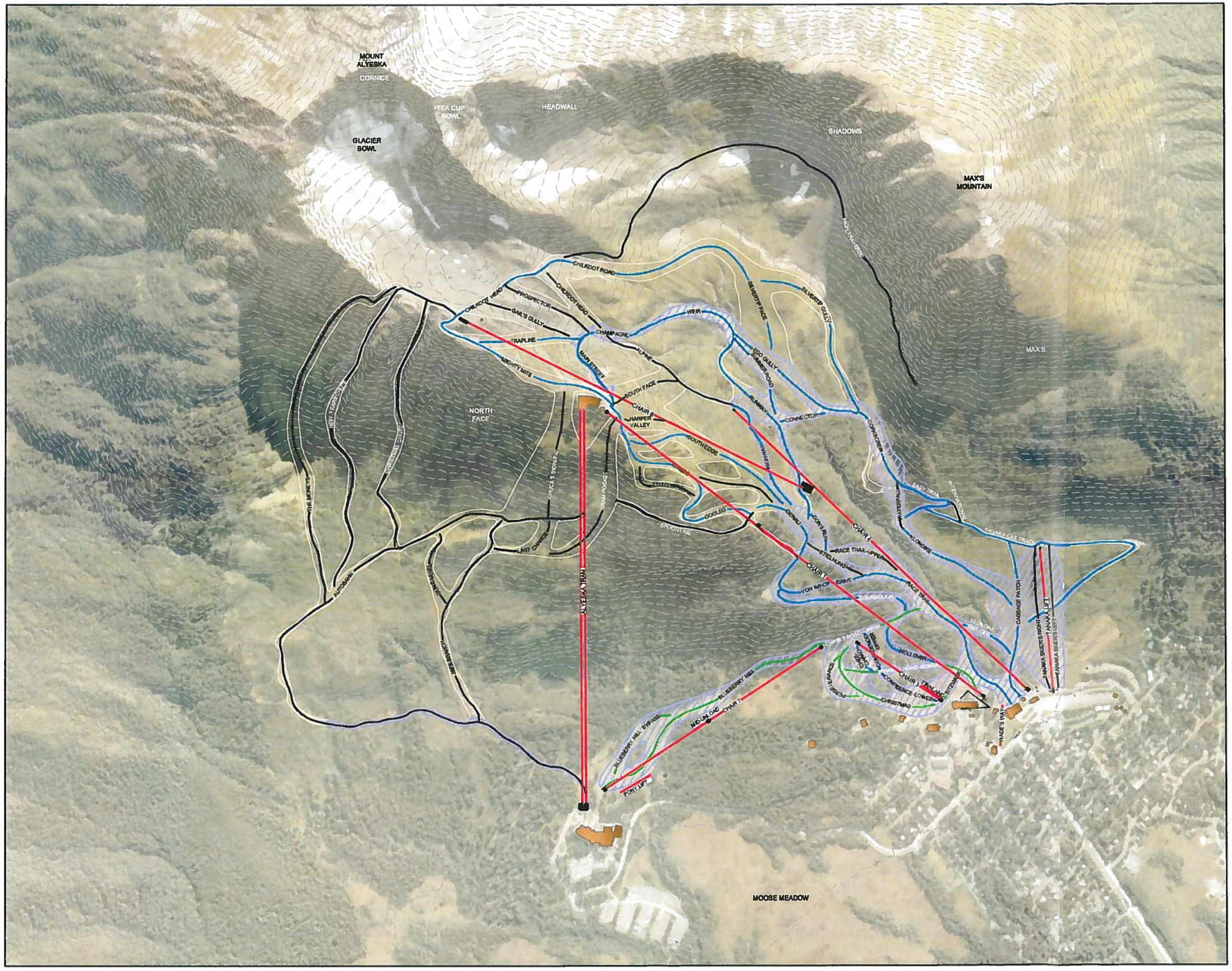

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 4.3
EXISTING SNOWMAKING COVERAGE

LEGEND

- NOVICE TRAIL
- INTERMEDIATE TRAILS
- EXPERT TRAILS
- LIFTS
- BUILDINGS
- EXISTING SNOWMAKING

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0 500' 1000'

Graphic Scale: 1" = 1000'

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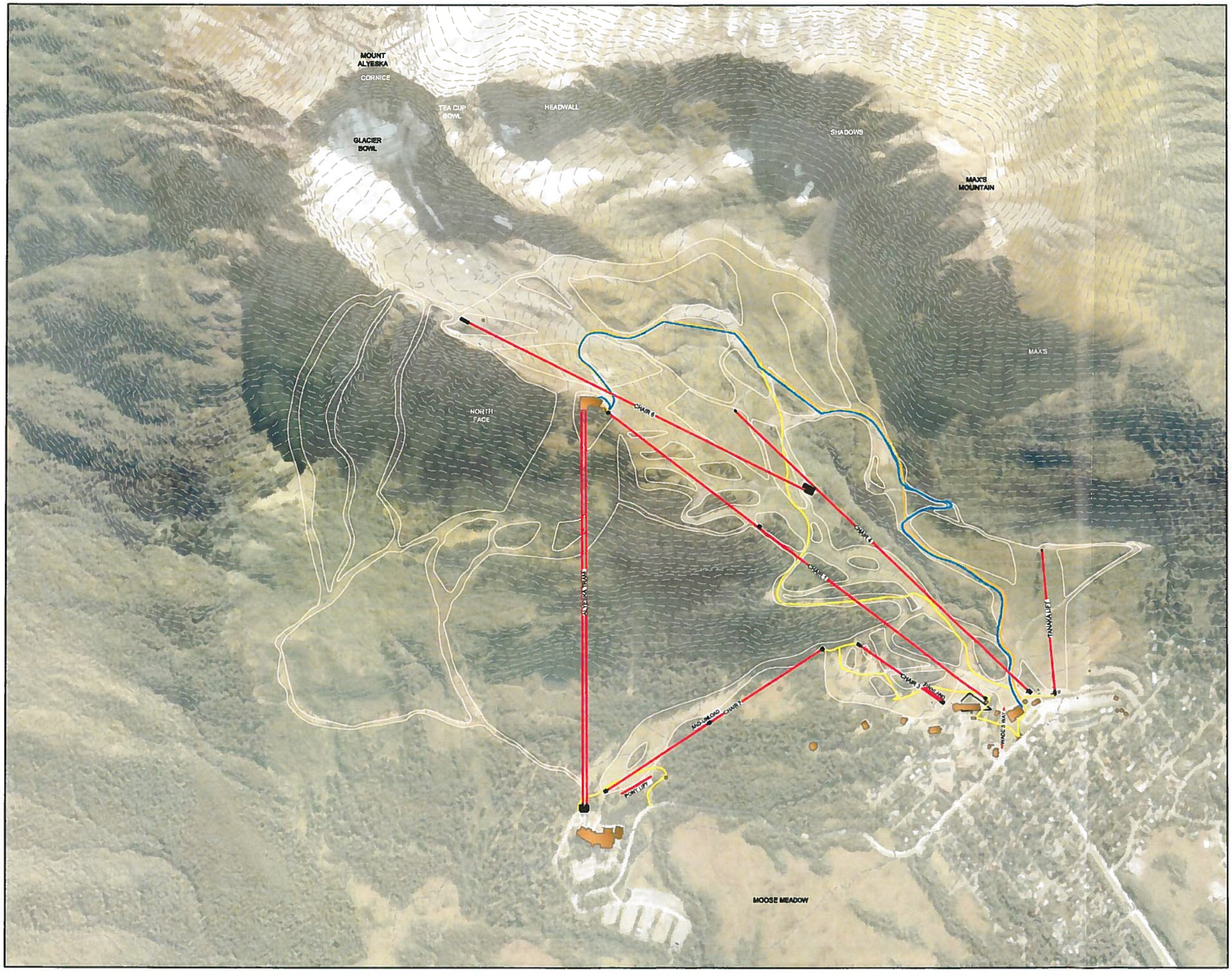

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 4.4
EXISTING UTILITIES INFRASTRUCTURE

LEGEND

- EXISTING SEWER LINE
- EXISTING POWER LINE
- EXISTING COMM / POWER/ GAS LINE
- LIFTS
- BUILDINGS

DECEMBER 2008

0 500' 1000'

Graphic Scale: 1" = 1000'

Contour Interval = 25'

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2008 Ski Area Master Plan

ALYESKA RESORT

Chapter 5: Upgrading Plan

5. PROPOSED UPGRADING PLAN

The purpose of this upgrading plan is to provide direction for the future development of the Resort which ensures a balance of facilities and variety of amenities to provide an exceptional guest experience and operational efficiencies. Alyeska presently holds a position of preeminence as the only regional destination ski resort in Alaska. This plan will allow Alyeska to remain competitive in the destination resort skier market, help retain existing guests, and attract new visitors. The upgrading plan is depicted on the Proposed Mountain Plan figure.

Alyeska is considering a series of improvements as detailed in this section. These projects include:

- Lift upgrades and installations that would improve guest comfort and increase vertical to 3,340 feet;
- Lift access to back-country style skiing terrain in the Headwall area, on Max's Mountain and in Virgin Creek;
- Trail improvements and continual enhancements to trail based recreation;
- Snowmaking improvements and other infrastructure upgrades;
- Expansion of night skiing terrain;
- Development of alternate and non-winter recreational facilities; and
- Improvements to skier and guest services facilities.

These project elements must be integrated to provide an attractive local, regional and destination ski facility and resort which would appeal to a wide range of users. A comprehensive approach to planning and development is essential in realizing these goals. Accordingly, creative steps must be taken when developing a high quality resort experience at Alyeska.

A. SUMMARY OF UPGRADING PLAN

The principal operational goal for Alyeska is to provide for continued upgrading and expansion of the Alyeska Resort facility in order to increase winter and summer utilization while enhancing the quality of the ski and resort customer experience on a year-round basis. The upgrading plan presented in this Chapter describes possible and potential projects that are driven and guided by the Resort's primary goal and operational objectives. No commitment is being made herein to actually implement any or all of such projects.

As described in Section 4.K of this Master Plan, the current carrying capacity of Alyeska's facilities is 3,650 skiers per day. However, visitation at the Resort during its average 10th busiest day (which should be approximately equal to its carrying capacity) is about 2,500 skiers per day. This low utilization of Alyeska's existing facilities represents an operational inefficiency and is caused by an inability to attract more local skiers and draw additional national market share. Alyeska's inability to increase visitation by local skiers and to increase national market penetration is caused in large part by its outdated lift network, limitations to the extent and variety of skiable terrain, and inferior guest services and a shortage of rentable beds in its base area. In combination, these conditions do not meet the heightened expectations of Alyeska's destination skier market. The proposed upgrading plan provides for a negligible increase to the Resort's carrying capacity (from 3,650 to 3,700 skiers per day), but the projects are intended to increase the attractiveness of the Resort such that it can achieve greater market penetration, and increased annual visitation (i.e., visitation during the 10th busiest day would increases from 2,500 to 3,700 skiers per day).

A fundamental component of Alyeska's upgrading plan would be the replacement and modernization of its lift system. All of the existing lifts, with the exception of Chair 7, the Tanaka Lift and the Alyeska Tramway (the Tram will receive a minor upgrade to improve its operability in windy conditions), would either be replaced or upgraded to improve skier comfort and enhance service to terrain and overall skier circulation. Two new lifts are being considered, including an aerial tramway ("Glacier Tram") accessing the Headwall ridge, and a surface lift servicing an enhanced terrain park on Tanaka Hill. With such new lifts, the total vertical rise of Alyeska would increase from 2,500 to 3,340 feet.

A number of enhancements are being or may be made to the developed trail network, including grading projects to improve skier flow and facilitate grooming operations, and a new trail segment in the Lower Bowl/Klondike area to relieve skier congestion. A significant portion of formerly hike-to terrain could become lift-served by the Glacier Tram, and nearly 500 acres of back-country terrain could become accessible from the Glacier Tram in the Virgin Creek basin. Skiable terrain would increase from about 800 acres currently to over 1,300 acres upon installation of the Glacier Tram.

Night skiing terrain would be increased by nearly 20 percent with the introduction of lighting on Corkscrew/Waterfall/Klondike. This additional night skiing terrain would open an additional route from the upper mountain to the base area.

A significant feature of Alyeska's upgrading program would be the redevelopment of the current Alyeska base area, as illustrated in detail within the *Alyeska Area Master Plan*. The new village would dramatically enhance the guest's first impression of Alyeska, and skier services in the village buildings would be sized to comfortably accommodate peak-day crowds.

Rounding out Alyeska's upgrading plan could be the establishment of a number of alternate and non-winter activities and facilities, including recreation trails, a zip-line ride, a mountain coaster, sightseeing rides on the Glacier Tram, and venues for concerts and other events. These facilities and programs would help attract Anchorage Bowl and other local residents to take day-trips to Alyeska during the summer months.

In summary, the upgrading plan would increase winter and summer utilization while enhancing the quality of the ski and resort customer experience on a year-round basis. The mountain master planning process emphasizes the importance of balancing recreational facility development and the sizes of the various skier service functions to match the carrying capacity of the mountain.

B. Alpine Facilities

1. Lifts

Alyeska's current lift network consists of an aerial tramway, six aerial chairlifts, one wire-rope beginner lift, and two beginner carpets. With the upgrading plan, some of all of the following improvements would be made (see Appendix A, Table 2 for individual lift specifications):

- Chairs 4 and 6 would be upgraded with new detachable equipment;
- Chair 3 would be lengthened from its new (2008) alignment and a loading carpet would be added;
- Chair 1 would be shortened and realigned; its top terminal would remain in approximately the same location and the bottom terminal would be relocated to Von Imhof's corner. The old Chair 4 equipment would be refurbished, modified and reinstalled at the new Chair 1 alignment;
- The Alyeska Tram would be equipped with a "roll secure" device at the tower saddle to increase the allowable wind speed of the track rope derailment limit to 50 mph;
- The new Glacier Tram would be built to access hundreds of acres of back-county style terrain; and
- Total Uphill Lift Design Capacity per Hour with the improvements would be 14,996 guests.

The existing lift network serves Alyeska's alpine terrain in a logical and relatively efficient manner. Top terminals are generally located in strategic locations, in terms of providing efficient skier circulation and good interconnection between lifts. Improvements made to Chair 3 and Chair 7 during the summer of 2008 will improve their functionality for the beginner and novice skiers they serve, and the realignment of Chair 3 will cause it to be more easily accessible from base area

facilities. Lift service in the Alyeska base area would be improved by the replacement of Chair 4 with a high-speed, detachable chairlift, and the bottom terminal of Chair 1 would be removed from the base area to create additional snow-front and skier circulation space. Improvements to Chair 6 would significantly improve service to the popular Upper Bowl terrain, and the Glacier Tram would increase Alyeska's skiable terrain by more than 60 percent.

The following is a brief discussion of possible upgrades proposed for each lift at Alyeska.

The Alyeska Tram would be retrofitted with "roll secure" equipment to increase the allowable wind operating parameters at the tower. This modification would allow the Tram to be operated on a more consistent basis during wind events.

Existing Chair 1 would be removed following the replacement of Chair 4 with a detachable chairlift (see below), and the original Chair 4 equipment would be modified and relocated to a new Chair 1 alignment. The new Chair 1 alignment would have a top terminal located in approximately the same location as the existing Chair 1 top terminal, and the new bottom terminal would be located at Von Imhof's corner. Use of the existing Chair 4 equipment would allow for a higher hourly capacity, although the lift would run at a lower rope speed because of code requirements for a quad chair. The realigned Chair 1 would still provide the same functionality for Alyeska as existing Chair 1, in terms of providing ski patrol access to Gun #2 and being the primary night skiing lift. This new alignment also eliminates the need for a mid-load station because it enables intermediate skiers to ski round-trip on the upper half of the north ridge trail network when snow or weather conditions are less favorable on the lower mountain.

The second phase of a two-phased program for upgrading Chair 3 would be implemented as part of the lift improvement plan. During the summer of 2008 Chair 3 was replaced with a fixed-grip quad chairlift. The top terminal was moved to the north of the previous terminal site in order to mitigate traffic conflicts at the top terminal unload with through-skiers on upper Chair 3 Road. The new lift has a higher hourly capacity, which should shorten lift-lines considerably, and the bottom terminal is in a location that is much easier for guests to access. In the second phase, the lift would remain in the new alignment, but the bottom terminal would be moved to a lower location, to integrate into the new base village design, and provide convenient access for guests. Also, a loading carpet would be added to Chair 3 to make loading easier for beginner skiers.

Chair 4 would be replaced with a high-speed, high-capacity detachable lift. As this lift is the primary out-of-base lift from the Alyeska base area, its upgrade would represent a very significant improvement to the guest experience. The bottom terminal location would be moved so that it is adjacent to base facilities located in the new Alyeska Village. The top terminal would be moved about 100 feet to the south to facilitate this new bottom terminal location and would avoid conflicts

with the Chair 6 bottom terminal building. On weather days when the upper mountain may be closed, this lift would remain open and would provide an improved guest experience. Additionally, the new lift would increase the utilization of the lower mountain terrain during all weather scenarios, thus better distributing skiers around the mountain on high-visitation days.

Chair 6 would be modified with new terminals and grips. The new terminals would be shorter in length than the old style and would have modern conveyor systems that are more easily maintained. The bottom terminal would be moved about 50-60 feet uphill and would be raised approximately 12 feet above the existing elevation. This relocation of the bottom terminal would provide better circulation behind the lift for through traffic from Runway to Sourdough and Von Imhof trails as well as provide more space for the maze area. The new equipment would be more reliable from both an operations and maintenance standpoint.

With the installation of the loading carpet and mid-terminal unload station in 2008, no additional improvements are proposed for Chair 7.

The avalanche deflector above the top of Tanaka Lift would likely need to be moved uphill approximately 40 feet to allow for the lift to be off-loaded at its designed capacity of 1,200 people per hour.

The new Glacier Tram would be a very important component of the upgrading plan. The tram would feature two cabins, each carrying approximately 13 passengers. As a result, the overall hourly capacity for this lift would be quite low. The reason for this is to preserve the back-country feel of the terrain in the Headwall and Max's areas that would be accessible from the Glacier Tram. As noted, this "big-mountain" terrain is very desirable to both Alyeska's expert skier guests and the competitors in the competitions held there. This tram would make that terrain lift-accessible, would increase Alyeska's vertical by 880 feet to over 3,340, and as such would greatly increase the Resort's image and standing.

2. Developed Alpine Terrain Network

The developed, or formalized, terrain network at Alyeska consists of the named, defined, lift-serviced, maintained runs at the Resort. Most of these runs are groomed on a regular basis, although some are intentionally left ungroomed. These runs represent the baseline of the terrain at any resort, as they are where the majority of guests ski, and they are usually the only place to ski during the early season, periods of poor or undesirable snow conditions, avalanche closures, and certain weather conditions. Typically, terrain off the developed network is only used by advanced and expert level skiers, during periods of fresh powder, spring corn, and other desirable snow and weather conditions. As such, the developed terrain network represents a true reflection of acreage used by the average skier on a consistent basis, as well as the terrain used by all skiers during the

aforementioned conditions. Therefore, the total acreage of the terrain and the ability level breakdown must be sufficient to accommodate the full skier capacity of the Resort. As a result, only the developed terrain network is applied to the trail acreage calculations, skier classification breakdown, trail capacity, and density formulas. If terrain outside of the developed network were included, it would have a misleading effect on all of those calculations. However, terrain outside of the developed network is very important to terrain variety and the overall quality of the guest experience, and as such is addressed in the next section.

A number of improvements are being considered to the developed terrain network at Alyeska, primarily in the form of improvements to the existing trails. Very few actual new trails are proposed, and there would be no significant clearing as most work is proposed within existing trails. There would not be significant changes to the total developed terrain acreage or the ability level distribution.

Alpine Trails Discussion

The proposed trail configuration is shown in Figure 5.0. The ski area is served by a network of approximately 68 trail segments accommodating a variety of ability levels, as depicted in Appendix A, Table 4. The trail system will account for about 263 acres of terrain.

Contrary to public perception, Alyeska currently has a large supply of intermediate ski terrain. In fact, the breakdown of available ski terrain by ability level (based on slope angle) shows a supply of intermediate terrain which exceeds normal industry standards. However, the high percentage of intermediate terrain is somewhat deceiving when it is measured qualitatively (number of trails, ability to service with a lift, consistency of fall line, uniform widths, snow/climactic conditions, etc.). As a result of topographic constraints which limit trail and ski lift development to only a portion of the available terrain, Alyeska has exhibited a shortage of good lift served intermediate ski trails. As such, the following grading projects could improve skiability, eliminate bottleneck areas, aid grooming operations and improve skier flow.

- Grading on Mighty Mite would give it more consistent grade and fall-line, and improve its skiable width, particularly during the early season.

- The knob at the top of South Edge (Zug Knoll) could be graded out, making it much easier to enter Mambo, Harper Valley, and South Edge.

- Denali could be smoothed and recontoured to remove the current dished-out situation. This would significantly increase the effective skiing width, which would relieve congestion in the middle of the trail and effectively decrease density. Grooming the full width would be possible, further enhancing these benefits.

- The upper section of and entrance to Von Imhof Drive could be graded and widened, relieving that bottleneck.

- Lower Von Imhof would be regraded, from Von's corner to the Mid 4 pump facility, to increase its width and skier capacity.

- Lower Runway could be widened and its gradient reduced to help relieve congestion created by the convergence of skiers getting off Chair 4 and skiers heading back to the bottom of Chair 6.

- The bottleneck caused by the constriction at the lower part of Corkscrew and the entrance to Waterfall could be eliminated by extensive grading in that area.

- Grading on the upper section of Autobahn, similar to the work that was completed on the lower half of the trail, would allow early season and/or low snow grooming along the entire length of the trail. This trail work, in addition to expanded snowmaking coverage on both Autobahn and Jim's Branch would allow these trails to be consistently open and skiable, even in times of low snow cover, allowing an earlier opening of the North Face.

- Grading on Christmas, Perseverance, and Sitzmark would improve the skiability of these runs and allow them to integrate into the new bottom terminal of Chair 3 as well as the new Alyeska base area plan.

- The Tanaka bypass could be realigned and graded to facilitate the establishment of a new terrain park, and the avalanche deflector at the top of Tanaka would likely need to be modified.

- The burms and valleys from Zug's Knoll down to and including Picnic Rock could be graded and leveled to improve circulation and facilitate grooming.

In addition to these improvements to the existing terrain network, one new trail would be added. This trail would be located between the existing Klondike Trail and the Canyon and would create a by-pass to the narrow section of Klondike as it enters the Cabbage Patch area. The new trail would reduce congestion in a historical bottleneck area in the Lower Bowl and would mitigate potential congestion from increased skier traffic in the area resulting from the possible replacement of Chair 4 with a high-speed lift.

Terrain Distribution by Ability Level

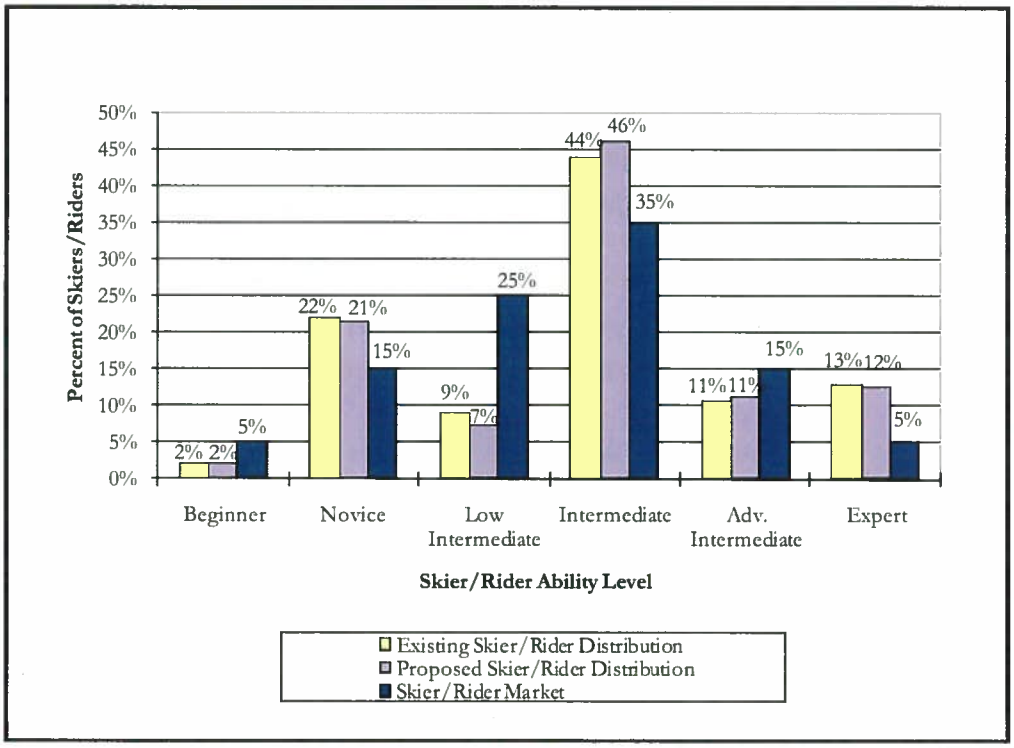
As stated, there are no significant changes to either the total acreage of the developed terrain network, or to the ability level distribution. The terrain classification breakdown of the proposed ski

area is set forth in the following table. The last column in this table represents what can be considered the ideal skill level distribution in the relevant skier market and provides a comparison with the terrain breakdown at Alyeska.

Table 5-1:
Terrain Distribution by Ability Level – Proposed Upgrades

Skier/Rider Ability Level	Trail Area	Skier/Rider Capacity	Alyeska Skier/Rider Distribution	Skier/Rider Market
	(acres)	(guests)	(%)	(%)
Beginner	1.3	40	2	5
Novice	25.7	462	21	15
Low Intermediate	11.1	155	7	25
Intermediate	100.4	1,004	46	35
Adv. Intermediate	34.6	242	11	15
Expert	89.7	269	12	5
TOTAL	**262.8**	**2,173**	**100**	**100**

Chart 5-1:
Terrain Distribution by Ability Level – Proposed Upgrades



The above table and chart show that there are no significant changes to the ability level distribution. However, what is not shown with these numbers is the qualitative improvement to the skiing

experience. The trail improvements detailed above would significantly improve the quality of the skiing on those runs, especially for intermediate and low intermediate level skiers. Additionally, the improvements would improve skier circulation and skier flow as well as decreasing skier densities in the existing congestion areas, which would greatly improve the overall skiing experience for skiers of all ability levels.

3. Terrain Variety/Alternate Terrain

In terms of a resort's ability to retain guests, both for longer durations of visitation and for repeat business, one of the more important factors has proven to be variation in terrain. This means having developed runs of all ability levels, some groomed on a regular basis and some not, as well as mogul runs, bowl skiing, tree skiing, back-country style (hike-to) skiing, and terrain parks and pipes. To provide the highest quality guest experience, resorts should offer some level of all terrain types to the extent it is practical. Even though some of these types of terrain only provide ski opportunities when conditions warrant, terrain variety is increasingly becoming a crucial factor in guests' decisions of ski destinations.

Glades, Bowls, and Back-Country Style Terrain

Alyeska currently provides an uncommonly wide variety of alternate terrain. These areas are found in the open terrain located between the formalized trail network in the Bowl, on the south side of the Bowl accessed by the High Traverse, on the North Face, and on the Headwall and Max's.

The upgrading and expansion program would optimize use of the undeveloped and alternate terrain. A very significant improvement to the access of formerly hike-to terrain would be made through the installation of the Glacier Tram. The Tram would make the Headwall terrain lift-serviced, and would greatly ease access to Max's Mountain and Tea Cup Bowl.

In addition, Alyeska is investigating the possibility of establishing lift-served, back-country skiing within the Virgin Creek area. Access to the Virgin Creek terrain would be via the Glacier Tram; alternatively, lift-assisted access to Virgin Creek via Chair 6 could potentially be offered when the Headwall is open for hiking. An access gate at the top of the Headwall (located adjacent to a proposed ski patrol duty station) would control and regulate traffic into the Virgin Creek area. Skier egress from Virgin Creek would be established by a ski-cut traverse established by patrol, which would extend to the west shoulder of Max's Mountain. At the shoulder of Max's, skiers would ski the fall-line through glades and forested areas, and then traverse back to the Alyeska base area as conceptually illustrated on Figure 5.0. Some tree removal may be required on the route from Max's shoulder back to the base area in order to establish a skiable route through forested areas. A total of about 475 acres of back-country terrain would be made available in Virgin Creek, from the top of the Glacier Tram and the ridge to Max's, extending down to the traverse return route. Of this area,

approximately 95 acres are within the current DNR lease area, 215 acres are on DNR land outside of Alyeska's current DNR lease area, 130 acres are on National Forest System land, and 35 acres are on private land.

In conjunction with the Glacier Tram installation, hike-to skier access would be established to the top of Tea Cup Bowl. As with the Virgin Creek terrain, an access gate located adjacent to the proposed ski patrol duty station would control and regulate traffic to Tea Cup Bowl. The ridge and face connecting the upper Glacier Tram terminal with the top of the Bowl is very steep and rocky, so establishment of an acceptable route may require the construction of structured (i.e., steel or aluminum) bridging or stairs, or possibly both.

During the 2007/08 ski season, Alyeska successfully established access to the upper limits of the Moneys face. Skiers use the current trail to the top of New Year's Chute, and then proceed up the ridge to the entrance to Zug Slide. From the top of Zug Slide, skiers make a descending traverse below the cliff spines to access the upper Moneys face. Alyeska expects utilization of the upper Moneys access to continue and will attempt to open it more frequently.

Alyeska is also investigating a hiking route to the top of the Money's, as well as avalanche control provisions, to allow skier access to the upper Money's area when conditions are acceptable.

In total, the back-country, glades and bowl terrain would encompass about 1,055 acres, including:

- Approximately 115 acres of open bowl terrain accessible off the High Traverse;
- Approximately 180 acres of glades, chutes, and natural openings in the North Face and upper Money's area;
- Approximately 90 acres of glades and natural openings in between the defined runs;
- Approximately 80 acres of hike-to glades, open bowls, and chutes in the Max's area;
- Approximately 115 acres of lift-serviced open bowls and chutes on the Headwall; and
- Approximately 475 acres of lift-served open bowls, chutes and glades in the Virgin Creek area.

Proposed Avalanche Control Devices

If and when the Glacier Tram is installed, use of Gun #2 for mitigation on the Headwall, Tea Cup Bowl and Center Ridge would be limited, as illustrated on Figure 5.0, to prevent shrapnel from damaging the Tram equipment. To allow necessary avalanche mitigation provisions, these areas would only be shot in extreme situations to protect lifts and other facilities should a failure occur

with the other devices during high to extreme avalanche hazard. Alyeska would install remote control devices such as Avalanche Guards ("blaster boxes"), GazX and/or a combination of bomb trams or other technologies to protect the areas from avalanche hazards. The number and location of remote control or other devices would be determined at the time of installation based on changing and evolving technologies. In addition, the Glacier Tram may cause the need for a new howitzer mount and storage magazine in the old Gun #3 area to deal with the severe Glacier Bowl cornice problem. The mount and storage facility would need to include a storage capacity of two to three hundred rounds and be enclosed for safe operation. At this time Snow Safety is considering a location between Christmas and New Years Chutes. A final location would need to be identified for optimal shooting and to meet current table of distances set by ATF, along with other laws by other regulatory agencies. This new gun location would cause additional restrictions (due to shrapnel) on what could be shot from Gun #4, which takes care of the Moneys areas at this time.

A remote control avalanche device is being considered for a location at the top of the Money's (see Figure 5.0). This device would allow effective avalanche mitigation measures and additional terrain openings when weather and snow conditions permit.

The current Gun #4 location is in a relatively safe location. If that weapon does not need to be moved, a cover could be built for it similar to the current Gun #1 cover. Another possible solution would be to move the current Gun #1 cover to Gun #4. In the future, when Gun #1 moves to the new location, construction of a new enclosure at the current Gun #1 magazine location would be built to include storage and a small maintenance facility. The maintenance facility would be used to perform routine maintenance of the gun instead of transporting it to Fort Richardson for the required maintenance.

Avalanche control in the Virgin Creek area, if undertaken, would initially be achieved using hand charges deployed off the ridge. As Alyeska Snow Safety becomes more familiar with the terrain and conditions, they could employ other methods and technologies.

Terrain Parks

Terrain parks have become a vital part of the operations at most mountain resorts. Considerable time and expense are spent on the creation, operation, and maintenance of terrain parks, which are now considered an essential mountain amenity. Popularity of terrain parks continues to increase, and, within any given resort, a terrain park's use is largely dependent on the extent and quality of the park. Terrain parks affect circulation on the mountain, as the parks are often a guest destination. Many resorts have either installed terrain park specific lifts, located their parks in areas that can easily be repeat-skied off existing lifts or have dedicated the majority of the terrain available off a specific lift for terrain parks. Additionally, terrain parks are now often built in highly visible, highly desirable locations on the mountain, given the excitement and marketability they create.

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

To address the demand for, and current trends in, terrain parks, a greatly expanded terrain park is being considered for the Tanaka area. The park would contain both snow and constructed features, and would incorporate progression. Multiple pipes are envisioned, as are various sized jumps, rails, and boxes. The Tanaka area is a desirable location for the terrain park, as it is located in a distinct area that is situated to the side of the main part of the Resort. As such, the area can be a destination for skiers while not interfering with mountain circulation. The Tanaka lift and associated trails would be primarily dedicated to terrain features and race training, which would concentrate these activities and provide direct lift access to them. Additionally, the Tanaka area has the desirable visibility both from the Alyeska base area and the drive up to the Resort base. While the Tanaka location is the area currently envisioned for the terrain park, areas not currently designated as having terrain features may have them in the future.

C. Comfortable Carrying Capacity

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

As stated earlier, the accurate calculation of a ski area's carrying capacity is an important, complex analysis and is the single most important planning criterion for the ski area. All other related skier service facilities can be evaluated and planned based on the proper identification of the mountain's capacity. The detailed calculation of Alyeska's current carrying capacity is described in Table 6 of Appendix A and has been set at 3,700 guests per day. It is not uncommon for ski areas to experience peak days during which skier visitation exceeds the carrying capacity by as much as 25 percent.

However, from a planning perspective, it is not recommended to consistently exceed the carrying capacity due to the resulting decrease in the quality of the recreational experience, and thus the resort's market appeal.

D. NIGHT SKIING PROGRAM

Additions to the current terrain available for night skiing at Alyeska would improve the transition from day to night skiing as well as increase the availability of intermediate terrain. The existing illuminated trail network consists of 102 acres of terrain served by chairs 1, 3, 4, 7, Tanaka and the Tram. The majority of this terrain is associated with chairs 1, 3 and the Tanaka lift. The area proposed for night lighting consists of approximately 19 acres of terrain located between the top terminal of upgraded Chair 4 and the existing Cabbage Patch trail. This area includes the following trails: Connector, the lower portion of Ego Flats, Corkscrew, Easy Trail, Waterfall, Klondike, and the proposed Klondike By-Pass. With the addition of these trails, the night skiing trail network would be expanded to include both of the primary descent routes from the upper mountain. With the exception of the Waterfall trail, all of the additional trails proposed for night lighting are suitable for intermediate-level skiers.

E. SKIER SERVICES FACILITIES AND FOOD SERVICE SEATING

1. Skier Services Locations

If the proposed upgrading to mountain facilities and commercial/residential development on private lands (as set forth in the *Alyeska Area Master Plan*) is accomplished, Alyeska Resort would continue to function with two base area staging portals – the Alyeska base area/village, and the Hotel Alyeska base area. However, additional emphasis would be placed on the Hotel Alyeska base area as a staging portal due to the introduction of additional day skier parking lots in that area, as well as skier oriented vacation beds that would feed the ski area. Accordingly, the amount of skier service space required at the Hotel base area would increase over time.

On-mountain skier services would continue to be offered at the Glacier Terminal. No significant additions are currently being considered for the Glacier Terminal facilities. A new ski patrol duty station would be built at the top of the Glacier Tram, and no other on-mountain skier services are currently being considered other than the Glacier Tram patrol station.

Alyeska Base Area

Redevelopment of the Alyeska base area, as described in the *Alyeska Area Master Plan*, involves the eventual replacement of all skier services buildings in the base area. Planning for future development of skier services in the buildings that would make up Alyeska Village would be guided in part by the spatial planning recommendations set forth below. Alyeska Village would continue to function as the primary day-skier portal to the mountain and would include day skier parking lots, a new Day

Lodge building and first aid building, and a variety of mixed-use buildings that would house the required skier and guest service functions. The Challenge Alaska building would remain in its current location, and space would be allocated for the Race Training Center. The various skier service functions that would be available in Alyeska Village include: Food service, bar/lounge, rest rooms, guest services, ski school, day care/nursery, rental/repair shop, retail, ticket sales, public lockers, and ski patrol/first aid.

Hotel Alyeska Base Area

The current vision for development of the base area at Hotel Alyeska includes a small hamlet of skier services buildings located just to the north of the Tram station. Whether housed in several smaller buildings or one large building, the allocation of skier services space at the Hotel base area would be guided by the spatial planning recommendations set forth below. The various skier service functions that would be available at the Hotel Alyeska base area include: Food service, bar/lounge, rest rooms, guest services, ski school, day care/nursery, rental/repair shop, retail, ticket sales, public lockers, and ski patrol/first aid. Initially, a large day-skier parking lot would be developed at the Hotel base area. Over time, as residential accommodations are developed in the area, portions of the day skier parking lots would be displaced.

It is estimated that at build-out of the Hotel Alyeska base area and Alyeska Village, about 30 to 35 percent of guests would access the ski area through the Hotel base area (an increase of 5 to 10 percent over existing conditions), and about 65 to 70 percent of guests would access the ski area through Alyeska Village.

On-Mountain Facilities

As described earlier, on-mountain facilities would continue to be provided at the Glacier Terminal, and a new ski patrol duty station would be built at the top of the Glacier Tram. No additional space or facilities are currently being contemplated at the Glacier Terminal, although the functionality of spaces within the buildings could be reallocated over time.

2. Space Use Analysis

Sufficient guest service space would need to be provided to accommodate the upgraded Resort's carrying capacity of 3,700 guests per day. The Resort's carrying capacity is the design standard and planning tool defined as the number of daily visitors a resort can comfortably or efficiently accommodate at one time without overburdening the resort infrastructure. In essence, carrying capacity is a guest attendance level that can be serviced by the resort while operations remain optimally functional. As such, the distribution of the carrying capacity is utilized to determine guest service capacities and spatial requirements for skier services at base area portals and on-mountain facilities. The carrying capacity should be distributed between each guest service facility location

according to the number of guests that would be utilizing the lifts and terrain associated with each facility.

In addition to distributing the carrying capacity amongst the base area and on-mountain facilities, guest service capacity needs and the resulting space sizing recommendations are determined through a process of reviewing and analyzing the current and projected operations to determine specific guest service requirements that are unique to the resort. As described earlier, a higher proportion of guests would use the Hotel Alyeska portal to access the mountain in the future. Accordingly, space use recommendations need to accommodate this transition of guest needs, from the Alyeska base area to the Hotel Alyeska base area.

Based upon a carrying capacity of 3,700 skiers and the unique operational factors described above, the tables below present upgraded space use allocations of the visitor service functions based on industry standards for a resort of similar market orientation and regional context as Alyeska. Square footage figures contained in this table are calculated from industry averages, and should not be considered absolute requirements.

Service functions include:

- **Restaurant Seating:** All areas designated for food service seating, including: restaurants, cafeterias, and brown bag areas. Major circulation aisles through seating areas are designated as circulation/waste, not seating space.
- **Kitchen/Scramble:** All food preparation, food service, and food storage.
- **Bar/Lounge:** All serving and seating areas designated as restricted use for the serving and consumption of alcoholic beverages. If used for food service, seats are included in seat counts.
- **Restrooms:** All space associated with restroom facilities (separate women, men, and employees).
- **Guest Services:** Services including resort information desks, kiosks, and lost and found.
- **Adult Ski School:** Ski school booking area and any indoor staging areas. Storage and employee lockers directly associated with ski school are included in this total.
- **Kid's Ski School:** All daycare/nursery facilities, including booking areas and lunch rooms associated with ski school functions. Storage and employee lockers directly associated with ski school are included.

- **Rentals/Repair:** All rental shop, repair services, and associated storage areas.
- **Retail Sales:** All retail shops and associated storage areas.
- **Ticket Sales:** All ticketing and season pass sales areas and associated office space.
- **Public Lockers:** All public locker rooms. Any public lockers located along the walls of circulation space are included, as well as the 2 feet directly in front of the locker doors.
- **Ski Patrol/First Aid:** All first aid facilities, including clinic space. Storage and employee lockers directly associated with ski patrol are included in this total.
- **Administration/Employee Lockers & Lounge/Storage:** All administration/ employee/storage space not included in any of the above functions.

Table 5-2:
Industry Average Space Use
Resort Total – Upgrading Plan

Service Function	Recommended Range	
	Low	High
Ticket Sales/Guest Services	830	1,020
Public Lockers	2,500	3,060
Rentals/Repair	6,020	6,773
Retail Sales	1,780	2,190
Bar/lounge	3,300	4,020
Adult Ski School	1,330	1,630
Kid's Ski School	2,660	3,260
Restaurant Seating	15,730	19,230
Kitchen/Scramble	3,850	4,700
Restrooms	2,270	2,770
Ski Patrol	1,400	1,710
Administration	1,740	2,140
Employee Lockers/Lounge	700	860
Storage	1,990	2,940
TOTAL SQUARE FEET	**46,100**	**56,303**

Table 5-2 illustrates that upon completion of the mountain upgrading plan, Alyeska should have between approximately 46,000 and 56,500 square feet of skier services space distributed throughout the base area and on-mountain skier service facilities. Existing space use allocations are not included for comparison with the recommendations because all of the buildings in the Alyeska base area could eventually be replaced, and the space use figures for Hotel Alyeska are misleading because

they include some areas that are shared by skiers and guests of the Hotel. A complete inventory of existing guest services by building can be found in Appendix A, Table 7.

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

Alyeska Base Area

Skier services in the Alyeska base area would be provided in new Day Lodge and First Aid buildings, as well as a variety of mixed-use buildings that would be located throughout Alyeska Village. Services in the Alyeska base area would include staging functions – tickets, lockers, rentals, retail, and ski school – in addition to food service, bar, first aid and administration/employee space.

Table 5-3:
Industry Average Space Use
Alyeska Base Area – Upgrading Plan

Service Function	Recommended Range	
	Low	High
Ticket Sales/Guest Services	580	710
Public Lockers	1,750	2,140
Rentals/Repair	4,140	4,660
Retail Sales	1,220	1,500
Bar/lounge	1,840	2,240
Adult Ski School	930	1,140
Kid's Ski School	1,860	2,280
Restaurant Seating	8,830	10,800
Kitchen/Scramble	2,160	2,640
Restrooms	1,280	1,560
Ski Patrol	790	960
Administration	1,220	1,500
Employee Lockers/Lounge	490	600
Storage	1,220	1,800
TOTAL SQUARE FEET	**28,310**	**34,530**

Space allocations for the base area staging functions (tickets, lockers, rentals, retail, bar, and ski school) assume that about 2,600 guests (70 percent of the carrying capacity of 3,700) would enter the Resort through the Alyeska base area. The rental space allocation for the base area assumes that

rental equipment would be available for 40 percent of guests arriving at the Alyeska base area (about 1,050 units). It is also assumed that 70 percent of all ski area administration and employee locker space would be located in the Village.

Hotel Alyeska Base Area

Skier services in the Hotel Alyeska base area would continue to be provided on the second floor of the Hotel, as well as in a new building or buildings located just north of the Tram terminal. Services in the Hotel base area would include staging functions – tickets, lockers, rentals, retail, and ski school – in addition to food service, bar, first aid and administration/employee space.

Table 5-4:
Industry Average Space Use
Hotel Alyeska Base Area – Upgrading Plan

Service Function	Recommended Range	
	Low	High
Ticket Sales/Guest Services	250	310
Public Lockers	750	920
Rentals/Repair	1,780	2,000
Retail Sales	520	640
Bar/lounge	790	960
Adult Ski School	400	490
Kid's Ski School	800	980
Restaurant Seating	2,860	3,490
Kitchen/Scramble	700	850
Restrooms	410	500
Ski Patrol	250	310
Administration	520	640
Employee Lockers/Lounge	210	260
Storage	460	680
TOTAL SQUARE FEET	**10,700**	**13,030**

It is important to note that the spatial requirements set forth in Table 5-4 are for skiers only, and do not account for functional needs of Hotel guests. With this in mind, certain skier functions, such as restaurant seating, bar space, retail, and rest rooms can be accommodated in Hotel spaces (such as the Aurora Bar, Tramway Café, etc.); in many cases it is not necessary to duplicate space that is already available in the Hotel, provided that doing so does not compromise the Hotel guest's experience.

Space allocations for the Hotel Alyeska base area staging functions (tickets, lockers, rentals, retail, bar, and ski school) assume that about 1,100 guests (30 percent of the carrying capacity of 3,700)

would enter the resort through the Hotel base area. The rental space allocation for the base area assumes that rental equipment would be available for 40 percent of guests arriving at the Hotel base area (about 450 units). It is also assumed that 30 percent of all ski area administration and employee locker space would be located in the Hotel Alyeska base area.

Glacier Terminal

As discussed earlier, no changes are currently being contemplated at the Glacier Terminal, although the functionality of spaces within the buildings may be reallocated over time.

Table 5-5:
Industry Average Space Use
Glacier Terminal – Upgrading Plan

Service Function	Existing Total	Recommended Range	
		Low	High
Ticket Sales/Guest Services	-	-	-
Public Lockers	-	-	-
Rentals/Repair	115	100	113
Retail Sales	115	40	50
Bar/lounge	1,298	670	820
Adult Ski School	-	-	-
Kid's Ski School	-	-	-
Restaurant Seating	7,054	4,040	4,940
Kitchen/Scramble	2,505	990	1,210
Restrooms	1,012	580	710
Ski Patrol	706	360	440
Administration	-	-	-
Employee Lockers/Lounge	-	-	-
Storage	382	310	460
TOTAL SQUARE FEET	**13,187**	**7,090**	**8,743**

Table 5-5 demonstrates that there is adequate space at the Glacier Terminal to accommodate anticipated skier needs for the facility at completion of the upgrading program.

3. Food Service Seating

Food service seating at Alyeska would be provided in the Alyeska Village, the Hotel Alyeska base area, and the Glacier Terminal. A key factor in evaluating restaurant capacity is the turnover rate of the seats. A turnover rate of two to five times is the standard range utilized in determining restaurant capacity. Sit-down dining at ski areas typically results in a turnover rate of between two and three, while "fast food" cafeteria style dining is characterized by a higher turnover rate. Furthermore, weather has an influence on turnover rates at ski areas, as on snowy days skiers spend more time

indoors than on sunny days. Due to the mix of restaurant types and the predominantly overcast weather, an average turnover rate of less than three was used for Alyeska. A lower rate of 2.5 was used for the Hotel Alyeska seating due to the potential for a more relaxed dining experience at this location.

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

Table 5-6:
Recommended Restaurant Seating
Upgrading Plan

	Alyeska Base Area	Hotel Alyeska	Glacier Terminal	Total Resort
Lunchtime Capacity (carrying capacity)*	2,181	706	998	3,885
Average Seat Turnover	3	2.5	3	
Existing Seats	0	105	274	379
Required Seats	727	282	333	1,342
Difference	-727	-177	-59	-963

* includes non-skiing guests - an additional 5% of Alyeska's carrying capacity

No existing seats are allocated to the Alyeska base area, because all current resort-operated restaurants could be replaced. As shown in the table above, there is a deficit of indoor seating capacity at the Hotel Alyeska base area, but seating capacity at the Glacier Terminal is very close to the recommended allocation.

Seating and restaurant space recommendations are directly related to the lunchtime capacity. The lunchtime capacity is determined by the distribution of each lift area's carrying capacity. It is assumed that skiers would prefer to dine at the facility closest to the area where they are skiing. To allow for this convenience, it is important to provide restaurant seating to accommodate the lunchtime capacity requirement of the area.

F. PARKING CAPACITY

Parking for Alyeska day skiers is currently located in the Alyeska base area and at overflow parking lots located near Hotel Alyeska. A significant number of winter guests staying at Hotel Alyeska are skiers, so Hotel parking has also been included in the total parking capacity of the Resort.

With the proposed reconfiguration and redevelopment of the Alyeska base area, a portion of the main day skier parking lot would be displaced by a new skier drop-off area, and the south end of the main lot would be expanded. Additionally, the Sitzmark parking lots would be displaced by proposed buildings. The net result of these changes is that parking capacity at the Alyeska base area

would be reduced from 1,000 to about 800 spaces. Of the 145 parking spaces provided for Hotel guests, it has been estimated that about 100 can be attributed to skiers staying in the Hotel. The overflow parking lots near the Hotel can hold about 800 cars.

As discussed earlier, it is estimated that about 70 percent of guests (2,600 guests) would use the Alyeska base area portal to access the ski area, and about 30 percent (1,100 guests) would enter the resort via the Hotel Alyeska base area. Parking and accommodations at each base area portal must be sized to accommodate these guest arrival patterns. Furthermore, it has been determined that the existing overflow parking lots are underutilized because of their distance from the base areas, and it is a goal of Alyeska management to provide sufficient "close-in" parking to satisfy daily visitation levels that are representative of the carrying capacity (3,700 guests). The following tables present an analysis of parking capacity at the Alyeska and Hotel Alyeska base areas.

Table 5-7:
Recommended Parking
Alyeska Base Area – Upgrading Plan

	Multiplier	Total
Portal carrying capacity (2,600) + other guests*	1.05	2,730 guests
Carrying capacity + other guests that are day skiers	60%	1,640 guests
Carrying capacity + other guests staying in slope side accommodations	40%	1,090 guests
Guests arriving by car	90%	1,480 guests
Required parking spaces (2.2 guests per car)	2.20	670 cars
Guests arriving by bus/shuttle/other	10%	165 guests
Number of employees requiring parking (5% of carrying capacity)	5%	130 employees
Required employee parking (1.2 employees per car)	1.2	110 cars
Total required spaces		780 cars
Existing parking spaces		800 cars
Surplus/Deficit		20 cars

* "other guests" include non-skiing guests - an additional 5% of Alyeska's carrying capacity

It is estimated that on peak-visitation days, the proposed residential units in Alyeska Village and to the north of Chair 3 would ultimately generate about 1,090 skiers, or 40 percent of the total Alyeska base area portal capacity. The remaining 1,640 guests that are staged through the base area would be day skiers arriving by car (90 percent) or by bus, shuttle, or other means (10 percent). Table 5-7 demonstrates that after the proposed upgrading and reconfiguration of the Alyeska base area, the available parking lots would have sufficient capacity for all guest parking (670 cars) and all employee parking (110 cars). It would be a reasonable Resort policy for non-management employees to park in the overflow parking lots with shuttle service to the ski area. In the event that occupancy rates in on-site accommodations do not generate the 1,090 skiers on peak days, it may be necessary for some day skier guests to use the overflow parking lots.

Table 5-8:
Recommended Parking
Hotel Alyeska Base Area – Upgrading Plan

	Multiplier	Total
Portal carrying capacity (1,100) + other guests*	1.05	1,155 guests
Carrying capacity + other guests that are day skiers	60%	695 guests
Carrying capacity + other guests staying in slope side accommodations	40%	460 guests
Guests arriving by car	90%	625 guests
Required parking spaces (2.2 guests per car)	2.20	285 cars
Guests arriving by bus/shuttle/other	10%	70 guests
Number of employees requiring parking (5% of carrying capacity)	5%	55 employees
Required employee parking (1.2 employees per car)	1.2	45 cars
Total required spaces		330 cars
Existing parking spaces		100 cars
Surplus/Deficit		-230 cars

* "other guests" include non-skiing guests - an additional 5% of Alyeska's carrying capacity

It is estimated that on peak-visitation days, the proposed residential units in the Hotel Alyeska base area would ultimately generate about 460 skiers, or 40 percent of the total Hotel Alyeska base area portal capacity. The remaining 695 guests that are staged through the base area would be day skiers arriving by car (90 percent) or by bus, shuttle, or other means (10 percent). Table 5-7 demonstrates that after the proposed development of the Hotel Alyeska base area, a total of 230 day skier and employee parking spaces should be provided in the base area, in addition to the 100 Hotel parking spaces that are dedicated to skiers staying in the Hotel. These parking lots would be located on DNR land, adjacent to the proposed residential development areas, as illustrated on Figure 5.0. It would be a reasonable Resort policy for non-management employees to park in the overflow parking lots with shuttle service to the ski area. In the event that occupancy rates in on-site accommodations do not generate the 460 skiers on peak days, it would be necessary for some day skier guests to use the overflow parking lots.

It is Alyeska's present intention to develop the proposed parking lots on DNR property, and extend the lots onto private lands where future buildings could be located. These parking lots would augment day skier parking until such time as residential units are developed that would reduce the demand for day skier parking.

G. Challenge Alaska Skiing Program

The Challenge Alaska Adaptive Ski Program has been operating since 1980 and has become a success for disabled recreational skiers and racers. This program will continue to provide instruction

and training conducted on terrain served by the upgraded Chair 3 and Chair 7. More advanced disabled skiers will continue to use terrain served by Chair 6.

H. NORDIC SKIING

Nordic skiing is a very popular winter activity for area residents as well as guests to the resort. As evidenced by the large membership of the Nordic Ski Club of Anchorage, the interest in Nordic skiing by residents of the Anchorage Bowl is substantial. The current cross-country skiing network in and adjacent to Moose Meadows offers both alpine and non-alpine skiing guests an additional recreation activity to enjoy during their visit to the area. While Nordic trails are not a specific component proposed as part of this Master Plan, previous planning documents such as the *Alyeska Area Master Plan* included concept plans for an extensive Nordic and recreational trail system proposed for development within the Glacier Creek and Winner Creek Valleys. A Nordic facility located adjacent to the day skier overflow lot and Moose Meadows was proposed as part of the *Alyeska Area Master Plan.* These planning concepts have been included in the mapping and are depicted on Figure 5.0. It is the Resort's intent to continue to support and foster development of future Nordic trails, facilities and skiing in Glacier Valley.

I. ALTERNATE AND NON-WINTER ACTIVITIES

In addition to Nordic and alpine skiing opportunities available at the Resort, Alyeska is proposing to increase its offering of alternate and non-winter activities available to guests. These activities could include the development of a larger summer trail network for hiking and biking, and two feature rides, a zip line ride (a "zip rider") and a mountain coaster. The trail system proposed for the Resort would consist of approximately 10.1 miles of beginner, intermediate and expert bike trails, 3.1 miles of hiking trails and 2.3 miles of trails suitable for biking and hiking. A total of 15.5 miles of trails are proposed for the Resort providing guests with a trail network of over 22.1 miles.

Alyeska has done substantial research on the installation and operation parameters of zip rider and mountain coaster rides, as well as their potential locations on the mountain relative to base areas and lift facilities. While earlier planning concepts suggested focusing summer activities and feature rides at the Alyeska base area, more recent study has suggested that the Hotel Alyeska base area may be more advantageous for these activities.

A zip rider requires lift service to access the top of the ride. Based on the current and proposed lift configuration at Alyeska, major out-of-base lifts (i.e., lifts with sufficient vertical rise to create a zip ride having a substantial "thrill" factor) provide potential zip rider starting points near the top of Chair 4 or the Glacier Terminal. In either case, optional termination points for the zip rider are in the vicinities of the Alyeska base area or the Hotel Alyeska base area. Currently, Alyeska management is giving consideration to the Glacier Terminal-to-Hotel Alyeska base area alignment

because it would be a truly spectacular ride and could be more practical from an operations standpoint. However, the final alignment would be predicated on further study.

The mountain coaster could potentially operate year-round and provide both skiing and non-skiing guests with an additional activity during their visit to the Resort. Two potential locations have been identified for a mountain coaster (mountain coasters are self-contained and do not require lift service). One location is to the south of the Tanaka lift and the second is in the Chair 7 area. Locating the mountain coaster in the same vicinity as the zip rider would create greater synergy. Therefore, Alyeska management is currently considering the Chair 7 area.

J. Ski Area Operations

1. Ski Patrol/First Aid

The current ski patrol/first aid facilities at the Resort presently meet the requirements of the existing terrain. With redevelopment of the Alyeska base area, the current Aid Station building located near the base terminal of Chair 4 would be removed. A new patrol/first aid building could be located adjacent to the new Chair 4 bottom terminal. No other changes or upgrades are proposed for the existing base area patrol facilities.

If and when the Glacier Tram is constructed, an additional ski patrol duty station would be required. This duty station would be located at the top terminal of the Glacier Tram and would be used to patrol and service terrain accessed from the new Glacier Tram including the Headwall, Max's Mountain, as well as terrain in Virgin Creek and Tea Cup Bowl.

2. Snowmaking Coverage

The existing snowmaking system provides coverage on approximately 113 acres (44 percent) of the formal trail network. While the current system provides optimal snowmaking coverage for the present ski area operations on the front-side of Alyeska, the recent extension of the snowmaking system to the lower half of Autobahn Trail has been found to require augmentation in order to allow more consistent opening of the North Face when snow cover is marginal at lower elevations, and to facilitate grooming of the lower trail segments to improve skier flow. Accordingly, an extension of the lower North Face snowmaking network is proposed, extending further up Autobahn and including Jim's Branch trail, as illustrated on Figure 5.4. The proposed snowmaking on Autobahn (an additional 1.6 acres) extends about 800 feet further up the trail, covering a steep pitch that is difficult to groom and maintain with natural snow. Snowmaking coverage on Jim's Branch would allow earlier opening and facilitate grooming operations, thus providing a second, reliable exit from the North Face and reducing congestion on Autobahn. The proposed snowmaking coverage on Jim's Branch (1.8 acres) extends about 1,000 feet from the trail's intersection with Autobahn to just below the intersection with Gunbarrel.

In order to provide a reliable and instantaneous source of water for the snowmaking system, Alyeska proposes construction of a snowmaking reservoir adjacent to the Autobahn Trail. The proposed reservoir would have a surface area of approximately 1 to 1.5 acres. At an average depth of roughly 10 feet, the storage capacity would be about 3 to 5 million gallons. Water from the snowmaking pond would be used during the early season to allow for adequate snowmaking coverage on the lower mountain. After completion of early season snowmaking, the pond would be drained to prevent any outflow from the reservoir caused by potential avalanches from the North Face. The reservoir would be replenished from surface drainage during the spring and summer, and would be recharged during snowmaking operations from the Creek pump station.

3. Grooming Operations

Alyeska will continue to upgrade its grooming fleet with the replacement of older equipment as necessary. Upgrades to the vehicle fleet will mainly consist of replacing current vehicles with new equipment that include winches for grooming steeper terrain. With the addition of the proposed Klondike By-Pass Trail, an additional 2.3 acres of groomed terrain would be added to the Resort bringing the total groomed area to approximately 132 acres. The current grooming fleet would be able to accommodate this additional terrain.

4. Maintenance Facility

With development of the private lands adjacent to the Alyeska base area, the current maintenance facility would need to be removed from its present location. In addition to relocating the facility, the building would also require expansion in order to account for development of the mountain. One possible site proposed for the facility would be on DNR land northeast of Hotel Alyeska and the adjacent future residential and parking development. The proposed facility would include an 8,000-square foot building footprint as well as one-half to three-quarters of an acre of shop yard space for equipment storage and employee parking. The proposed maintenance facility would be used primarily for maintenance of all resort vehicles, snowmaking and lifts.

The proposed building would include six bays that would be provided with 5½-foot deep pits, each supplied with power and drains. A hydraulic lift would be provided in one bay and a 5-ton overhead crane would service all bays. Each bay would include 20-foot overhead doors and an exhaust system. The new facility would also provide a welding area, an oil room comprising bulk oil and pump system which supplies each bay, a tool room, a crew room with lockers and restroom, and an office. Stair accessed mezzanines (20' x 80' each) would be provided on either end of the structure to be utilized for parts storage. Total useable space in the proposed structure would be 12,800 square feet. Fuel storage (5,000 gallons each for gas and diesel) and a fuel pump island with both snow and bladed road access would also be provided adjacent to the maintenance facility.

5. Administration

The majority of ski area related administration offices are currently located in the Alyeska base area. As the base area is redeveloped over time, the current administration space would be relocated to new buildings within the Alyeska Village in accordance with the spatial recommendations set forth in Section 5.E.2 – Space Use Analysis.

6. Utilities

No new utilities infrastructure is proposed as part of this Master Plan. However, the existing mountain power feed may require upgrading in order to accommodate the requirements of the proposed Glacier Tram and upgraded chairs 1, 4 and 6. The electric drive motor for the Glacier Tram would be in its bottom terminal, which would be located at the Glacier Terminal building.

K. Resort Capacity Balance

The mountain master planning process emphasizes the importance of balancing recreational facility development. The sizes of the various skier service functions are designed to match the Resort's overall carrying capacity. Proposals described in this Master Plan for improvements to Alyeska Resort have been configured to match the capacities of key ski area operations, including lifts, terrain, guest services, food service seating, and parking with the Resort's carrying capacity of 3,700 skiers at one time.

L. Potential Improvement Schedule

The upgrading and expansion of Alyeska Resort must be carefully coordinated to maintain balance among skier demand and the mountain capacity (e.g., lifts and trails). In addition, the development plan must ensure that adequate support equipment and facilities (e.g., day lodge services and facilities, grooming machines, utility infrastructure, and parking) accompany the mountain development at each phase of construction. A carefully balanced mountain and support facility development program will ensure a sustainable resort operation – helping management to safeguard the financial performance of Alyeska Resort.

The improvement schedule summarized in this section represents a potential program for implementation of the major mountain facilities considered in this Master Plan. This schedule is predicated upon resort operations that allow for the realization of the resort's visitation and budget projections. Economic constraints, or yet to be identified business development opportunities, may lengthen or accelerate the phasing of improvements.

The presented development program is designed to maintain a balance among all of the resort's components, while at the same time meeting the future, year-round, recreational needs of the public. Each component features built-in flexibility, which provides management with the option of

regulating the implementation period to reflect key market and financial conditions. Accordingly, the completion of any particular project would likely occur over a multi-year time frame.

1. Lift Plan

Chair 4: Lift Project # 1

- Remove existing Chair 1 lift equipment.
- Remove existing Chair 4 lift equipment and reinstall at Chair 1 location.
- Install new high-speed quad at Chair 4 location.

Chair 6: Lift Project # 2

- Regrade the Runway trail.
- Remove existing Chair 6 lift equipment.
- Regrade base of Chair 6 area.
- Install new high-speed quad at Chair 6 location.

Glacier Tram: Lift Project # 3

- Plan, design and construct a base station for the Glacier Tram in conjunction with remodeling of the existing Glacier Terminal facility to accommodate the Glacier Tram base station.
- Plan, design and construct a summit mountain station at the top of the Glacier Tram to include ski patrol quarters.
- Install new Glacier Tram.
- USFS/DNR to design and construct the Virgin Creek Ski Back Trail.

2. Snow Safety Plan

- Alyeska Resort is committed to developing a snow safety plan for avalanche control work from Tea Cup Bowl to Max's Chute.
- Investigate and study possible Blaster Box or Gas X installations on the Headwall.
- Install new Gun #3.
- Resurface Gun #2 platform.

- Design and renovate Gun #2 platform to accommodate a Howitzer Gun.
- Design and construct a shelter for Gun #1.
- Implement improvements to the current bomb trolleys along the top of the North Face.

3. Mountain Operation Infrastructure

- Design and construct a new building in the Alyeska base area, near the existing Project Office building, to house first aid clinic, ski patrol headquarters, the mountain business office, lift crew quarters and locker rooms.
- Demolish the Lift Chalet building.
- Relocate the Vehicle Maintenance Shop per Ski Area Master Plan.

4. Trail Improvements

- Alyeska has a long term hiking and biking trail development plan, as outlined in the Ski Area Master Plan, to improve, modify and reseed the mountain during/after these projects as well as during the summer in to the foreseeable future.
- Cockroach Trail improvements on the North Face connecting Westline to Cockroach Trail and extending to Blueberry Hill.
- Mighty Mite trail improvements – recontour the spot where the snowcat bottoms out and widen the cat road area between the top of Trapline and the top of Mighty Mite run.
- Top to Midway trail improvements including blasting Zug Knoll.
- Denali and Von Imhof blasting and regrading to account for increased skier traffic from the new Chair 1/Chair 4 installation.
- Trail grading improvements to include Klondike Bypass, Cork Screw and Runway cut bank. (Store the rock and fill from the Runway cut bank to use in the future for the base of new Chair 6).
- Von's Corner to North Face (Cockroach area) cat road construction.

5. Parking Plan

- The Resort expects to continue to locate, develop and enhance parking and pedestrian pathways into the foreseeable future.

- P6 Parking Lot Construction – summer of 2009, initial clearing of the P6 lot followed by a feasibility study of an "ice road" type of parking facility.

6. Activity Plan

- Tubing Slide – Study this idea. Location is thought to be midway Chair 7 to the base of Blueberry Hill. This would allow for year round tubing slide activities.

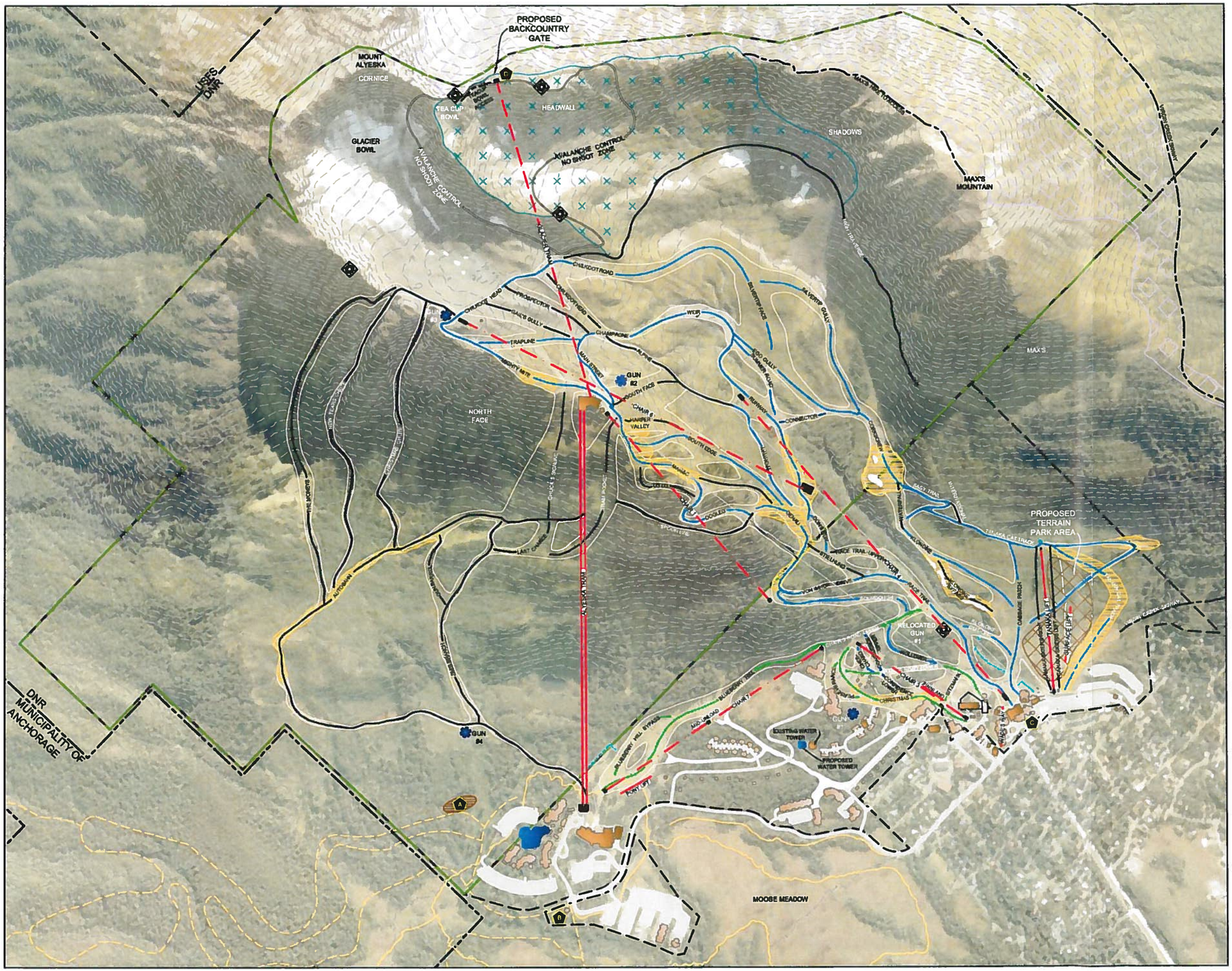
- Tubing Hill – located on Jim's Branch run out during the winter only.

- Consider potential zip line and other summer activities and locations.

7. Miscellaneous Projects

- Snowmaking extension (including pond) and trail work on Autobahn/North Face/Jim's Branch.

- Install night lighting on Waterfall.



ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 5.0
Proposed Mountain Plan

LEGEND

- EXISTING NOVICE TRAILS
- EXISTING INTERMEDIATE TRAILS
- EXISTING EXPERT TRAILS
- PROPOSED NOVICE TRAILS
- PROPOSED INTERMEDIATE TRAILS
- PROPOSED EXPERT TRAILS
- EXISTING LIFTS
- PROPOSED LIFTS
- MODIFIED LIFTS
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- PRIVATE PROPERTY BOUNDARY
- ALYESKA RESORT DNR LEASE BOUNDARY
- EXISTING NORDIC TRAILS
- PROPOSED NORDIC TRAILS
- EXISTING AVALANCHE STRUCTURE
- AVALANCHE CONTROL SITE
- PROPOSED AVALANCHE CONTROL STRUCTURE
- PROPOSED CLEARING
- PROPOSED GRADING AREAS
- PROPOSED VIRGIN CREEK TERRAIN
- PROPOSED GLACIER TRAM TERRAIN

MOUNTAIN FACILITIES

- PROPOSED MAINTENANCE BUILDING
- PROPOSED NORDIC FACILITY
- PROPOSED DAYLODGE
- PROPOSED SKI PATROL

DECEMBER 2008

0 500' 1000'

Graphic Scale: 1" = 1000'

Contour Interval = 25'

North

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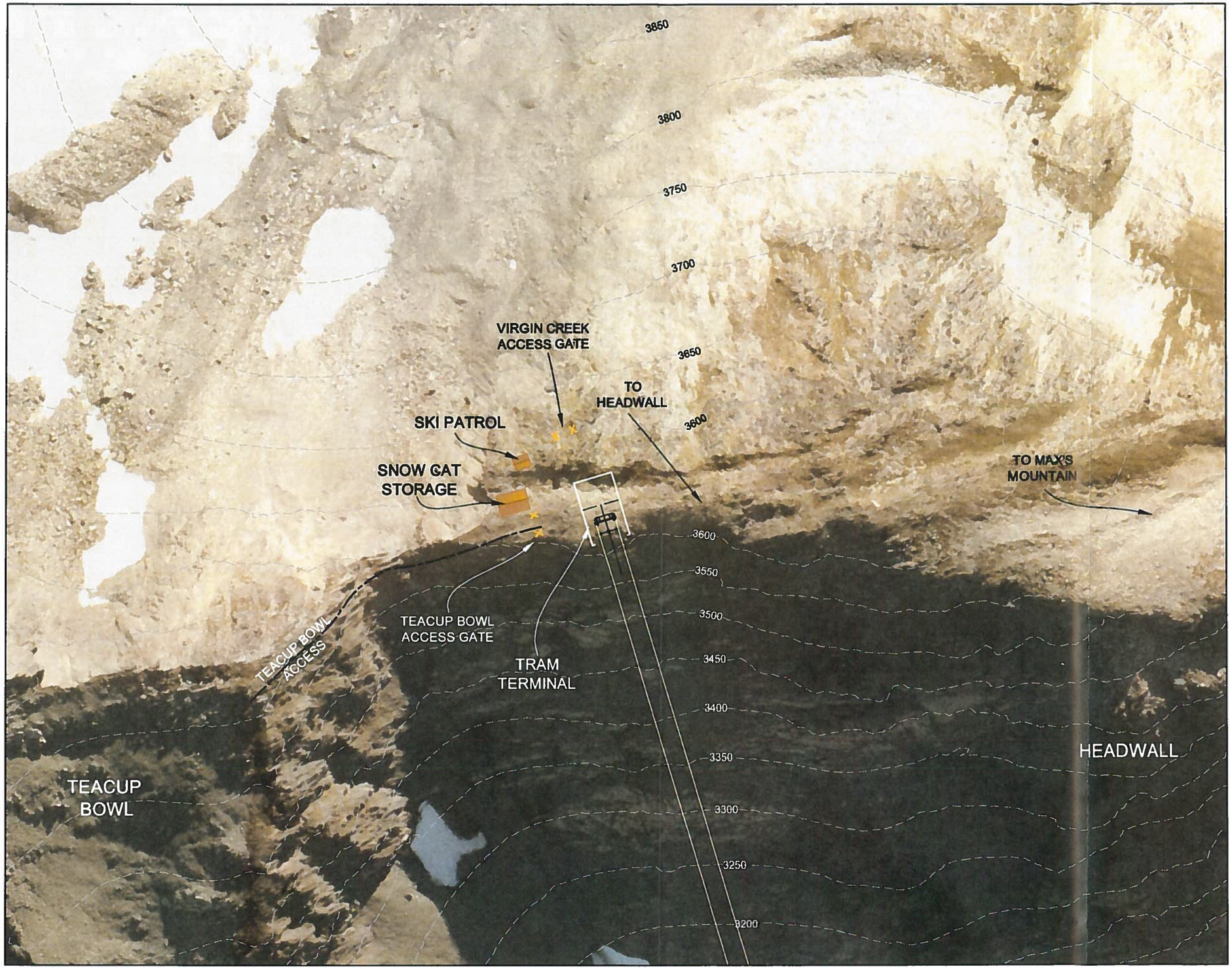

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 5.1
PROPOSED GLACIER TRAM SUMMIT TERMINAL SITE PLAN

LEGEND

- LIFT
- BUILDINGS

DECEMBER, 2008

0 50' 100'

Graphic Scale: 1" = 100'

Contour Interval = 50'

North

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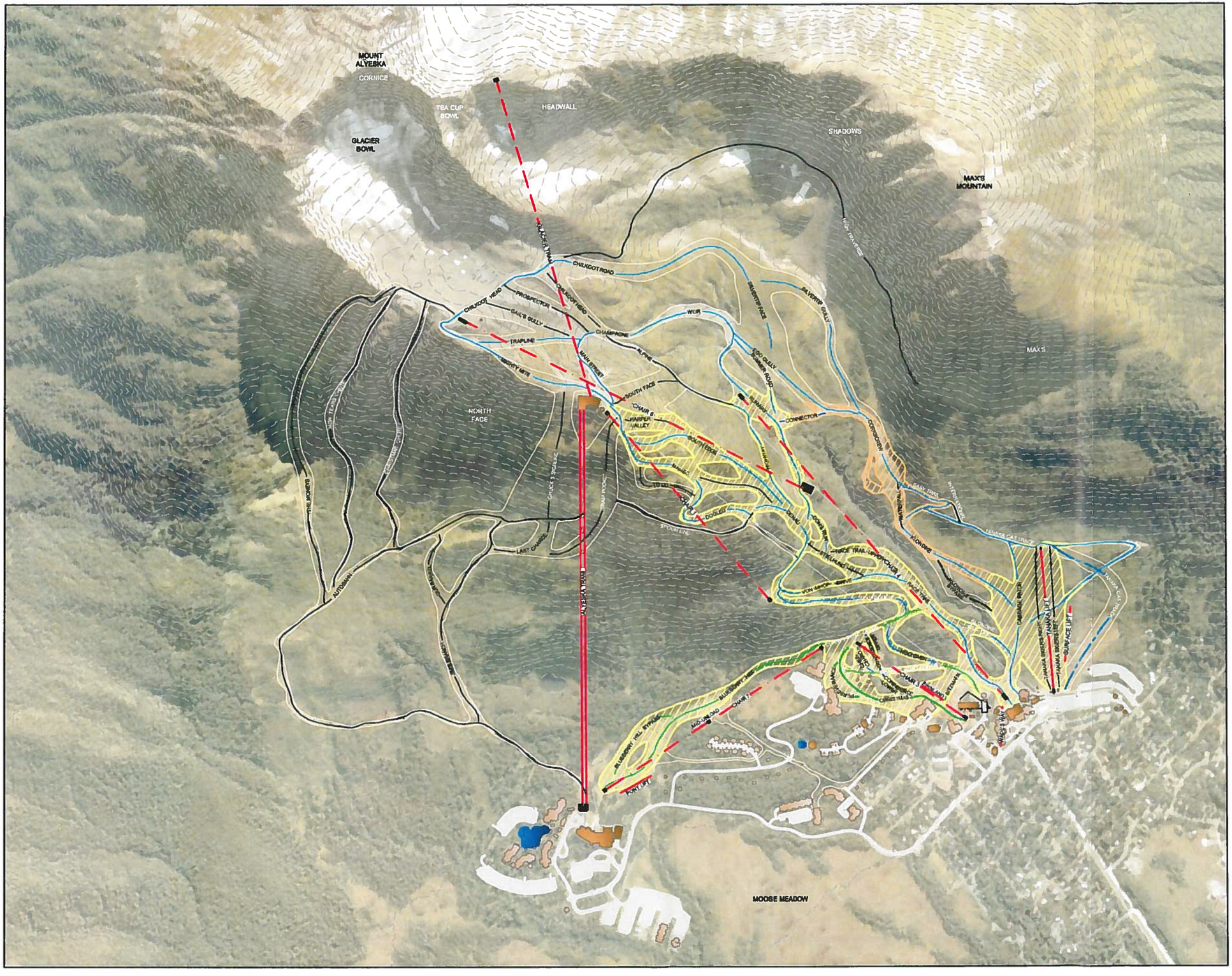

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 5.2
PROPOSED NIGHT SKIING TERRAIN

LEGEND

- NOVICE TRAILS
- INTERMEDIATE TRAILS
- EXPERT TRAILS
- EXISTING LIFTS
- PROPOSED LIFTS
- MODIFIED LIFTS
- PROPOSED BUILDINGS
- EXISTING BUILDINGS
- EXISITNG NIGHT SKIING
- PROPOSED NIGHT SKIING

DECEMBER 2008

0 500' 1000'

Graphic Scale: 1" = 1000'

Contour Interval = 25'

North

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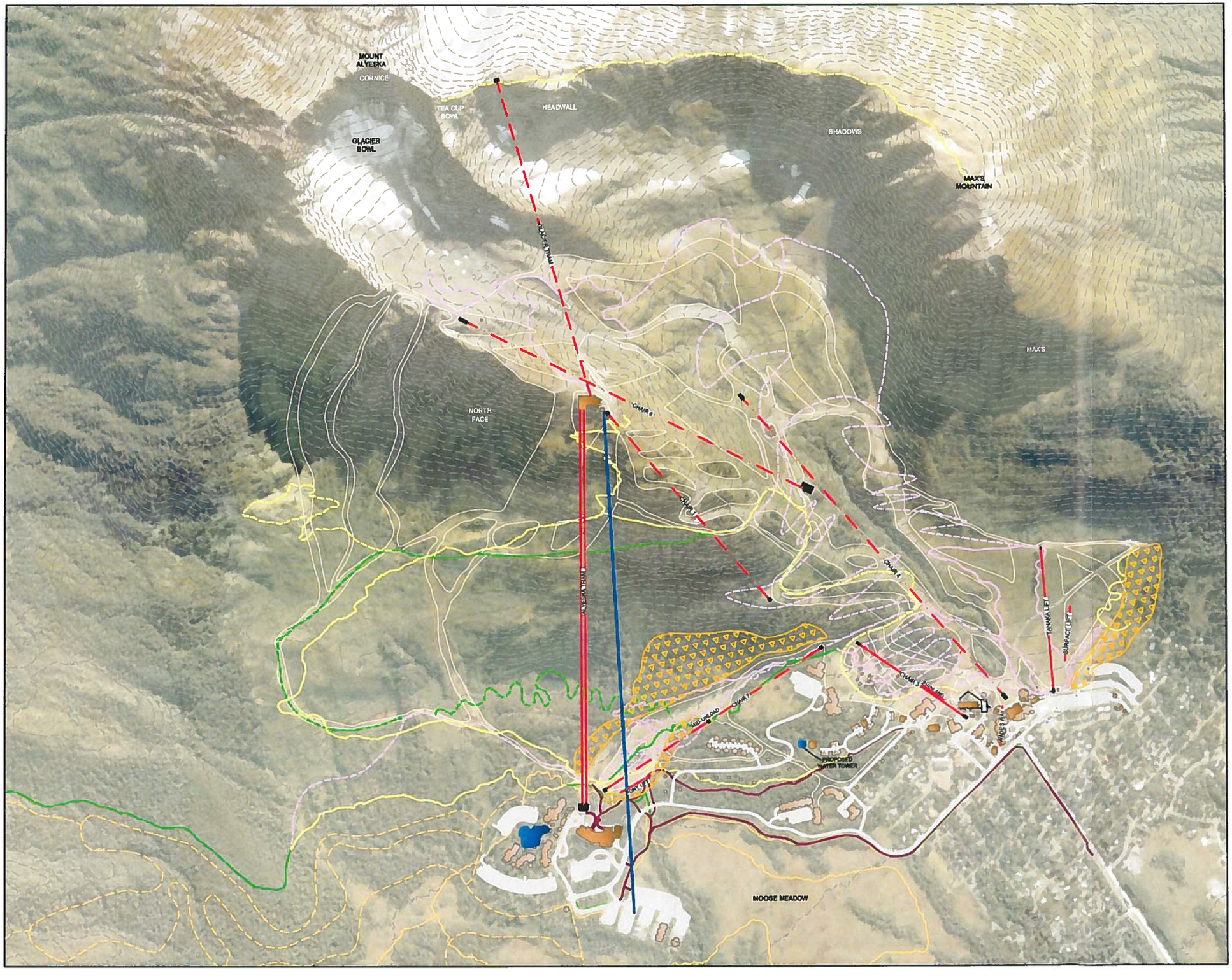

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 5.3
PROPOSED ALTERNATE AND NON-WINTER ACTIVITIES

LEGEND

- EXISTING HIKING & BIKING TRAILS
- EXISTING HIKING TRAILS
- EXISTING BIKING TRAILS
- EXISTING NORDIC TRAILS
- PROPOSED HIKING & BIKING TRAILS
- PROPOSED HIKING TRAILS
- PROPOSED BIKING TRAILS
- PROPOSED NORDIC TRAILS
- PROPOSED MOUNTAIN COASTER STUDY AREAS
- PROPSED ZIP RIDER
- EXISTING LIFTS
- PROPOSED LIFTS
- MODIFIED LIFTS
- EXISTING BUILDINGS
- PROPOSED BUILDINGS

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0 500' 1000'

Graphic Scale: 1" = 1000'

Contour Interval = 25'

North

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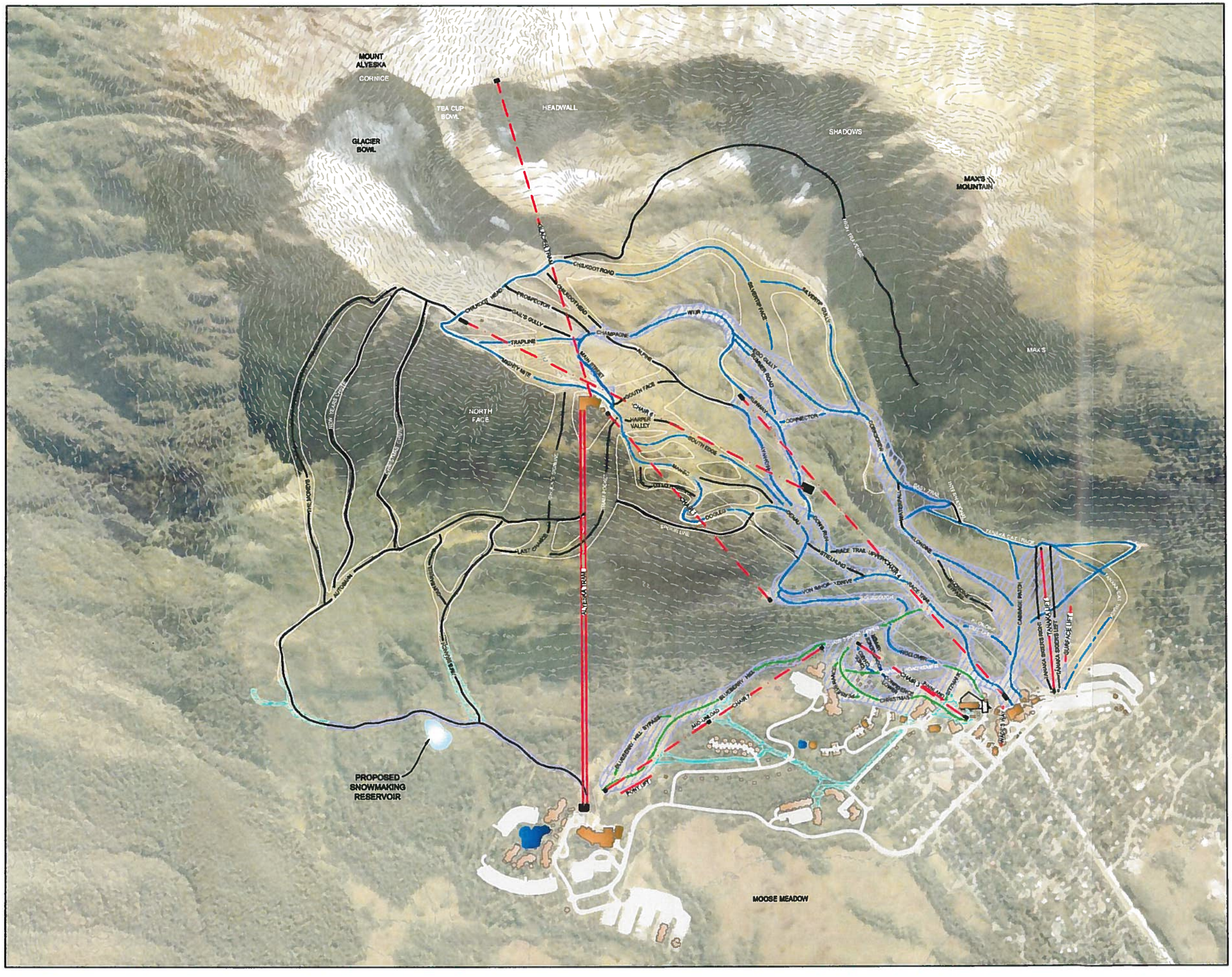

ALYESKA RESORT
ALASKA

GIRDWOOD, ALASKA

SKI AREA MASTER PLAN

FIG. 5.4
PROPOSED SNOWMAKING COVERAGE

LEGEND

- NOVICE TRAILS
- INTERMEDIATE TRAILS
- EXPERT TRAILS
- EXISTING LIFTS
- PROPOSED LIFTS
- MODIFIED LIFTS
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- PROPOSED SNOWMAKING
- EXISTING SNOWMAKING

DECEMBER 2008

0 500' 1000'

Graphic Scale: 1" = 1000'

Contour Interval = 25'

North

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2008 Ski Area Master Plan

ALYESKA RESORT

APPENDIX A

Table 1:
Lift Specifications - Existing Conditions

Lift Name, Lift Type	Top Elev.	Bot. Elev.	Vert. Rise	Plan Length	Slope Length	Avg. Grade	Actual Design Capacity	Rope Speed	Carrier Spacing	Lift Maker/ Year Installed
	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(%)	(pers./hr.)	(fpm)	(ft.)	
Alyeska Tram	2,284	268	2,016	4,246	4,903	47%	800	2,000	9,000	Von Roll/1993
Chair 1	2,281	290	1,991	5,029	5,539	40%	774	500	78	Riblet/1979
Chair 3	568	299	269	1,095	1,137	25%	1,800	450	60	DoppelmayrCTEC/2008
Chair 4	1,620	280	1,340	4,322	4,599	31%	2,100	500	57	Poma/1992
Chair 6	2,740	1,341	1,399	4,100	4,407	34%	2,400	1,000	100	Doppelmayr/1988
Chair 7 to Top	559	270	289	2,762	2,795	10%	500	500	240	Poma/1993
Chair 7 to Mid-Unload	466	270	196	1,328	1,351	15%	1,500	500	80	Poma/1993
Tanaka Lift	790	263	528	1,527	1,632	35%	1,200	500	50	Riblet/1980
Finnland	280	260	20	250	251	8%	300	160	32	Magic Carpet/2007
Wades Way	277	244	33	421	423	8%	300	160	32	NA
Pony Lift	290	266	24	366	367	6%	300	260	52	NA

Source: SE GROUP

Table 2:
Lift Specifications – Upgrade Plan

Lift Name, Lift Type	Top Elev. (ft.)	Bot. Elev. (ft.)	Vert. Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Avg. Grade (%)	Actual Design Capacity (pers./hr.)	Rope Speed (fpm)	Carrier Spacing (ft.)	Lift Maker/ Year Installed
Alyeska Tram	2,284	268	2,016	4,246	4,903	47%	800	2,000	9,000	Von Roll/1993
Chair 1/C4	2,281	1,050	1,231	2,658	2,929	46%	2,400	400	40	Upgraded/Old Chair 4
Chair 3/C4	568	278	289	1,407	1,449	21%	1,800	450	60	Proposed/Lengthened
Chair 4/DC4	1,604	282	1,322	4,267	4,520	31%	2,400	1,000	100	Proposed/Realigned
Chair 6/DC4	2,740	1,341	1,399	4,100	4,407	34%	2,400	1,000	100	Upgraded
Chair 7 to Top	559	270	289	2,762	2,795	10%	500	500	240	Poma/1993
Chair 7 to Mid-Unload	466	270	196	1,328	1,351	15%	1,500	500	80	Poma/1994
Tanaka Lift	790	263	528	1,527	1,632	35%	1,200	500	50	Riblet/1980
Finnland	280	260	20	250	251	8%	300	160	32	Magic Carpet/2007
Wades Way	277	244	33	421	423	8%	300	160	32	NA
Pony Lift	290	266	24	366	367	6%	300	260	52	NA
Surface Lift	458	287	170	578	605	29%	600	300	30	Proposed
Glacier Tram	3,620	2,306	1,314	3,500	4,018	38%	196	1,000	3,980	Proposed

Legend:
Existing, Upgraded/Modified Lifts
New, Proposed Lifts

Source: SE GROUP

Table 3:
Terrain Specifications – Existing Conditions

Trail Area/Name	Top Elev. (ft.)	Bot. Elev. (ft.)	Vert. Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Avg. Width (ft.)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Alpine	2,107	1,619	487	1,595	1,687	42	1.6	31	44	Adv. Intermediate
Autobahn	1,338	278	1,060	7,042	7,192	56	9.2	15	42	Expert
Blueberry Hill	560	270	290	2,888	2,923	123	8.2	10	27	Novice
Blueberry Hill Bypass	400	277	123	913	924	188	4.0	13	19	Novice
Cabbage Patch	818	280	538	1,687	1,789	167	6.9	32	53	Intermediate
Chair 3 Road - Lower	502	291	211	1,608	1,629	57	2.1	13	24	Novice
Chair 3 Road - Upper	645	560	85	1,151	1,167	75	2.0	7	16	Novice
Champagne	2,169	1,960	210	885	913	60	1.3	24	31	Intermediate
Cheechako	590	470	120	420	439	109	1.1	29	38	Low Intermediate
Chilkoot Head	2,740	2,564	176	971	997	35	0.8	18	36	Intermediate
Chilkoot Ridge	2,519	2,134	385	800	891	143	2.9	48	58	Expert
Chilkoot Road	2,564	1,943	622	2,419	2,520	164	9.5	26	47	Intermediate
Christmas	564	300	264	1,415	1,445	171	5.7	19	31	Novice
Christmas Chute	2,758	1,123	1,636	2,783	3,307	59	4.5	59	121	Expert
Chuck's Signline	2,350	1,440	910	1,335	1,626	551	20.6	68	89	Expert
Confidence - Lower	450	312	138	640	662	105	1.6	22	40	Intermediate
Confidence - Upper	600	460	139	416	441	71	0.7	34	43	Intermediate
Connector	1,469	1,400	70	485	494	100	1.1	14	20	Intermediate
Corkscrew	1,348	1,146	202	890	926	247	5.2	23	53	Intermediate
Crease	1,844	1,472	372	841	923	154	3.3	44	55	Expert
Denali	1,527	1,232	295	709	775	126	2.2	42	57	Intermediate
Dogleg	1,798	1,532	266	1,141	1,192	95	2.6	23	33	Intermediate
Don's Run	1,416	1,119	298	702	769	85	1.5	42	51	Intermediate
Easy Trail	1,144	972	172	1,111	1,136	40	1.1	15	29	Intermediate

Table 3:
Terrain Specifications – Existing Conditions

Trail Area/Name	Top Elev. (ft.)	Bot. Elev. (ft.)	Vert. Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Avg. Width (ft.)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Ego Flats	1,709	1,346	363	1,604	1,649	141	5.3	23	28	Intermediate
Gail's Gully	2,663	2,226	437	989	1,086	223	5.6	44	56	Adv. Intermediate
Gear Jammer	1,524	1,175	349	632	742	56	1.0	55	81	Expert
Gunbarrel	1,216	898	318	812	879	103	2.1	39	44	Expert
Harper Valley	2,220	1,988	232	587	633	245	3.6	40	49	Adv. Intermediate
Highway	1,619	1,402	217	1,270	1,305	43	1.3	17	44	Intermediate
International	1,068	953	115	225	256	30	0.2	51	54	Adv. Intermediate
Jim's Branch	1,319	391	928	2,442	2,633	75	4.5	38	55	Expert
Klondike	938	517	422	1,435	1,503	179	6.2	29	43	Intermediate
Klondike Cut-off	507	364	143	590	613	86	1.2	24	36	Intermediate
Last Chance	1,419	1,200	219	766	813	146	2.7	29	48	Expert
Lolo's	2,053	1,795	258	767	840	83	1.6	34	65	Expert
Main Street	2,270	2,169	101	875	888	30	0.6	12	17	Low Intermediate
Mambo	2,275	1,798	476	1,460	1,549	87	3.1	33	51	Intermediate
Mighty Mite	2,740	2,271	469	2,248	2,319	78	4.2	21	41	Intermediate
New Years Chute	2,741	951	1,790	4,171	4,693	54	5.8	43	105	Expert
Perseverance	513	437	76	593	599	159	2.2	13	19	Novice
Pony lift terrain	285	265	20	200	205	74	0.3	10	12	Beginner
Prospector	2,591	2,158	433	1,022	1,114	155	4.0	42	51	Adv. Intermediate
Race Trail	883	276	607	2,243	2,340	142	7.6	27	49	Intermediate
Race Trail - Upper	1,088	798	290	782	841	144	2.8	37	57	Adv. Intermediate
Rollover	614	382	232	761	801	78	1.4	30	48	Intermediate
Runway	1,707	1,343	364	2,118	2,188	96	4.8	17	32	Low Intermediate
Silvertip Face	1,943	1,636	307	929	985	315	7.1	33	49	Intermediate
Silvertip Gully	1,900	1,355	545	1,927	2,009	136	6.3	28	41	Intermediate

Table 3:
Terrain Specifications – Existing Conditions

Trail Area/Name	Top Elev. (ft.)	Bot. Elev. (ft.)	Vert. Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Avg. Width (ft.)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Sitzmark	359	299	59	447	453	148	1.5	13	22	Novice
Sourdough	1,073	645	428	1,527	1,593	96	3.5	28	44	Intermediate
South Edge	2,172	1,436	735	1,889	2,035	138	6.4	39	55	Intermediate
South Face	2,264	1,835	430	727	862	295	5.8	59	90	Expert
Spoon Line	1,726	1,532	194	1,607	1,632	37	1.4	12	23	Expert
Stielhung	1,210	887	323	673	750	107	1.8	48	60	Expert
Summer Road	1,698	1,483	216	923	950	82	1.8	23	31	Low Intermediate
Tanaka Cat Track	1,028	444	584	3,723	3,809	29	2.5	16	31	Low Intermediate
Tanaka Skiers Left	781	260	522	1,491	1,591	163	6.0	35	56	Adv. Intermediate
Tanaka Skiers Right	790	267	524	1,519	1,620	192	7.2	34	56	Adv. Intermediate
The Ballroom	1,574	1,337	237	919	961	45	1.0	26	49	Expert
The Money's	2,783	901	1,882	3,990	4,588	97	10.2	47	104	Expert
Tram Pocket	2,257	1,266	990	1,793	2,078	238	11.4	55	81	Expert
Trapline	2,641	2,177	464	1,074	1,172	122	3.3	43	47	Intermediate
Von Imhof Drive	1,232	884	348	1,540	1,587	41	1.5	23	34	Intermediate
Waterfall	1,146	938	208	490	537	127	1.6	42	53	Adv. Intermediate
Wade's Way	277	244	40	420	425	100	1.0	10	12	Beginner
Weir	1,960	1,709	251	910	947	127	2.8	28	34	Low Intermediate
TOTAL					**97,836**		**255.6**			

Source: SE GROUP

Table 4:
Terrain Specifications – Upgrade Plan

Trail Area/Name	Top Elev. (ft.)	Bot. Elev. (ft.)	Vert. Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Avg. Width (ft.)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Alpine	2,107	1,619	487	1,595	1,687	42	1.6	31	44	Adv. Intermediate
Autobahn	1,338	278	1,060	7,042	7,192	56	9.2	15	42	Expert
Blueberry Hill	560	270	290	2,888	2,923	123	8.2	10	27	Novice
Blueberry Hill Bypass	400	277	123	913	924	188	4.0	13	19	Novice
Cabbage Patch	818	280	538	1,687	1,789	167	6.9	32	53	Intermediate
Chair 3 Road - Lower	502	291	211	1,608	1,629	57	2.1	13	24	Novice
Chair 3 Road - Upper	645	560	85	1,151	1,167	75	2.0	7	16	Novice
Champagne	2,169	1,960	210	885	913	60	1.3	24	31	Intermediate
Cheechako	590	470	120	420	439	109	1.1	29	38	Low Intermediate
Chilkoot Head	2,740	2,564	176	971	997	35	0.8	18	36	Intermediate
Chilkoot Ridge	2,519	2,134	385	800	891	143	2.9	48	58	Expert
Chilkoot Road	2,564	1,943	622	2,419	2,520	164	9.5	26	47	Intermediate
Christmas	577	276	301	1,938	1,968	128	5.8	16	28	Novice
Christmas Chute	2,758	1,123	1,636	2,783	3,307	59	4.5	59	121	Expert
Chuck's Signline	2,350	1,440	910	1,335	1,626	551	20.6	68	89	Expert
Confidence - Lower	450	312	138	640	662	92	1.4	22	40	Intermediate
Confidence - Upper	600	460	139	416	441	71	0.7	34	43	Intermediate
Connector	1,469	1,400	70	485	494	100	1.1	14	20	Intermediate
Corkscrew	1,348	1,146	202	890	926	247	5.2	23	53	Intermediate
Crease	1,844	1,472	372	841	923	154	3.3	44	55	Expert
Denali	1,527	1,232	295	709	775	126	2.2	42	57	Intermediate
Dogleg	1,798	1,532	266	1,141	1,192	95	2.6	23	33	Intermediate
Don's Run	1,416	1,119	298	702	769	85	1.5	42	51	Intermediate
Easy Trail	1,144	972	172	1,111	1,136	40	1.1	15	29	Intermediate

Table 4:
Terrain Specifications – Upgrade Plan

Trail Area/Name	Top Elev. (ft.)	Bot. Elev. (ft.)	Vert. Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Avg. Width (ft.)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Ego Flats	1,709	1,346	363	1,604	1,649	141	5.3	23	28	Intermediate
Gail's Gully	2,663	2,226	437	989	1,086	223	5.6	44	56	Adv. Intermediate
Gear Jammer	1,524	1,175	349	632	742	56	1.0	55	81	Expert
Gunbarrel	1,216	898	318	812	879	103	2.1	39	44	Expert
Harper Valley	2,220	1,988	232	587	633	245	3.6	40	49	Adv. Intermediate
Highway	1,619	1,402	217	1,270	1,305	43	1.3	17	44	Intermediate
International	1,068	953	115	225	256	30	0.2	51	54	Adv. Intermediate
Jim's Branch	1,319	391	928	2,442	2,633	75	4.5	38	55	Expert
Klondike	938	517	422	1,435	1,503	179	6.2	29	43	Intermediate
Klondike Bypass	780	522	258	849	912	109	2.3	30	50	Adv. Intermediate
Klondike Cut-off	507	364	143	590	613	86	1.2	24	36	Intermediate
Last Chance	1,419	1,200	219	766	813	146	2.7	29	48	Expert
Lolo's	2,053	1,795	258	767	840	83	1.6	34	65	Expert
Main Street	2,270	2,169	101	875	888	30	0.6	12	17	Low Intermediate
Mambo	2,275	1,798	476	1,460	1,549	87	3.1	33	51	Intermediate
Mighty Mite	2,740	2,271	469	2,248	2,319	78	4.2	21	41	Intermediate
New Years Chute	2,741	951	1,790	4,171	4,693	54	5.8	43	105	Expert
Perseverance	513	437	76	533	541	146	1.8	14	21	Novice
Pony lift terrain	285	265	20	200	205	74	0.3	10	12	Beginner
Prospector	2,591	2,158	433	1,022	1,114	155	4.0	42	51	Adv. Intermediate
Race Trail	883	276	607	2,243	2,340	142	7.6	27	49	Intermediate
Race Trail - Upper	1,088	798	290	782	841	144	2.8	37	57	Adv. Intermediate
Rollover	614	382	232	761	801	78	1.4	30	48	Intermediate
Runway	1,707	1,343	364	2,118	2,188	96	4.8	17	32	Low Intermediate
Silvertip Face	1,943	1,636	307	929	985	315	7.1	33	49	Intermediate

Table 4:
Terrain Specifications – Upgrade Plan

Trail Area/Name	Top Elev. (ft.)	Bot. Elev. (ft.)	Vert. Rise (ft.)	Plan Length (ft.)	Slope Length (ft.)	Avg. Width (ft.)	Slope Area (acres)	Avg. Grade (%)	Max Grade (%)	Ability Level
Silvertip Gully	1,900	1,355	545	1,927	2,009	136	6.3	28	41	Intermediate
Sitzmark	360	301	60	384	390	193	1.7	16	23	Novice
Sourdough	1,073	645	428	1,527	1,593	96	3.5	28	44	Intermediate
South Edge	2,172	1,436	735	1,889	2,035	138	6.4	39	55	Intermediate
South Face	2,264	1,835	430	727	862	295	5.8	59	90	Expert
Spoon Line	1,726	1,532	194	1,607	1,632	37	1.4	12	23	Expert
Stielhung	1,210	887	323	673	750	107	1.8	48	60	Expert
Summer Road	1,698	1,483	216	923	950	82	1.8	23	31	Low Intermediate
Tanaka Cat Track	1,028	260	768	3,535	3,657	92	7.7	22	45	Intermediate
Tanaka Skiers Left	781	260	522	1,491	1,591	163	6.0	35	56	Adv. Intermediate
Tanaka Skiers Right	790	267	524	1,519	1,620	192	7.2	34	56	Adv. Intermediate
The Ballroom	1,574	1,337	237	919	961	45	1.0	26	49	Expert
The Money's	2,783	901	1,882	3,990	4,588	97	10.2	47	104	Expert
Tram Pocket	2,257	1,266	990	1,793	2,078	238	11.4	55	81	Expert
Trapline	2,641	2,177	464	1,074	1,172	122	3.3	43	47	Intermediate
Von Imhof Drive	1,232	884	348	1,540	1,587	41	1.5	23	34	Intermediate
Waterfall	1,146	938	208	490	537	127	1.6	42	53	Adv. Intermediate
Wade's Way			40	420	425	100	1.0	10	12	Beginner
Weir	1,960	1,709	251	910	947	127	2.8	28	34	Low Intermediate
TOTAL					**98,997**		**262.8**			

Legend:
Existing, Upgraded/Modified Terrain
New, Proposed Terrain

Source: SE GROUP

Table 5:
Daily Lift Capacity – Carrying Capacity – Existing Conditions

Lift Name, Lift Type	Slope Length	Vertical Rise	Actual Design Capacity	Oper. Hours	Up-Mtn. Access Role	Misloading/ Lift Stoppages	Adjusted Hourly Cap.	VTF/Day	Vertical Demand	Daily Lift Capacity
	(ft.)	(ft.)	(guests/hr.)	(hrs.)	(%)	(%)	(guests/hr.)	(000)	(ft./day)	(guests)
Alyeska Tram	4,903	2,016	800	7.00	25	0	600	8,469	29,015	290
Chair 1	5,539	1,991	774	7.00	25	10	503	7,011	22,436	310
Chair 3	1,137	269	1,800	7.00	5	10	1,530	2,876	7,588	380
Chair 4	4,599	1,340	2,100	7.00	25	10	1,365	12,805	15,804	810
Chair 6	4,407	1,399	2,400	6.75	0	5	2,280	21,524	20,808	1,030
Chair 7 to Top	2,795	289	500	7.00	65	10	125	253	3,887	70
Chair 7 to Mid-Unload	1,351	196	1,500	7.00	0	10	1,350	1,850	4,865	380
Tanaka Lift	1,632	528	1,200	7.00	0	5	1,140	4,211	17,880	240
Finnland	251	20	300	7.00	0	0	300	41	1,004	40
Wades Way	423	33	300	7.00	0	0	300	70	1,234	60
Pony Lift	367	24	300	7.00	0	0	300	49	1,125	40
TOTAL	**27,503**		**11,535**				**9,465**	**58,300**		**3,650**

Source: SE GROUP

Table 6:
Daily Lift Capacity – Carrying Capacity – Upgrade Plan

Lift Name, Lift Type	Slope Length	Vertical Rise	Actual Design Capacity	Oper. Hours	Up-Mtn. Access Role	Misloading/ Lift Stoppages	Adjusted Hourly Cap.	VTF/Day	Vertical Demand	Daily Lift Capacity
	(ft.)	(ft.)	(guests/hr.)	(hrs.)	(%)	(%)	(guests/hr.)	(000)	(ft./day)	(guests)
Alyeska Tram	4,903	2,016	800	7.00	25	0	600	8,469	33,381	250
Chair 1/C4	2,929	1,231	2,400	7.00	50	10	960	8,273	23,852	350
Chair 3/C4	1,449	289	1,800	7.00	5	10	1,530	3,098	5,628	550
Chair 4/DC4	4,520	1,322	2,400	7.00	25	5	1,680	15,552	22,581	690
Chair 6/DC4	4,407	1,399	2,400	6.75	0	5	2,280	21,524	24,062	890
Chair 7 to Top	2,795	289	500	7.00	65	10	125	253	3,887	70
Chair 7 to Mid-Unload	1,351	196	1,500	7.00	0	10	1,350	1,850	4,865	380
Tanaka Lift	1,632	528	1,200	7.00	0	5	1,140	4,211	17,880	240
Finnland	251	20	300	7.00	0	0	300	41	1,004	40
Wades Way	423	33	300	7.00	0	0	300	70	1,234	60
Pony Lift	367	24	300	7.00	0	0	300	49	1,125	40
Surface Lift	605	170	600	7.00	0	0	600	714	8,981	80
Glacier Tram	4,018	1,314	196	6.00	0	0	196	1,546	24,310	60
TOTAL	**29,886**		**14,996**				**11,661**	**65,793**		**3,700**

Legend:

Existing, Upgraded/Modified Lifts

New, Proposed Lifts

Source: SE GROUP

Table 7:
Space Use Inventory for Existing Conditions – Base Area Facilities

Service Function	ALYESKA BASE AREA					HOTEL ALYESKA	GLACIER TERMINAL				TOTAL ON-MTN
	Day Lodge	Sitzmark	Admin Bldg	Mtn Ops	First Aid Ski Patrol		Seven Glaciers	Glacier Express	Round-house/ Ski Patrol	Demo Center	
Guest Services	0	0	0	0	0	194	0	0	796*	0	990
Ticket Sales	532	0	0	0	0	175	0	0	0	0	707
Public Lockers	576	0	0	0	0	300	0	0	0	0	876
Rentals/Repair	2,087	0	0	0	0	1,440	0	0	0	115	3,642
Retail Sales	216	0	0	0	0	1,450	0	0	0	115	1,781
Ski School	396	0	0	0	0	0	0	0	0	0	396
Children's Ski School/Daycare	0	0	0	0	0	0	0	0	0	0	0
Restaurant Seating	6,042	2,355	0	0	0	800	0	4,800	0	0	13,997
Kitchen/Scramble	1,830	1,722	0	0	0	260	1,481	1,024	0	0	6,317
Bar/Lounge	0	1,300	0	0	0	1,572	1,298	0	0	0	4,170
Restrooms	1,206	315	0	0	0	1,260	396	616	0	0	3,793
Ski Patrol/First Aid	0	0	0	0	753	0	0	0	706	0	1,459
Administration	0	0	1,564	1,238	0	1,925	0	0	0	0	4,727
Employee Lockers/Lounges	0	0	0	0	0	0	0	0	0	0	0
Storage	605	0	0	800	465	0	0	382	0	0	2,252
TOTAL SQUARE FEET	**13,490**	**5,692**	**1,564**	**2,038**	**1,218**	**9,376**	**3,175**	**6,822**	**1,502**	**230**	**45,107**

*Roundhouse Museum